



Universiteit Leiden

UNDERSTANDING SAFE CITIES

An exploration of the concept 'safe cities' using a grounded theory approach



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Abstract

Rapid urbanization is creating a current world in which cities have become high concentrations of people, business and culture. Therefore, the importance of local government and governance is growing, as well as one of the main local policy subjects: urban safety. Whereas cities always have seemed to attract or host all kinds of criminality, today they are challenged by newly emerging safety issues such as radicalization, terrorism and cyber threats. It is in this context that the aim for being a 'safe city' is high. The question that naturally follows is: what does a safe city actually constitute of?

Unfortunately, a profound answer cannot be found in academic literature; the concept of 'safe cities' seems rather understudied. Therefore, in this thesis, the urban safety field will be explored in order to get a better understanding of the concept 'safe cities'. To contribute to the development of the concept, it will be theorized on the one hand and operationalized in indicators on the other hand. This will be done by using a grounded theory approach and on the basis of both a literature study, as well as an empirical study that regards the perspective of three West-European cities: Rotterdam, Antwerp and Frankfurt am Main. In the three cases studies it is further examined how safety in cities can be measured.

By suggesting a working definition of the concept 'safe cities', which is further explained by suggesting four dimensions of urban safety that can be measured using the suggested list of indicators, this thesis aims to contribute to the way in which scientists could assess safety in cities, as well as on how cities themselves could assess their safety.

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Chapter 1: Introduction

1.1. Motivation for research subject

One of the twenty-first century's most transformative trends is urbanization; by 2050, the world's urban population is expected to nearly double (United Nations, 2016). For example, in line with the global trend, by 2030 in the Netherlands, about three quarters of the population growth will be in the bigger cities - where most people already work and live (CBS, 2016). This urbanization is due to critical change in the world's demographics, together with other reasons such as globalization, trade, development of economic and industrial hubs, changes in agriculture industries and shifts in allocation of resources by the state (Lemieux, 2016). Populations, economic activities, social and cultural interactions, as well as environmental and humanitarian impacts are now increasingly concentrated in cities. This has resulted in cities becoming increasingly important in public administration, dealing with massive sustainability challenges in terms of safety, among others. Whereas the importance of cities as geographical units is growing, the relevance of urban management and policymaking is thus also growing. One of the priorities in urban management is safety - it is in cities that greater opportunities for all sorts of crime and disruptions arise; therefore, the need to guarantee safety in cities is high. Cities have always been a vulnerable place as they are the place where people live and work and where businesses are located, therefore being the place where citizens and all functions of society face dangers and threats, which will increase because of urbanization. Moreover, urbanization and criminality - in particular, crimes against property in all its forms - seem to go hand in hand (Vanderschueren, 1996: 98). In addition, urban safety has become even more pressing with regard to new types of challenges, such as cybercrime and radicalization, in addition to traditional crime.

As the importance of cities, of safe cities, is growing, the question arises what actually constitutes a 'safe city' nowadays. In academic literature, a conceptualization of the concept is difficult to find – even though there is attention to the importance of the city as a spatial entity in the safety domain. Of course the concept refers to a very broad topic that can be understood in many different ways. For instance, even when there is agreement on the safety situation in a city, it could be that the citizens' perception of that situation is very different. However, in light of the developments just mentioned, it occurs that it is a field of study worth exploring. There is still little written about the meaning of urban safety and a sufficient body of knowledge on how the concept could be operationalized is missing. Therefore, in this thesis an exploration of the concept 'safe cities' is presented. It includes a terminological

discussion from theory and empiricism, as well as an operationalization in indicators to make the concept useful. This is done by means of *grounded theory*, an inductive approach in which theories and empirical findings are analysed and processed in order to build on a theory. It differs from most thesis research, in which an existing theory is applied to a practice. Using grounded theory, the first objective is to provide oversight on the terminological discussion by means of a literature review, and moreover, to further develop the concept ‘safe cities’ and make it useful, it is operationalized in indicators. This will be done on the basis of the following main research question:

How can the concept ‘safe cities’ be theorized on the one hand, and operationalized in indicators on the other?

It is assumed that the understanding of safe cities changes over time as developments in terms of safety threats occur, and that it also can vary widely between cities in different parts of the world. The research question will therefore be examined within a certain scope, namely the contemporary context of West-European cities. Three of such cities will be actually examined in case studies, namely Rotterdam, Antwerp and Frankfurt am Main.

1.2. Academic relevance

There is a knowledge gap in theorizing the complexity of ‘safe cities’, which is sought to be filled in this thesis. The academic relevance of the research conducted in this thesis, is thus that it contributes to the development of a theorization of a concept that is increasingly touched upon in academic studies, but not yet explored that much as a research subject *an sich*. There are classical theories focused on an understanding of ‘safety’ (or ‘security’), however these usually define the concept on state level, focusing on military threats. This perspective has been widened over the years and it seems that it now is a generally accepted idea that many issues related to safety occur on other levels as well. While there is much academic attention paid to a variety of safety aspects that involve the importance of cities as a referent object - including the people that live there, work there and all of the other functions that cities have in our society – solid scientific explorations of what safety means at the level of cities seem to miss. Building on a theory of what constitutes a ‘safe city’, by analysing and linking together different theoretical notions of (aspects of) urban safety – a practice rather new concerning this topic in the academic world - therefore is of highly academic relevance.

Operationalizing the ‘safe cities’ concept in indicators is also a rather new approach

within research that considers safety in cities. Other empirical studies on how cities actually define urban safety, on what topics they deal with and how they measure their state of safety could not be found. Except for the novelty of this research approach, this is also academically relevant in terms of paving the way for further research on urban safety, by looking at the actual threats cities nowadays face, which are partly different from the ones that used to be accounted for in academic studies.

1.3. Societal relevance

Challenges concerning safety in cities are high on the agenda today – the newspapers are filled with a broad range of incidents and threats that occur on city level. In some West-European countries the powers of the mayor are increasingly expanded in the safety field, and recent cyber-attacks that laid down certain businesses in and other particular functions of a city underscore the fact that cities now have to deal with newly emerging threats that they are not used to. Together with the previously mentioned urbanization trend, it makes the subject ‘urban safety’ very pressing today. As cities, or local administrators and politicians, seem to be very focused on becoming safer, it is very relevant to explore what ‘safer’ actually means in the context of a city. The societal relevance of this thesis is thus mainly based on its contribution to a better understanding of highly important societal issues of urban safety, by exploring what cities have to deal with in terms of safety. The second part of the thesis in which the concept ‘safe cities’ is operationalized in indicators, has an enlightening function regarding insight into where a safe city exists of. The list of indicators that will be derived both from literature and case studies could be valuable to all cities that deal with newly emerging safety challenges in addition to traditional crime.

1.4. Reading guide

Four other chapters that give structure to the thesis will follow this introductory chapter: a theoretical framework, the methodological chapter, the analysis and the conclusion and discussion. The theoretical framework, the second chapter, includes a conceptualization of ‘cities’, as well as a literature-based argumentation of the increased importance of cities, urban management and safety in the urban context. As there are no substantive theories that define the concept of ‘safe cities’, the theoretical framework does not provide such theories. It is rather used to form a basis for the literature review in the analytical part of the thesis, and to show the importance of researching ‘safe cities’. The theoretical chapter ends with a conclusion and a problem definition, which leads to the formulation of the main research

question. Subsequently, in the third chapter, the methodology of this thesis is discussed. An explanation of the grounded theory approach and the qualitative nature of the research is given first. Moreover, it includes an explanation of the multiple case study design that is used, and of the data collection and exploitation methods. Finally, the validity of the research is discussed. Then, in the fourth chapter the analysis and results are outlined. The chapter consists of two parts, each aimed on answering part of the main research question, by answering one of the following two sub research questions:

Part I – answer to sub research question 1:

How can the concept ‘safe cities’ be theorized?

Part II – answer to sub research question 2:

How can the concept ‘safe cities’ be operationalized in indicators?

Part I of the analysis and results chapter, the conceptualization of ‘safe cities’, is based on a literature review and desktop study. It ends with a suggestion for a working definition of the concept ‘safe cities’ and a conceptualization that is based on four dimensions of a ‘safe city’. Part II considers the operationalization of the concept in indicators. It begins with an assessment of two studies that have defined indicators for safe cities, followed by a partial conclusion in which the indicators of the studies are combined. Subsequently, three empirical case studies are presented, in which the concept ‘safe cities’ is explored in the context of Rotterdam, Antwerp and Frankfurt am Main. It is analysed how in these cities, the concept is understood, what topics play a role and how the cities measure their safety by means of indicators. Each case study also ends with a partial conclusion that presents a table of all of the topics and indicators deducted from the case. Finally, all of the results founded in part II of the analytical chapter are also brought together in a conclusion, in which the indicators for a safe city are presented in a comprehensive table. Then, in the fifth chapter, the final conclusions are drawn, followed by a discussion that considers the value of this thesis research, as well as a reflection on the limitations of the study. It ends with suggestions – mainly for further research, but also some practical suggestions are made.

Chapter 2: Theoretical framework

As there is no actual theory focused on the concept of ‘safe cities’, this thesis is using grounded theory for the conceptualization. This will be partly based on a literature review, presented in the analysis and results chapter of this thesis. As the theoretical notion of ‘safe cities’ thus is not included in this chapter, only certain main developments that are relevant to the research subject are discussed here. Based on literature, it is laid down how the research subject has grown in becoming a relevant topic to study. In the first part, an explanation of the term ‘cities’, or, in other words ‘metropolises’, ‘metropolitan regions’, or ‘urban areas’ is given – in this thesis it is referred to as ‘cities’, further to be explained hereafter. Also, it is discussed why the importance of the city has increased, and still is increasing. Then, in the second part, the importance of ‘politics of security’ in cities is discussed, which will function as a framework for the later theoretical analysis of the concept of ‘safe cities’. It includes an introduction on what safety on the local level entails and how it is dealt with by shedding light on urban governance in reference to safety. It is important to explain what ‘politics of security’ in a city entails and how the management of local safety has shifted. It will enhance our understanding of how urban safety can be defined and operationalized as it depends in part on by whom and in what way safety on the local level is governed.

2.1. Defining ‘cities’ and understanding their importance

2.1.1. Conceptualization of cities

Within this thesis, the spatial entity that is central is referred to as a ‘city’. Since the question of what constitutes a city can be answered in several respects, it is important for clarity in this thesis to distinguish what definition of a city is used. Most people agree that cities are places where large numbers of people work and live, and that they are hubs of government, commerce and transportation (United Nations, 2016: 1). According to Eurostat (European Union, 2015), a city "consists of one or more local administrative unit [...] where the majority of the population lives in an urban centre of at least 50 000 inhabitants (previously known as the core city)". In this study, cities are further understood as ‘metropolitan areas’: “A formal local government area comprising the urban area as a whole and its primary commuter areas, typically formed around a city with a large concentration of people (i.e., a population of at least 100,000)”. (Unicef, 2012: 10). This choice is based upon the desire to also study safety challenges that do not or less occur in smaller cities and municipalities – the metropolitan

issues. Whereas ‘safety’ may mean something different in every city, it is assumed that with focusing only on the metropolitan areas, possible differences are reduced.

2.1.2. Growing importance of cities

Why study cities? What makes the city such a relevant research subject? First of all, as the United Nations (UN) (2014: 1) reported, globally, in 2014, 54 per cent of the world’s population resided in urban areas. The UN further expects the number to grow to 66 per cent by 2050. In Europe, the number is even greater: 73 per cent of the people are living in urban areas. This process of urbanization has been associated historically with other great economic and social transformations, bringing more geographic mobility, lower fertility, longer life expectancy and population ageing (United Nations, 2014: 3). Cities concentrate much of national economic activity, government, transportation and commerce. Also they provide essential links with rural areas, between cities and across borders – therefore they are important drivers of development and poverty reduction in urban as well as rural areas. Life in the city is often associated with better levels of literacy, education, health, access to social services, and improved opportunities for political and cultural participation (Ibid). In short, both people, business and the cultural life are highly concentrated in cities. Therefore, cities are by definition relevant units of observation in social science – and in particular in ‘security studies’ as cities also bring certain vulnerabilities, which will later be discussed. In any way, if ‘everything is happening in cities’, it is important to assess safety in those cities. If cities are not safe, most people in the world are not safe either.

This line of thought is also followed by political scientist Benjamin R. Barber (2013: 3). He emphasizes that urbanity defines how we live, work, play and associate, and that even though urbanity is not our nature – it is our history. It is the place "where creativity is unleashed, community solidified and citizenship realized" (Barber, 2013: 3). According to Barber, cities are not only the geographical units where most aspects of modern life take place but also the place where problems should be solved and progress should be accomplished. Politics start in the neighbourhood and in the city. Barber argues that therefore the city rather than the nation-state is, or should be, the agent of change. “Let cities”, as Barber (2013: 3) continues, “the most networked and interconnected of our political associations, defined above all by collaboration and pragmatism, by creativity and multiculturalism, do what states cannot. Let mayors rule the world”.

2.2. The importance of ‘politics of security’ in cities

2.2.1. What is ‘politics of security’?

According to Boutellier (2006), security is by definition in a relationship with other fundamental principles of the rule of law; with privacy, justice and freedom. Security issues tend to overshadow these other principles for social order. Politics of security then moves between responsabilisation and centralization, between prevention and repression, between self-reliance and additional regulation (Boutellier, 2006). ‘Politics of security’ involves the importance of the emergence of a ‘transnational state system’ (Bowling & Sheptycki, 2012, in Devroe et al., 2017a: 5) that compensates for and thereby challenges the national state sovereignty regarding home affairs. Security is now shaped by politics whereas the national, supra-national, trans-national and sub-national authorities use their relative power to determine policing agendas. Devroe et al. (2017a: 7) further argue that the inter-disciplinary subject of ‘security studies’ presents an opportunity to understand policing as an emergent product of interactions between ‘problems’ and ‘responses’ (Balzacq and Dunn Cavelt, 2016, in Devroe et al., 2017a: 7). This underscores the importance of political competition, which includes governing rationalities. Focusing on policing research, they argue that it should be located in an explicit analytic of power (Devroe et al., 2017a: 7). Policing is a process, which can be undertaken by a multiplicity of actors beyond the state police (Ibid: 8). Processes of diverging and/or converging tendencies, which will be further clarified in the following sections, can characterize politics of security.

2.2.2. Glocalisation: Safety on the local level

During the Cold War, safety was typically approached within a national security perspective, in which borders were the primary ‘fronts’ that had to be secured (Boyle & Haggerty, 2009: 258). Due to perceived changes in the nature of national as well as international threats, the end of the Cold War added to a re-calibration of safety. Focus events such as the terrorist attacks in London and 9/11 have encouraged safety officials to recognize that threats are not always produced by a nation state, but can come from coordinated sub-national groups as well. Consequently, conceptions of security became increasingly sub-national, regional and urban in scale (Ibid; Graham, 2004). In addition, as cities are the centres of power, culture, innovation and prosperity, they are target rich environments full of people, roads, buildings, power cords and businesses that may be threatened in countless ways (Bugliarello, 2003;

Godschalk, 2003; in The Hague Centre for Strategic Studies, 2017: 10). Due to the growing urban population, criminality and specifically violence is increasing in urban areas. This leads to potential challenges in the future, mainly for prevention and enforcement by the police (Devroe, 2018). According to Devroe et al. (2017b: 304), the concept of a European world of metropolitan policing captures the particularities as well as the urgency of today's challenges to the politics of security in European city-regions better than the conventional framing of security issues as international relations.

When looking at these different levels in which safety plays a role, Bourdieu refers to them as 'semi-autonomous fields' (Bourdieu, 1977, 1990, in Devroe et al., 2017a: 12). Fields are understood as systems of objective relations between positions that are constituted by multiple species of capital or power. Actors that are interrelated fill these positions, and the fields are structured social places characterised by asymmetric power relations. Each field has its own sets of rules, schemes of dominance, subordination and legitimate opinions 'relatively autonomous' of the broader social structure. This mainly implies that the formulation of policing strategies, or the management of safety, is an outcome of influences from different discrete yet interrelated internal security fields (Devroe, et al., 2017a: 13). Therefore, one should not speak of one internal security field, but of a multiplicity of semi-autonomous fields of policing in which objects of 'freedom, security and justice' – according to the researchers of the Policing European Metropolises Project (PEMP). Regarding local safety policies it is important to take into account that the city of interest is also always part of a national security field, and of a global context – although cities can differ in terms of their specific transnational contexts. Figure 1, as presented in the PEMP book, shows how cities are all part of a greater context, in various ways. Devroe et al. (2017a: 13) further add that the particular insertion of metropolises within these overlapping fields of security can help to identify, characterise and explain differences of divergence in policing strategies. This also relates to King's (1997) theory on the diversified insertion of cities within a 'world urban system', which shapes their particular opportunities for freedom, security and justice, as well as the threats they export and import. For example, Brussels imports certain security threats as a consequence of its position as the European Union's 'hometown'. Cities that experience comparable problems, then, are liable for cross-national comparison – according to Devroe et al. (2017a: 14).

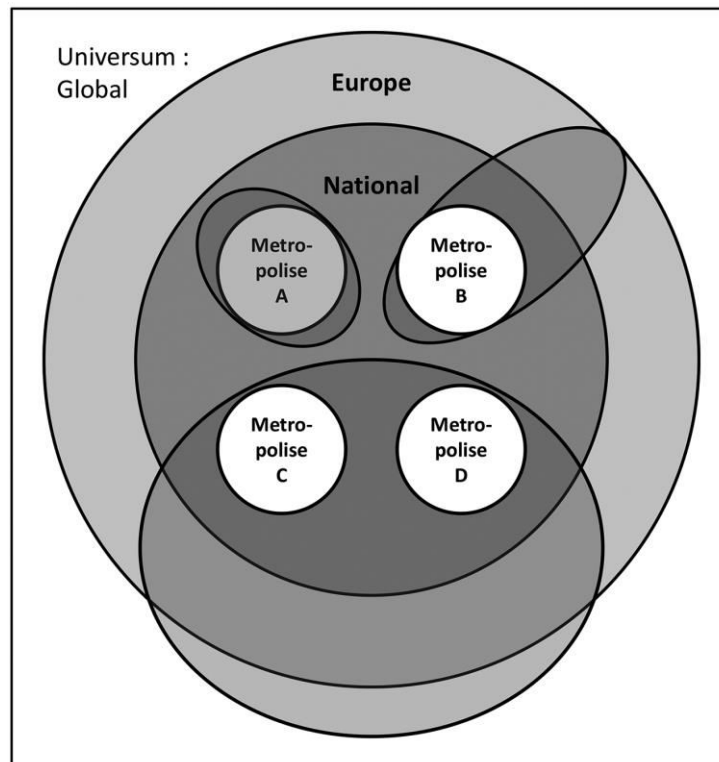


Figure 1: The multiple internal security fields in Europe that overlap (Devroe et al. 2017a: 13)

In the Policing European Metropolises Project it is further presumed that the metropolitan area is an increasingly important object of policing governance because of the transnational challenges encountered by European countries. These include the movement of capital, labour, goods and services that is settled in the Treaty on European Union: the Amsterdam Settlement (Devroe et al., 2017b: 303). The researchers of PEMP argue that metropolitan policing is “in part, an artefact of the Amsterdam Settlement and the four freedoms that facilitate mobility across national territories and, in doing so, create new internal security fields” (Ibid). Metropolises become *key nodal points* (Castells, 1996, in Devroe et al., 2017a: 4) within an integrated network system of social relations, in which national governments increasingly orient themselves in function of the interests of powerful cities (Scott, 2012; Clegg, 1989; Edwards et al., 2017; in Devroe et al., 2017a: 4). Within those metropolises, markets are concentrated of the illicit and licit, capital, labour, goods and services that moved there from different localities. This can be understood in light of the broader process of ‘glocalisation’; because of the greater mobility of capital, work, goods and services across national borders, cities are the engines of innovation and change. Great societal developments such as aging, technological developments, changing social cohesion, Europeanization, securitization, responsabilization, neoliberalization, plural policing, consumentalism, privatization and militarization, ecological awareness, migratory flows,

increasing diversity and inequality, financial crisis, but also declining crime express themselves sharpest in big cities where international, national, regional and local scales come together in urban policy (Devroe, 2018). Metropolises thus can be seen as nodal points in which new democratic ordering principals come together, but also where global challenges are reframed to local political issues (Corijn, 2015, in Devroe, 2018). The transnational mobility then privileges certain localities that are able to protect their political, economic and cultural power, whilst subordinating other localities that struggle to adopt to these powers (Devroe et al., 2017: 303). This process is in turn producing a significant and uneven development of security problems within the metropolises.

2.2.3. Urban management of safety

Not surprisingly, regarding the previously discussed developments affiliated with ‘glocalisation’, in the last decades, the management of urban safety has been subject to change too. A brief illustration of the principal developments is given in this paragraph, as urban management of safety will be further discussed case-specific in the analytical chapter of the thesis. First it is shown how there has been a shift from government to governance, and what different urban security regimes there are – which can help to understand the cases. Finally, trends in governing approaches considering urban safety are described.

2.2.3.1. From government to governance

For a long time, providing safety was a task belonging exclusively to the police and judiciary (Devroe, 2012: 94). However, in many cities, since the 1980s, a trend developed of more organizations getting involved in safety policies: the multi-agency approach (Van den Berg, 2006: 21; Edwards et al., 2013), towards an integral approach of urban safety (Devroe, 2014). This change was due to a rise of traditional safety challenges such as order and criminality, combined with new types of risks (Beck, 1992, in Prins & Cachet, 2011: 44). It is becoming apparent that when problems are more connected, government and police cannot solve these problems alone. More parties have to be involved, and the citizen and his or hers subjective perception of safety needs a central place in safety management (Prins & Cachet, 2011: 44). The traditional management model, that of government, in which the nation state has the intervening and caring role, turned out to be too limited in the light of the increased diversity, complexity and dynamics of a society in late modernity (Devroe, 2012: 94). As the central government found out not to be capable anymore of solving problems alone, the emphasis started to be more focused on a local approach. Therefore, the central management level,

including its bureaucratic steered mechanisms of power, lost its position in favour of decentralization to lower levels of management (Devroe, 2012: 94). Thus, the governance model became a necessary alternative, as the changes from late modernity demanded a local approach, custom work, a police and judiciary closer to the civilian, involving other partners (Crawford, 2004, in Devroe, 2012: 94). A policy oriented at governance emerged, focused on developing partnerships and local prevention strategies. The central government shifted from having an intervening and care providing role to a facilitating role (Devroe, 2012: 94). Governing was no longer monopolised by states, but also no longer by local government on its own.

The safety provision shift from 'less government' to 'more governance' is also referred to as a shift to a form of 'new public management' (Devroe, 2012: 94). 'Public', because whereas the private industry did enter the domain of safety management, the closure remains in hands of the government. In the new public management model the government is the facilitating authority and/or partner within partnerships that include both public and private actors from different domains and levels (Kooiman, 1999, in Devroe, 2012: 87). In addition, in the nineties there was a shift from a focus on criminality to a more 'general safety', which has broadened the field of players in the safety domain (Cachet & Ringeling, 2004, in Devroe, 2012: 87). It resulted in more horizontal forms of 'governance' in which actors from both the public and private sector try to reach coproduction of policy together (Prins & Cachet, 2011: 47).

2.2.3.1.1. Different security regimes (Stone & Devroe, Edwards & Ponsaers, 2017a)

In Policing European Metropolises, Devroe, Edwards and Ponsaers (2017a) introduce five contemporary metropolitan policing regimes that can be found in Europe. The first is the maintenance regime, in which the oldest and most familiar policing disposition is maintained despite the serious criticism about the limits of its punitive display: the criminal justice disposition. A policy agenda is stabilized around specific rules: an orientation around offenders – rather than victims or environments – that are already known by the authorities because of their past offences against criminal and public order laws. Secondly, in the developmental regime, forms of risk management oriented around individuals and groups complement a criminal justice agenda. These are known or suspected by the authorities of embarking upon offending careers, or reducing the opportunities for victimization that possibly includes particular criminogenic environments and be targeted at whole populations as well as 'at-risk' groups of repeat victims and prolific offenders (Devroe et al., 2017b: 310).

Third, reformist regimes are distinguished, in which the criminal justice agenda is reformed. A greater emphasis lies on the diversion of offenders and victims away from the criminal justice and penal process, towards restorative justice remedies. Fourth, in transformative regimes, the criminal justice agenda is changed from a core to a peripheral concern. Its replaced by a focus on both social and restorative justice objectives, such as reducing crime and reordering public safety through policies that are oriented around the environmental conditions that produce offending, victimization and civil unrest – in particular both gross inequalities on a social and economic level, and exclusion of social groups from effective political participation. Finally, failed regimes are identified, in which rival agendas cancel each other out and no governing regime is stabilized.

2.2.3.2. Trends in governing approaches

The shift from government to governance of urban safety not only concerns a broadening in the actors that provide safety – it also meant a broadening of the way in which safety is provided. It constitutes of both responding to actual occurring threats to safety, as well as anticipating to and preventing threats that could occur in the future (Johnston & Shearing, 2003, in Devroe, 2012). As shown in the previous paragraph, urban regimes can differ in whether they emphasize an approach focused on the criminal justice system, or on social and restorative justice objectives. West-European governments can have a focus on repression, a more reactive form of safety management, or on crime prevention.

Looking at urban management of safety, multiple shifts can be indicated, which all seem connected to one each other. The shift from top-down management by the state to the increasingly important role of the mayor and local government is shown. Also, the shift from safety provision only by government, police and judiciary, to a multi-agency approach that includes other organizations, businesses and citizens is shown. In addition, these developments have been accompanied by different approaches to urban safety, including repressive and preventive measures. In the Netherlands, the concept of governance in combination with both a preventive and a repressive approach has been translated to ‘integral safety’, in which the mayor is the facilitator with a control function on the local level. An ‘integral safety policy’ then, refers to systematically and cohesively working together on maintaining or improving local safety in all its facets, under the direction of government (Ministerie BZK, 1998, Engberts & Cornelissen, 2010, in Prins & Cachet, 2011: 44). Integral safety itself can be understood in several ways, from the nature of the problems and the

underlying causes, to the organization of the approach to the problems (Prins & Cachet, 2011: 45).

2.3. Conclusion, problem definition and research question

As shown in this theoretical chapter, today it is evident that cities play an important role in several respects and that their policies possibly are (or should be) even more important than those of states, as cities are the epicentre of people, businesses and culture. It is discussed how certain urban regimes are developed concerning safety, how ‘glocalisation’ has led to safety becoming an even more urgent matter in urban life, and how the governance of safety has also shifted from a state-led approach to a growing responsibility for mayors of cities that manage safety in collaboration with local actors, both public, private and civilian. However, despite the importance, it is yet unclear what safety in cities actual entails; what does the word ‘safety’ mean in the governance of safety? What actually is a ‘safe city’? A clear definition of ‘safe cities’ cannot be found in academic literature; many researchers do not explicitly state what they believe a safe city consists of. However, every city of course wants to be a ‘safe city’. Therefore, as it is such a pressing issue for many, interrelated to various other aspects of society, it is still very important to have an indication of how it could be understood today. As a city, you want to be able to indicate what goes well and what does not, so you can adjust your policy. However, you need to know what to monitor, or at least know what options there are so you can make your choice. Therefore, the main research question in this thesis is:

How can the concept ‘safe cities’ be theorized on the one hand, and operationalized in indicators on the other?

This research question consists of two parts that can be divided into two sub research questions:

- 1) *How can the concept ‘safe cities’ be theorized?*
- 2) *How can the concept ‘safe cities’ be operationalized in indicators?*

While there seems to be a problem of theorizing the complex and diverse reality of ‘safe cities’, in this thesis an attempt is made. To answer the first sub research question, that is to theorize the concept of ‘safe cities’, different approaches to (urban) safety are analysed,

combining different thoughts in literature and making new suggestions. Probably it is impossible to formulate a definition that covers all aspects, is of usable format, and is shared by everyone. However, looking at how pressing the issue nowadays is, it is worth the try and see what the possibilities are by further analysing how urban safety is approached in (academic) literature. For the operationalization of the concept in indicators – the second sub research question – emphasis will be on how cities are commonly compared in terms of safety, how different West-European cities understand the concept ‘safe cities’, and how these cities determine whether they are safe. What are the safety topics indicated in the cities and what indicators do they use to measure the safety level in the city? An answer to these questions may enable cities to learn from each other and compare themselves to other cities on topics that are relevant for them as well. The aim is to arrive at a preliminary standard, while being aware of the fact that choices are made in the process and that this has an expiration date in the dynamic society we live in. However it is the task of scientists to interpret phenomena, even when the reality is complex.

Chapter 3: Methodology

The aim of this thesis research is to establish a theoretical conceptualization of ‘safe cities’ and to make a start towards the creation of a base for measurement of ‘safe cities’ by using an explorative, grounded approach. To enhance our understanding of what constitutes a ‘safe city’ and to determine what the indicators for ‘safe cities’ are, knowledge from the existing body of literature on urban safety will be supplemented with knowledge from an empirical study. For the first sub research question, *how can the concept ‘safe cities’ be theorized*, the emphasis will be on an extended literature study. To answer the second sub research question *how can the concept ‘safe cities’ be operationalized in indicators*, data is derived from a desktop study, and, primarily, from three case studies through semi-structured interviews and document analysis. The experts that are interviewed for the case studies are also asked how they would define a safe city – so those answers will be taken into account as well concerning the first research question. This thesis’ analysis will thus be made on the basis of qualitative research methods, using a grounded theory approach.

The importance of the research subject ‘safe cities’ has been made clear in the theoretical chapter of this study, where it was concluded that the meaning of the concept of is still unclear. Based on this notion, the principal scientific objectives of this thesis research are threefold:

- 1) To gain a better understanding of the concept of ‘safe cities’, both in how it is approached in literature as well as how it is manifested in the practice of cities
- 2) To fill in the literature gap on the concept of ‘safe cities’ and contribute to the empirical body of knowledge that concerns the concept
- 3) To contribute to the way in which scientists could assess safety in cities, as well as on how cities themselves could assess their safety in a more scientific manner

In this chapter, the way in which research is conducted for this thesis will be further explained. It starts by elucidating the meaning of a grounded theory approach and further explaining why this research can be classified as a qualitative study. Thereafter, the research design and methods are discussed, including an operationalization of the research question into the sub research questions and the interview questions. The internal and external validity of the research is discussed in the final part.

3.1. Nature of the study

3.1.1. Grounded theory approach

In social sciences, researchers most commonly begin with studying an existing theory, and then applying that theory on a certain practice in reality – in this way it is possible to assess whether the theory still holds in that particular case, or at all. Theories can be used to understand data that are empirically gathered – however, sometimes reality runs faster than theory. As in this case; there is no real theory about how to approach the concept of a ‘safe city’, nor is there a definition or explanation of the concept to be found in academic literature. Therefore, this thesis is based on a different research approach: that of *grounded theory*.

Grounded theory, as defined by Barney G. Glaser and Anselm L. Strauss in 1967, refers to discovering theory from data. Data is systematically obtained and analysed in order to uncover emergent dynamics that are grounded in the data, which can be used for the creation or expansion of (new) theories. In this thesis, the grounded theory approach involves that existing scientific literature concerning urban safety will be analysed and processed, in order to come to a theorization of the concept ‘safe cities’- instead of applying an existing theory to practice. The conceptualization from the literature review will thereafter be expanded by operationalizing the concept in indicators that are deduced out of data coming from desk research and case studies. The case studies include interview assessment, which is the most common approach to data collection in grounded theory (Charmaz, 2006). Altogether, theory (about ‘safe cities’) will thus be discovered from data (both theoretical and empirical).

3.1.2. Qualitative Study

The main objective of this research is to explore the field of urban safety and develop the concept ‘safe cities’ by theorizing it, as well as operationalizing it in indicators. As there is no ambition to directly measure urban safety, but rather to explore its meaning, a qualitative study is found to be the best approach for this research. Qualitative research "begins with assumptions, a worldview, the possible phase of a theoretical lens and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem" (Creswell, 2007: 37). The research for this thesis begins with assumptions of a growing importance of safety in cities, and a ‘worldview’ of safety starting at the local level. At the same time, safety is by definition a social and human problem – as it is the absence of

it that is inherent. In this thesis, it is studied what meaning is given to this problem – which is further elaborated on in the next paragraph. This is thus done by adapting a qualitative approach; the collection of data is done in a natural setting and is sensitive to the people and places studied. The analysis of the data is inductive and meant to establish certain patterns or themes (Ibid). What form all of these elements of qualitative research will have in this study is also further explained in the following paragraphs. In figure 2, it is shown how the broad subject of ‘safe cities’ is narrowed down to a clear research focus for this thesis. It starts with the theorization of ‘safe cities’. The next step is researching what the indicators are to determine the level of safety in a city. Finally, the broad research subject is narrowed down to the context of specific cases.

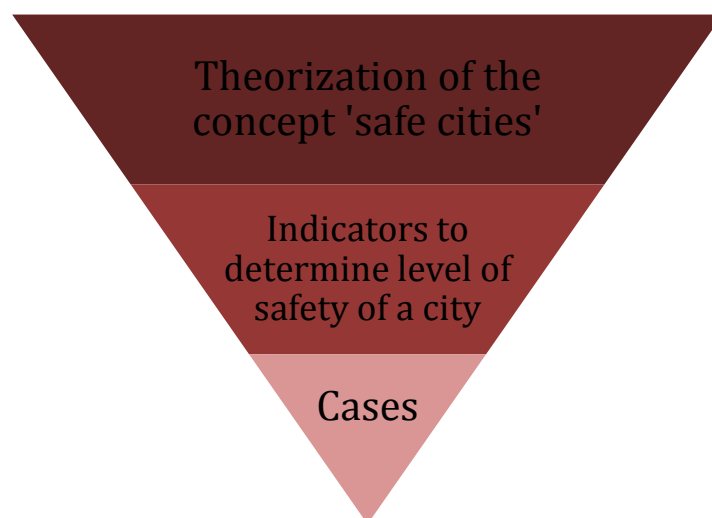


Figure 2: The research funnel

3.2. Multiple case study design

For this thesis, the choice was further made for a multiple case study. Case studies are a common way for doing qualitative research (Stake, 2005: 443). Gall et al (1996: 545) define case study research as “the in-depth study of instances of a phenomenon in its natural context and from the perspective of the participants involved in the phenomenon”. In a case study, the researcher usually uses diverse data sources and is looking for explanations for processes (Swanborn, 2000, in Devroe, 2012: 122). This is a beneficial factor of a case study, as the use of multiple sources can lead to a balanced and validated image of the research subject, safe cities, in all its facets.

Additionally, Stake (2003) identifies three types of case study. This thesis includes what Stake would call a *collective case study*, as multiple cases are studied in order to

investigate a phenomenon – namely, urban safety. A *collective case study* is an *instrumental study* extended to several cases – and an instrumental study means that the case is of secondary interest, as it plays a supportive role by facilitating our understanding of something else – in this thesis, of a safe city in general (Stake, 2003: 137). So the three cities are examined mainly to provide insight into the issue of urban safety and how that is measured. However, the cases are still looked at in depth, as this helps to pursue the external interest. As Stake (2003: 138) elaborates, individual cases in the collection might or might not be known beforehand to manifest some common characteristics. The cases can be similar or dissimilar, redundancy and variety each important – they are chosen because it is believed that understanding the cases leads to a better understanding about a still larger collection of cases – in this study, safety in even more West-European cities.

In Figure 3, the research design of this thesis is shown, including the units of analysis (Rotterdam, Antwerp and Frankfurt am Main) and the objects of observation (experts and documents in the cities). Together with an analysis of currently used indicators for ‘safe cities’ and the literature study regarding urban safety this will lead to a better understanding of the research subject: ‘safe cities’.

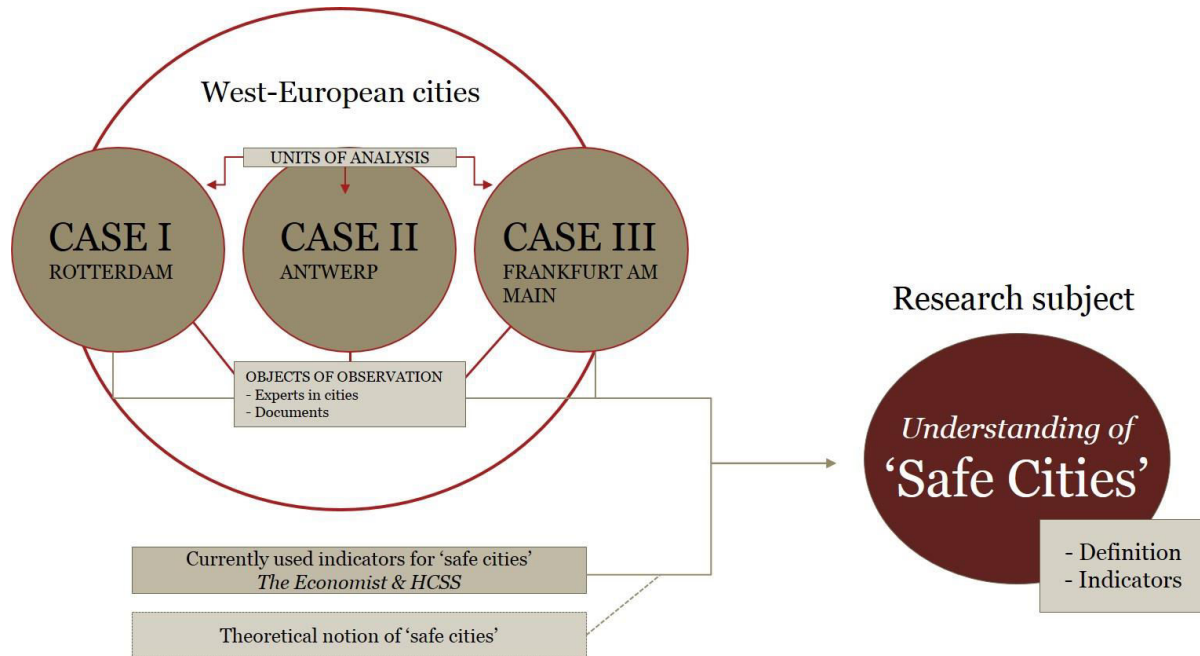


Figure 3: The research design

3.2.1. Case Selection

The case selection in this thesis begins with the choice for a focus on West-European cities, which is the first demarcation of the objects researched (cities). The choice for the three cities studied – Antwerp (case I), Rotterdam (case II) and Frankfurt (Case III) - is based on multiple considerations. First of all, a choice has been made for a cross-national case selection, as it is assumed that insights from different countries and contexts will add to the knowledge on urban safety. Then, the particular cities are chosen on the basis of a most similar design method. In a most similar design method, the two or more cases studied are similar on specified variables other than X1 and/or Y (Seawright & Gerring, 2008: 9). The most similar character of the cities thus begins with the finding that the three cities are all located in West-European countries that are also of comparable nature. Secondly, they are all ‘metropolitans’, with a population between the range of 500,000 – 1,000,000. The three cities are centres of business and people with many different nationalities; world cities, but not capital cities. However, these similarities are not unique for just the three cities selected. There was a larger number of options to choose from; therefore part of the choice for these three cities is based on convenience sampling. First of all, the thesis supervisor and her colleagues, in the Policing European Metropolises Project – a valuable source for the context outline of the cities - already researched two of the three cities chosen: Rotterdam and Antwerp. Also, in Belgium it was most convenient to choose a city in Flanders, because of the spoken language. Finally, this thesis was written in combination with a graduation internship at PwC Consultancy (Operations Public Sector), and because of good contacts within the PwC Europe network, Frankfurt am Main was chosen as the third case. Whereas Antwerp and Rotterdam are both port cities, it might have been more logical to select Hamburg in Germany, however because of the language difference; contacts and thus convenience were an essential consideration. Therefore, Hamburg was not an option.

Regarding the most similar design that is used, there are also two important differences between the three cases. First is the organization of the police. This is a relevant factor as the police are one of the main responsible organizations for safety in cities. As in this research the focus is on the city level, it should be acknowledged whether the police are also organized on the city level – or whether it is controlled nationally. In the Netherlands, thus in Rotterdam, there is, since a few years, a unified police system, the Dutch national police. This Federal Police includes a national unit, a national police academy and police services centre, and eleven regional units, subdivided into districts and base teams. In Germany, including Frankfurt, the police are also territorially organized on a regional scale; the semi-decentralized police system consists of sixteen *Landespolizei*, on the level of the

Landër, which are the sixteen states that Germany is divided in (Devroe et al., 2017a: 44). Former municipal police forces have been incorporated in the *Landespolizei*. On the national level Germany also have a Federal Police, a Federal Criminal Police Office and a small police force working for the federal Parliament. In Belgium, and therefore in Antwerp, the police is also territorially organized. It consists of 195 ‘Zonal’ Police Forces, but there is also the Federal Police, which further includes 10 deconcentrated provincial units (Devroe et al., 2017a: 49). Secondly, there are differences considering the head responsible for safety in the city: in Rotterdam and Antwerp the mayor is ultimately held responsible, whereas in Frankfurt there is a shared responsibility between the *Länder* police and local government. In table 1 the differences and similarities between the three cities are summarized.

	Rotterdam	Antwerp	Frankfurt am Main
Head responsible for safety in the city	Mayor	Mayor	State police together with local government
Police system	Unified police	Territorially organized	Territorially organized
Number of inhabitants	639,587	521,815	731,095
Area	208,89 km ² (land)	204,51 km ²	248.31 km ²
Port city	Yes	Yes	No
Capital	No	No	No

Table 1: Features of the three case studies

3.3. Research questions

In this thesis there is one main research question that can be divided into two sub research questions, listed in table 2. The first sub research question – *how can the concept ‘safe cities’ be theorized* – will be answered in the first part of the analytical chapter, mainly on the basis of the literature review and desk research, enriched with insights from the case studies. The second sub research question – *how can the concept ‘safe cities’ be operationalized in indicators* – will be answered in the second part of the analytical chapter. This will be done mainly on the basis of the three case studies, as well as further desk research and literature reviewing.

Main research question	Sub research questions
How can the concept ‘safe cities’ be theorized on the one hand and operationalized on the other?	1. How can the concept ‘safe cities’ be theorized?
	2. How can the concept ‘safe cities’ be operationalized in indicators?

Table 2: Research questions

The research questions formulated all are in function of explorative research regarding 'safe cities'. Yin (2009: 9) refers to research questions that are typical for studies with certain purposes. He identifies the following types of questions: 'who', 'what', 'where', 'how', and 'why'. The main research question of this thesis consists two 'how' questions, which are therefore suitable for a qualitative study (Yin, 2003). However, they both can also be translated into 'what' questions: the first can be understood as '*what are 'safe cities'*'. The second can be read as '*what are indicators for 'safe cities'*'. 'What' questions are usually used in *exploratory* research, such as in this thesis. In an exploratory case study, fieldwork and data collection are undertaken before final definition of the study questions and hypotheses (Yin, 2009: 9). Only the broad features of the study design have to be determined *a priori*. The purpose of this thesis is to explore the field of safety and unsafety on the level of cities. Exploration in this thesis is done by the means of a grounded approach, including the three case studies.

3.4. Data collection: triangulation of methods

In this qualitative study with a grounded theory approach, data collection will be done by using a triangulation of methods. Triangulation is mainly understood as a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation (Stake, 2000: 454). This process will contribute to the internal validity of the thesis. The different methods that are used are literature review and desk-research, semi-structured expert interviews and document analysis. Together these methods allow for a thorough assessment of the cases and, in the end, the research subject. In the following three paragraphs, the different methods of data collection are further explained.

3.4.1. Desk research and literature review

The literature review and desk research form the starting point of the research conducted for this thesis. For the first sub research question, literature review is the main method of data collection. The research subject is also explored by gathering data on current indicators that are used to compare safety in cities, using desk research. This has, together with the literature review, formed a base of knowledge that has partly steered the case study research conducted thereafter.

3.4.2. Expert interviews

For every case, interviews with experts are conducted using a semi-structured questionnaire. A semi-structured interview is the most common mode for data generation in grounded theory (Reiter et al., 2011: 41), and is suitable because of the explorative nature of the research. The questionnaire was developed as an extension of the sub research questions and is visualized in figure 4. Below, the choice for the interview partners is presented, as well as an overview of the interviews and a further explanation of how the interviews are conducted.

The interview partners

In every case study, thus in every city, experts that are professionally concerned with safety (policy or research) in the city were approached. Because of the limited time and capacity, and as three different, contra-national cases were studied; interview partners were chosen from the more traditionally responsible, governmental organizations. These include the municipality, the police, and the organization/person responsible for crisis and disaster. It was also attempted to interview persons responsible for safety research/measurement in every city, as it was assumed that they would have the most information concerning indicators that are used to measure safety. While it was not possible to conduct interviews in all organizations or with all individuals that could be seen as a stakeholder concerning urban safety, the variety of the organizations spoken with made for diverse insights. It was assumed that the interview partners were the actual experts on the field of urban safety, as they are not only held responsible for maintaining a certain level of safety in the city, they also are in the midst of the practice as it is their day to day job. Moreover, the municipal officials that were interviewed have a principal directing or policy-advising role, which was searched for based on the assumption that they are in the position with oversight on different aspects of urban safety. Table 3 presents an overview of the organizations/departments where interviews were conducted.

Case	Organization/department
Rotterdam	City administration – safety department
	City administration – research department
	Veiligheidsregio Rotterdam-Rijnland
	Regional Police Unit Rotterdam
	Veiligheidshuis Rotterdam-Rijnland
Antwerp	City administration – cabinet advisor safety & research department
	City administration – disaster coordination
	City administration – safety policy department
	Local police Antwerp
Frankfurt am Main	City administration - Crime Prevention Council

	State police Frankfurt am Main
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Table 3: Interviewed organizations in the three case studies

The interviews

As previously mentioned, in the interviews a semi-structured questionnaire was used, meaning that questions were formulated beforehand. On the one hand, this ensures that the experts will give answers to the questions that are important for the research, which increases the chance that the information that is sought for will be provided. On the other hand, it also accounts for flexibility to adjust the specific questions asked with regards to the person spoken too. Also, it ensures that it is possible to follow the flow of the conversation in the interviews, and see what the interview partners would bring up themselves. In figure 4, the interview questions are shown, which were also shared with the experts prior to the interviews, along with an introduction to the research. This introduction was given again in the interviews, followed by the handover of an informed consent form. Also some introductory questions were asked that concerned the function and organization of the expert, before continuing with the questions in figure 4. From the twelve interviews in total, ten were conducted in person and two were conducted by videoconference due to the distance.

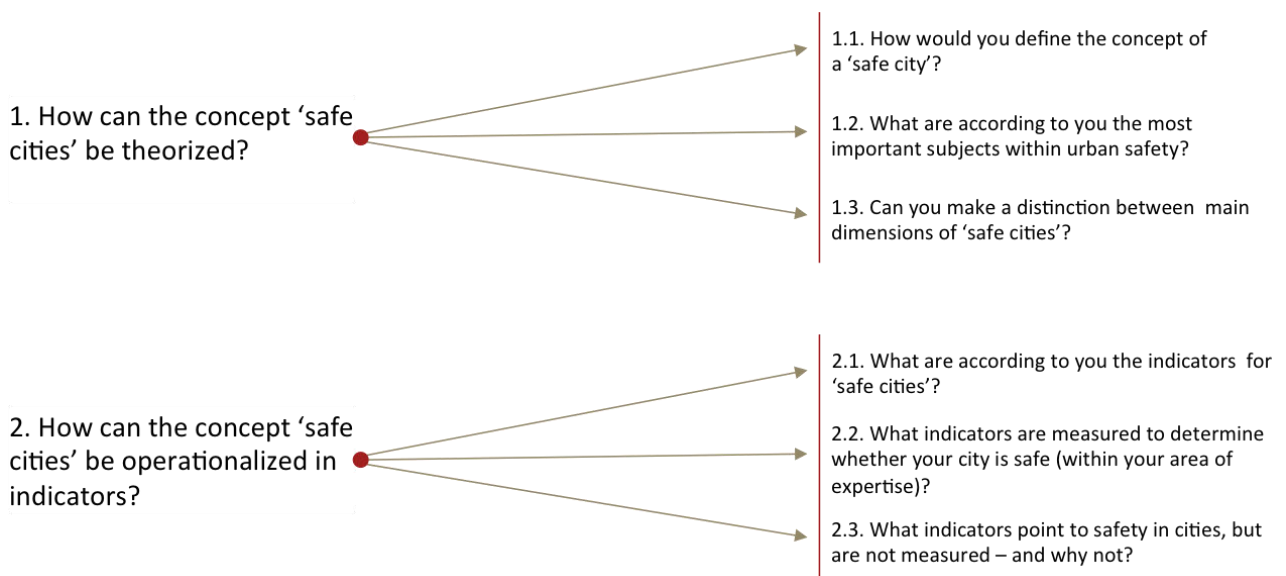


Figure 4: Operationalized interview questions

3.4.3. Document analysis

Document analysis, described by Bowen (2009: 27) is the “systematic procedure for reviewing or evaluating documents - both printed and electronic (computer-based and

Internet-transmitted) material”. In this thesis, the final gathering method is derived from document analysis; this method is used in the three case studies. The documents that will be analysed primarily consist of a mixture of different kinds of governmental/organizational documentations. These include policy documents, evaluation reports, publication material and a limited number of internal documentation.

According to Bowen (2009: 27), the main benefits of document analysis are the exactness of the derived data and the lack of obtrusiveness and reactivity. In this thesis, document analysis will provide a substantial amount of useful data. This data is sometimes used as a starting point for the semi-structured expert interviews, in which further questions could be asked on the basis of the information collected from the document analysis. Another purpose of the document analysis in this thesis is to retrieve information from organizations, which are not spoken to by means of an expert interview. Further, the data from the document analysis provided affirmation regarding data from the semi-structured expert interviews, which is important as a “qualitative researcher is expected to draw upon multiple sources for evidence” (Bowen, 2009: 28) – aiming for convergence.

3.5. Data exploitation

In the previous paragraphs the data collection methods were introduced. The next step, after collecting all of the data, is the data exploitation process – in which the gathered data is thoroughly assessed and analysed so that a comprehensive conclusion can be reached. This should lead to answers to the previously defined sub questions and, in the end, to the main research question. In the sub paragraphs below, for each data collection method used the data exploitation method is described.

3.5.1. Desk research and literature review

By means of the literature review and desk research it is established what research has been previously conducted that contributes to the theorization of the concept ‘safe cities’. As there were no academic studies found that include a conceptualization of ‘safe cities’, it was attempted to distil relevant information from literature that is related to the research subject. After the process of analysing academic literature, a desk research was carried out to find additional information. Two research studies, although not academic, were found and analysed by looking for answers to the sub research questions in terms of categories and indicators of ‘safe cities’.

3.5.2. Expert interviews

Before exploitation of the expert interviews, the interviews that were recorded were transcribed, and of the ones that could not be recorded, the notes were worked out. The interview reports were then submitted to the interviewees for approval. Subsequently, data gathered from the semi-structured expert interviews were analysed by use of the content analysis method, the systemization of text analysis. By means of analysing patterns in elements of the text, underlying meaning and ideas are revealed (Yang & Miller, 2008: 689). Texts – in this case, the interview reports - are empirically coded based on a coding system (Babbie, 1999: 286). The codes that are utilized are based on the main topics of the sub research question: ‘definitions’ and ‘indicators’. Because of the translation of the sub questions into interview questions beforehand, the data was already pre-sorted. Within the codes, there are also sub codes used. For ‘definitions’ the sub codes are: ‘literal definitions’ and ‘main subjects of urban safety’, in which the latter is in turn divided into ‘social safety’, ‘physical safety’, ‘digital safety’ and ‘societal safety’ – a distribution which is chosen on the basis of the literature review and findings in the first part of the analytical chapter. This is a common way of establishing codes in grounded theory – where codes can emerge from data and are not set beforehand. The code ‘indicators’ also includes sub codes: namely ‘used indicators’ and ‘suggested indicators’, both divided in ‘quantitative objective indicator’, ‘quantitative subjective indicator’, ‘qualitative indicator’ and ‘internal performance indicator’. Using the codes to structure the outputs of the interviews, it should be possible to associate the information collected with the sub questions. To structure the data that provide context information about the three cases, three additional codes are used: ‘governance’, ‘monitoring and research’, and ‘safety approach’.

3.5.3. Document analysis

The exploitation method for the document analysis is the same method used for the expert interviews: content analysis, using codification. The information deducted from the documents was structured by use of the codes described above. Subsequently, the information was analysed by linking and comparing it to the information from the expert interviews. The research results from both data collection methods enriched each other, forming together three in-depth case studies.

3.6. Validity

3.6.1. Internal validity

By using a multi-case study design and a triangulation of methods, the research in this thesis has provided for in-depth results. This contributes to the internal validity of the research. For every case, multiple interviews and documents were analysed to get a comprehensive understanding of the case. However, not all relevant organizations or actors could be interviewed – therefore the results may be biased or incomplete. Another limitation concerning the internal validity is that the results of the analysis depend on the reliability of just one researcher that has done the codification. As no human coder is completely free from bias, another coder probably would have constructed different codes (Holsti, 1969).

3.6.2. External validity

While three different cities are studied to broaden and deepen our knowledge of urban safety perceptions within West-European cities, the external validity of the study still is not too high. This is because context factors play an important role; every city's background and features are different – therefore each city also has different core functions to protect, and deals with different threats to the safety of the city. It is assumed that perceptions of urban safety are strongly influenced by these kinds of factors. However, since the cases are selected on the basis of a most similar design, it is believed that findings from the cases that correspond with each other will be generalizable to other similar cities at least to some extent.

Chapter 4: Analysis and results

4.1. Conceptualization of ‘safe cities’ (answer sub research question 1)

In this first part of the analytical chapter, a literature review that can enhance our understanding of the broader idea of urban safety, the concept I will call ‘safe cities’, will be provided. Cities and their importance were already explained in the theoretical chapter; now the part ‘safe’ will be explored, within an urban context. By reviewing different pieces of literature that touch upon the concept ‘safe cities’ it is tried to come to a first conceptualization. It starts with discussing the origin and development of the concepts ‘safety’ and ‘security’ – a distinction between both terms can be made, but they are also often used interchangeably. Next, the development of the concept ‘safety’ and the nature of unsafety are discussed in order to provide a comprehensive image of what safety entails in the contemporary context. Then, the parts ‘safe’ and ‘cities’ will be connected, as the nature of ‘safe cities’ will be described on the basis of several basic elements that are today central in the safety of cities. Next, two recent studies that are specifically concerned with safe cities are discussed. Also, two related concepts, ‘smart cities’ and ‘resilient cities’ are briefly explained as to prevent confusion, and possibly enhance our understanding of ‘safe cities’. Finally, based on all of the literature reviewed, a definition for the concept ‘safe cities’ is suggested, supported by four (possible) dimensions of a ‘safe city’.

4.1.1. The origin and development of the concepts ‘safety’ and ‘security’

4.1.1.1. Safety and/or security?

As previously mentioned, in academic literature, ‘safety’ and ‘security’ often are used interchangeably. However, some others do make distinctions between the two terms; according to Van Den Berg et al. (2006), the notion ‘security’ is broader than ‘safety’: safety concerns specifically physical protection, against robberies, violence and traffic accidents for example. Security also refers to more intangible threats, such as terrorist attacks, natural disaster and war (Van Den Berg et al., 2006). However, Devroe (2012: 56), referring to Van Zuijlen (2004) and Muller (2004), argues that in the English language ‘security’ means physical insecurity, and ‘safety’ means social unsafety. The former then includes casualties, incidents and disasters, whereas the latter includes criminality, social disorder/nuisance, public order problems and terrorism. As in this thesis a broad understanding of the concept ‘safe cities’ is searched for, all of above elements of safety and security will be taken into account in theorizing the concept ‘safe cities’. So, whereas the research topic reads ‘safe’

cities, it could have read ‘secure’ cities, as safety and security will be understood as synonyms in this thesis.

A further exploration of what constitutes ‘safe’ will be provided in the next subparagraphs. To have an actual understanding of ‘safety’, it is essential to first look at the development of the concept. It will also be explained how safety can’t be seen apart from its opposite meaning, therefore the nature of unsafety also forms part of this paragraph.

4.1.1.2. Development of the concept

There is no wide shared agreement on the concept of safety; in over sixty year of safety studies, no generally accepted definition of the concept has been produced (COT Institute for Safety, Security and Crisis Management, 2007: 15). In *The Concept of Security*, David A. Baldwin (1997) attempts to explicate the concept of (in his terms) ‘security’ broadly enough so that it can be used at any level. His purpose was to define security as a policy objective distinguishable from others. In his essay, Baldwin refers to Wolfers (1952), who argued that specifications were needed in order to make the concept of national security useful for sound political counsel or scientific usage. Whereas in this thesis the focus is on the local level instead of the national level, his recommendations still apply. Wolfers (1952, in Baldwin, 1997) argues that to make the concept of security useful, it should be considered that the values to be secured and the degree of security sought are variable. Also, the potential threats to security are multiple, the means by which security may be pursued are many, the costs of security are inescapable, and, lastly, the time period matters. Each of these dimensions can be specified in very broad or very narrow terms, but not all of the dimensions need to be specified all the time. In this thesis, the focus is on an understanding of safety within an urban context. However, the general security discourse will be briefly discussed first. This is in no way an attempt to grasp the full body of knowledge on security. It does give some context to the further understanding of ‘safe cities’ by providing some background information on safety studies.

Traditionally, the concept of safety is regarded exclusively in military and state-centred terms (Ibid). This is reflected in the traditional definition of ‘security’ that is given by Bellamy (1981: 102), in which security is “a relative freedom from war, coupled with a relatively high expectation that defeat will not be a consequence of any war that should occur”. Scholars have challenged this traditionalist approach since the late 1960s, when the first signs of a trend towards the expansion of the notion of security occurred. The trend continued and, particularly since the end of the Cold War period, two key debates concerning

the security concept got very intense; first, the ‘broadening’ of security, concerning the extension of security to other issues and sectors than the military one. Second is the ‘deepening’ of security, questioning whether other entities than the state should be able to claim security threats. This could mean a shift upward, to the level of international and global security, or downward, to the level of individual and human security (Ibid). In other words, safety is no longer only about protecting the (external) borders of a country, but also concerns issues that could occur within a country.

One of the most prominent attempts of widening the security agenda is provided by Barry Buzan and his colleagues (Buzan, 1991; Buzan et al., 1998). They distinguish five main dimensions within the different factors that affect the security of human collectivities: military, political, economic, societal and environmental security. In the military sector, the state is still the most important referent object, the ruling elites of states are the most important securitizing actors and offensive and defensive capabilities of states are central (Buzan et al., 1998: 49). Political security refers to the organizational stability of social order(s), systems of government and the ideology that give them legitimacy, and considers non-military threats to state sovereignty. Economic security refers to access to the resources, finance and markets that are necessary to sustain acceptable levels of welfare as well as state power. Societal security is about sustainability of traditional patterns of language, culture, religious and national identity and custom. The environmental sector, finally, concerns the maintenance of the local and planetary biosphere as the essential support system on which all human enterprises are dependent. These different dimensions are typical for the contemporary understanding of safety; in recent studies, scholars still argue for a broad security agenda, covering a variety of issues, from economic to social to ecological and demographic ones (Ibid).

4.1.1.3. Nature of ‘unsafety’

Safety is not only affected by objective risks and threats, but also by the citizens’ sense of security and the (transforming) security culture, changing back and forward between the demands of security and of freedom and privacy (Frevel, 2013: 365). Whereas the actual safety situation is improving in many cities when you look at the crime rates, simultaneously perceptions of safety seem to be worsening (Van Den Berg et al., 2006: 268). Many of the side effects of crime are felt acutely at the local level, where ‘urban unease’ refers to the concern for personal safety within the own neighbourhood (Barret, 1981: 612). Moreover, according to Vanderveen (2001), there is an increasing ‘riskism’, partly due to the great

number of (media) attention to security issues. People nowadays want to exclude risks, they do not accept to face any risks; if there is, they want to directly involve institutions such as the government. This contributes to a persistent degree of unsafety in cities.

4.1.2. The combination of the concepts ‘safe’ and ‘city’: ‘safe cities’

After conceptualizing ‘cities’ and briefly introducing safety on the local level in the theoretical chapter, and exploring the meaning of the ‘safety’ concept in this literature review, now a further review of what it means if both concepts are combined will follow. As the combined concept is new and to be developed in this thesis, there is not one theory that explains the meaning. Therefore, literature that touches upon issues of urban safety is explored and it is tried to find a red thread that leads to a better understanding of ‘safe cities’.

4.1.2.1. Nature of safe cities

It is hard to describe the nature of a concept so broad as ‘safe cities’; urban safety is usually described by pointing to the threats and risk that can undermine safety in the city. According to Van Den Berg et al. (2006), within an urban environment, there are many risks and threats, that all vary in nature and impact. Whereas national borders are still important, functioning as physical barriers as well as being part of the symbolism of the nation-state, primary fronts for security programs underwritten by current developments are more and more urban-centred (Boyle & Haggerty, 2009: 258). Those threats and risks can for example be violence, physical threats or street robbery, or drugs nuisance/social disorder, human traffic, or corruption, or unsafe traffic situations, environmental problems, and the danger of hosting high-risk mega-events (Van Den Berg et al., 2006; Boyle & Haggerty, 2009). Furthermore, as urban areas are becoming larger and more densely populated, armed conflicts are increasingly being fought in cities (Milliken, 2016: 2). Terrorism and radicalization of youngsters are increasingly urban-centred; the ones committing terrorist attacks are usually radicalized in their own local urban communities and the concentration of populations in cities make them attractive targets for attacks.

All of these factors that influence urban safety can be categorized along two extremes. On the one side are endogenous factors, which can be influenced by measures taken by local authorities. On the other side are exogenous factors, which cannot be influenced by measures taken by local authorities (Van den Berg et al., 2006: 8). The meaning of safety also varies according to different disciplines. It operates both at macro level, in relation to mass threats of warfare and political terrorism, as on micro level, relating to small-scale localized

disorders, antisocial behaviour and affronts to quality of life. Safety could be linked to the ‘quality of the urban living and residential working environment’. With a growing welfare, the demands for quality of life of urban residents and workers also grow, since a secure environment contributes to a better life quality (Crawford, 2002: 6). According to Maslow (1943), ‘security’ comes after psychological needs as food and water, as the most fundamental human need. Therefore, when safety is no longer guaranteed in the urban districts, people will leave the city. Urban policy-makers find it important to change such situations as, in the long term, urban unsafety could imply that certain groups – middle and high-income- leave certain urban areas, and those urban areas would end up in downward circles.

In short, there are many causes that lead to unsafety in cities. A definition of what constitutes a ‘safe city’ is hard to be found in literature. However, there are two ‘sides’ of safety that are commonly mentioned – also with reference to safety in cities. These are social safety, and physical safety – further explained in the paragraph below. Both dimensions of ‘safe cities’ however also have a negative approach; they describe what kind of unsafety there can be in cities. If a city would be free from physical and social threats and incidents – is a city then safe? Or are there also some basic conditions of a city to be safe? This thought is explored subsequently.

4.1.2.1.1. Social safety, physical safety – and more?

Social safety refers to the protection against intentional, human-made threats – to personal injuries caused by crimes, violence and social disorder/nuisance (Stol et al., 2011: 9). Social unsafety then refers to forms of unsafety of human origin, regardless of the intensity of the suffering or the intent of the one that caused the suffering (Bauwens et al., 2011: 21). Other scholars (Hope, 2005; Crawford, 2006; Brannan, John & Stoker, 2007; Edwards & Hughes, 2008; in Devroe, 2012: 56) broaden the concept of (social) safety and call it ‘community safety’. Community safety concerns more than crime and is aimed at getting to the heart of what disrupts people’s quality of life (Hope, 2005: 375). It is a policy goal that “sits at the intersection of attempts by the state to deliver welfare and security, and policing and control in local communities” (Edwards & Hughes, 2008: 67). Following this line of thought, social safety is not only about criminality but also about public social disorder/nuisance that can be seen as threatening to citizenship and order (Hope, 2005, in Devroe, 2012: 56).

Physical safety, on the other hand, has to do with chances of injury or death due to causes such as disasters with hazardous substances or other disaster scenarios, such as fire

and flood (Suddle, 2002: 1). It includes both aspects of internal and external safety. Physical unsafety thus refers to forms of unsafety that are usually not of human origin, to suffering that people experience due to natural disasters, accidents or epidemics (Bauwens et al., 2011: 21).

However, according to Milliken (2016: 1) urban safety does not only include the prevention of crime, violence and physical incidents, but also the enhancement of individual rights, including a person's physical, social and psychological integrity. Urban safety then starts from the observation that inadequate urban development and local governance, and social and territorial exclusion patterns, are encouraging factors for crime and violence. It adopts a citywide, participatory process to address the risk factors as well as the protection factors of insecurity in cities, and creates conditions for more sustainable, inclusive, cohesive and just cities (Ibid). According to Crawford (2002: 31), this is reflected in Europe witnessing a growth of converging public policies concerned with (in) security (Hebberecht and Sacks, 1997; Duprez and Hebberecht, 2002, in Crawford, 2002: 31) including an emphasis upon wider social problems than merely crime. These include broadly defined harms, people's fears, low-level quality of life issues, anti-social behaviour and disorder (Crawford, 2002: 31). Urban safety thus considers different vulnerabilities: chronic vulnerabilities for city dwellers arising from basic needs, contextual vulnerabilities that are created by social, economic and political processes, and vulnerabilities that are created by disasters – natural and man-made (Milliken, 2016). Following this line of thought, a safe city is a city that is protected from chronic vulnerabilities, contextual vulnerabilities and vulnerabilities generated by disasters.

4.1.3. Two recent studies by The Economist and The Hague Centre for Strategic Studies

Two studies aimed at assessing the safety of cities were published in 2015: the 'Safe Cities Index' by The Economist Intelligence Unit (EIU), and the 'Stedelijke Veiligheidsindex' (Urban Safety Index) by the Hague Centre for Strategic Studies (HCSS). Whereas these studies cannot be classified as typical academic literature, they can be seen as a scientific approach to the contemporary concept of 'safe cities'. Given the novelty of the research subject, these studies are the closest to scientific literature to be found concerning the concept. Moreover, the study of HCSS is also based on an extensive literature research. Both include indicator sets that are used to compare the level of safety of cities worldwide. Those indicators will be further assessed in part II of this chapter, in order to operationalize the

concept 'safe cities'. However in this part both studies will be introduced, as they can also contribute to the theorization of 'safe cities' by analysing how the concept is approached in both studies.

4.1.3.1. The Economist: Safe Cities Index

In 2015, The Economist Intelligence Unit (EIU) published a report 'The Safe Cities Index: Assessing urban security in the digital age' (The Economist Intelligence Unit, 2015), in which they assess the safety of 50 cities worldwide on the basis of more than 40 quantitative and qualitative indicators. These indicators are divided into four categories, namely digital security, health security, infrastructure safety and personal safety. Whereas the indicators will be further discussed in answering the second sub research question, the categories can be useful for the conceptualization of 'safe cities'. First of all, digital security refers to the question whether citizens are able to use the Internet and other digital technologies without fear of privacy violations or identity theft, and what is done to ensure this (Ibid). Secondly, health security concerns how cities maintain the physical environment and the care level for their citizens (Ibid). Third, infrastructure safety also considers the physical environment, but in this case the aspect of the safety of city's buildings and roads and its resilience against disasters (Ibid). Finally, personal safety considers the risk for individual citizens of theft and violence, as well as the citizens' perceptions of safety.

4.1.3.2. The Hague Centre for Strategic Studies: *Stedelijke Veiligheidsindex*

In 2015, Dutch think tank The Hague Centre for Strategic Studies (HCSS) published a research on urban safety in Amsterdam. It consists of a literature review regarding the nature of urban safety, followed by a definition of urban safety:

Urban safety is the degree to which the core values and interests of an urban community are resilient in the face of current and future threats, and the extent to which this is also perceived that way by the members of the urban community. Core values and interests consist of physical integrity, prosperity, effective and legitimate political institutions, social cohesion, cultural freedoms, a high quality infrastructure, and well-functioning ICT, data protection and privacy. (HCSS, 2015: 3).

The HCSS thus not only focuses on the absence of unsafety (negative approach) but also the presence of safety (positive approach). For all of the core values and interests in the definition, the HCSS has developed indicators, which will be discussed in the second part of this analysis. The definitions of the values and interests, however, could be useful for the theorization of ‘safe cities’. First, ‘physical integrity’ refers to the extent to which the physical integrity of the citizens are protected against criminality, social disorder/nuisance, terrorism, physical disorders, accidents and natural disasters, and is perceived as such. Second, ‘prosperity’ is defined as the degree to which the prosperity of the urban community is safeguarded and perceived as such. ‘Social cohesion’ means the degree to which people are part of an urban community, trust each other, minorities are integrated, and this all is perceived as such. Fourthly, ‘effective and legitimate political institutions’ refer to the extent to which effectiveness and legitimacy of local political institutions is guaranteed and citizens can participate in local political processes, and this is perceived as such. Next, ‘cultural freedoms’ considers the degree to which people in the city are free to express their identities, such as language, sexual orientation or belief, and perceive this as such. Sixth, ‘high quality infrastructure’ refers to the extent to which the use of urban infrastructure and natural environment is guaranteed and perceived that way. Finally, ‘functioning ICT, privacy and data protection’ considers the protection of urban ICT, the digital networks in the city and privacy and data.

4.1.4. Concepts related to ‘safe cities’

Whereas the concept of ‘safe cities’ concerns a new field of study, there are two other concepts that are related, that are in development as well and receive a lot of attention lately. For matters of clarity, the two concepts – ‘smart city’ and ‘resilient city’ – will be both briefly discussed below. Whereas they do show some similarities with the concept of a ‘safe city’, and they all could on some parts be merged, it is important to address that in essence they are not the same.

4.1.4.1. Smart city

Recently, there has been a rise of so-called ‘smart cities’, in which ICT is used to make urban areas more liveable, sustainable and vital (The Hague Security Delta, 2014), including the emergence of new technological safety solutions, such as enhanced surveillance systems. Smart cities embrace the development and use of the Internet of Things, which is “a recent

communication paradigm that envisions a near future, in which the objects of everyday life will be [...] able to communicate with one another and with the users, becoming an integral part of the Internet” (Zanella et al. 2014: 22). Whereas many cities support this development and want to be pioneers in this field (Scott, 2014), the increase of devices that are connected to the Internet has also led to criticisms that warn for the vulnerability to cyber-attacks (Smith, 2016). Therefore, while smartness of a city can certainly contribute to a safer city, it also brings new vulnerabilities that might just affect the safety of a city in a negative way. The HCSS and The Economist, regarding respectively digital safety/functioning ICT, privacy and data protection, also addressed these issues. Thus it can be concluded that making a city ‘smarter’ in some cases leads to an increase of the city’s safety, and sometimes to a decrease. ‘Smart’ can be part of ‘safe’, but safe refers to much more, as shown in this theoretical exploration, and ‘smart’ also has many other objectives aside from ‘safe’.

4.1.4.2. Resilient city

‘Urban resilience’, as another perspective on urban safety, starts from the perception of cities as complex, interdependent systems that are extremely vulnerable to threats coming from natural hazards and terrorism (Godschalk, 2003: 153). On the one hand, their architectural structures, population concentrations, places of assembly and interconnected infrastructure systems make them feasible and desirable. On the other hand those features put them at high risks to floods, earthquakes, hurricanes and terrorist attacks (Ibid). Points of urban vulnerability are everywhere; from infrastructure systems and buildings, to telecommunications, transport, energy and resource supply lines (Moor, 2001). To reduce these vulnerabilities, stronger structures are not enough; urban risk reduction mechanisms include the police and fire department, planning and building inspection departments, health services, families, schools and the media (Godschalk, 2003: 137). Some scholars call for the development of ‘resilient communities’, as they view disaster resilience as a primary goal of emergency management (Ibid).

The concept of a ‘resilient city’ shows close resemblance to what could be understood as a ‘safe city’, since it deals with issues of urban safety as well. However, it is a different perspective, which is very broad in itself and therefore it is not possible to fully incorporate all the different aspects of resilience within the concept of ‘safe cities’. Yet, its approach to threats of manmade and natural disasters – including how people do also play a role in a city’s dealing with a disaster – is valuable for understanding the idea of a safe city. To

conclude, resilience can be seen as part of a safe city, as a matter that is of growing importance for cities, and thus should be taken into account when assessing safety of cities. However, in the theorization of ‘safe cities’, many other perspectives/interests that belong to the safety of a city should also be addressed. As a research subject, a ‘resilient city’ would cover a whole study on its own, therefore the matter of resilience is in this thesis only regarded as serving the concept of ‘safe cities’.

4.1.5. Conclusion: towards a definition and dimensions of ‘safe cities’

Based on the literature reviewed in the previous paragraphs, some conclusions can be drawn with respect to how the concept ‘safe cities’ can be theorized. First of all, the distinction between safety and security was discussed – whereas they can be understood in different ways, they also are used often as interchangeably. Later on it was shown how cities both deal with physical and social safety issues, and how cities are to be protected from chronic vulnerabilities, contextual vulnerabilities and vulnerabilities generated by disaster. Based on these notions, a first step in theorizing ‘safe cities’ is to include both ‘safety’ and ‘security’, and have a broad approach so that all ‘unsafeties’ can be adapted to.

Moreover, in line with the rather broad approach, it was shown how in the years the understanding of the concept ‘security’ has deepened and broadened - away from the traditionalist perception focused on states that have to protect their borders from military threats. Safety in cities in itself already means taking distance from the traditionalist view: both concerning the referent object(s) as well as the threats they encounter. The question then remains, how safety in an urban context can be understood. Different dimensions or types of (urban) safety can be used for the conceptualization. Buzan et al. (1998) speak of military, political, economic, societal and environmental security – thus including many different forms of safety, however some of the main issues in cities, crime, such as theft or interpersonal violence, and social disorder/nuisance, are not represented in those dimensions. Another common distinction is between ‘social’ and ‘physical’ safety: the former referring to personal injuries caused by crimes, violence and social disorder/nuisance, and the latter to suffering that people experience due to natural disasters, accidents or epidemics. However, the literature review also showed that it seems that these two are no longer enough; following the line of ‘community safety’ trend, urban safety can also be expanded to issues that concern safeguarding the ‘quality of life’ and more societal factors in citizens’ urban life. Another important aspect that has been discussed is the importance of the citizens’ feelings of safety:

urban safety is not only affected by objective risks and threats, but also by safety perceptions of the people in the city, which not always correspond to those objective risks and threats.

The recent studies of *The Economist* and the HCSS follow the same lines of thought, considering a broad range of threats to urban safety, or values and interests that need to be secured. In addition, they both mention digital safety as an important (new) aspect of urban safety, which seems correct in light of the digitalization of society. However a 'safe city' should not be confused with a 'smart city', smartness could enhance the safety of a city, but could also jeopardize it. A 'resilient city' can approach the meaning of the concept of a 'safe city', but that is dependent on how one defines a resilient city. However, resilience could also be seen as one of the features of a 'safe city', such as to be resilient in case of a natural or human made disaster.

Based on all of the theoretic considerations mentioned above, a conceptualization of 'safe cities' could be made by suggesting the following working definition:

A 'safe city' is a resilient, cyber secure, socially cohesive and culturally inclusive city, in which citizens have a high quality of life, are protected against crime and violence, and feel safe.

This definition includes both the aspects of crime and violence that seems to be a persistent security issue in cities, as well as the socioeconomic conditions for a safe city and the increasingly important matter of resilience. It corresponds with different trends in urban safety studies and accounts for the traditional as well as the newly emerging threats. While it is important to note that the image of the city that is sketched is utopian, an ideal type - a city knows unsafety by definition -, the conditions mentioned could be seen as objectives for a city wanting to become safer.

In line with this definition, four main dimensions of safe cities can be distinguished. The dimensions are based on both explicit and implicit beliefs that can be deducted from the discussed theory, as well as the currently used urban safety domains, and the values and core interests of safe cities discussed in this chapter. Important to note is that this is a choice - other classifications could be suitable as well, however the following seems correct in light of the literature review and desktop analysis. The categories are provisional; they are used to

classify the information gathered in the case studies – yet they could still be adjusted in the final analysis.

Social safety

The first dimension distinguished is ‘social safety’ and refers to the degree to which individual citizens are protected against crime and violence and how they perceive their own safety within the city. Objective social safety is guaranteed when citizens are free from violence and terrorism, organized and petty crime, such as theft. It also includes citizens living in the absence of situations that, although not illegal, are perceived as unsafe, such as social disorder/nuisance on the streets. Subjective social safety in this respect refers to the degree to which the inhabitants feel safe.

Physical safety

The second dimension is ‘physical safety’ and concerns the physical environment of the city, including the city’s buildings, roads and public transit networks, and its resilience against disaster. The functionality of these infrastructures can be both intentionally threatened (human-made disasters), for example by terrorist attacks, as well as by non-intentional threats and dangers (natural disasters), such as industrial accidents, ecological crises or incremental climatological developments, such as rising sea levels (The Hague Centre for Strategic Studies, 2015: 26). A ‘physically safe city’ thus has a high degree of resilience and self-healing against these kinds of threats and dangers, due to good protection of critical infrastructures – to a large extent dependent on urban planning.

Digital safety

The third dimension is ‘digital safety’, referring to the degree to which citizens and businesses have access to qualitative and reliable ICT systems and networks that are protected from attacks, and are aware of cyber risks. Within the literature discussed in the previous chapter, digital safety does not particularly stand out as a main issue. By contrast, in the recent safe city researches of The Economist and HCSS it has a rather prominent position. Because of extensive digitalization and the emergence of the Internet, cities have become more and more dependent on information and communication technology (ICT). Nowadays,

everyone and every business is connected to the Internet, and as people and businesses are largely concentrated in cities, it has created a new and severe urban vulnerability; ICT is now seen as a critical infrastructure, an asset that is essential for the functioning of the society (The Hague Security Delta, 2014). Moreover, cyber-crime is on the rise and with an eye on the future, the risk of cyber-attacks is certainly a challenge to be reckoned with.

Societal safety

The fourth and final dimension is called ‘societal safety’ and concerns the degree to which citizens are guaranteed of a high quality of life, including prosperity and well-being, as well as community aspects of social cohesion, cultural inclusiveness and (political) trust. This broad dimension stems from the holistic and community safety perspective that goes beyond a traditional understanding of safety in terms of crime and violence. It refers to the degree to which citizens are part of an urban community, have trust in each other and the local political institutions. It also has to do with the integration of migrants and the extent to which citizens can freely express their identities. Further, it concerns how cities maintain the care level for their citizens, as well as the level of prosperity in the city. In sum, it unites the health security dimension of The Economist, with the prosperity, social cohesion, effective and legitimate political institutions, cultural freedoms and parts of the physical integrity values and interests of the HCSS.

4.2. Operationalization of ‘safe cities’ in indicators

To enhance our understanding of what constitutes a safe city, one possible way is to analyse how the concept ‘safe cities’ could be operationalized in indicators. The analysis starts with the indicators found by desk research, in which two international comparative studies are central: the previously introduced *Safe Cities Index* from the Economist, and the *Stedelijke Veiligheidsindex* (Urban safety index) from the Hague Centre for Strategic Studies. Based on these two studies, a first attempt is made for a new indicator set that combines both indices. The second part of the analysis consists of three case studies: how do the West-European cities Rotterdam, Antwerp and Frankfurt am Main measure safety in their city? It is analysed what indicators are already in use, but it is also assessed what the perception on ‘safe cities’ is of the experts that are interviewed. In addition, it is discussed what topics are believed to be part of urban safety in the cases, and whether those topics could be measured by what indicators for a safe city. Finally, the indicators that are used and/or suggested by the cities are compared to the indicators that are deducted from the desk research – a combination then should lead to a possible operationalization of ‘safe cities’ in indicators.

4.2.1. Based on literature review and desk research

In the following sub paragraphs it is examined which indicators for safe cities are currently used by looking at recent international studies that compare cities on criteria concerning safety. Two relevant studies that include indicator sets were found and will be first addressed apart. Thereafter, they are combined into one set of indicators for ‘safe cities’ that corresponds to the four dimensions of ‘safe cities’ established in this thesis: social, physical, digital and societal safety.

4.2.1.1. Economist’ Safe Cities Index

In 2015, the Intelligence Unit of The Economist (EIU) compared the safety of 50 cities worldwide on the basis of more than 40 quantitative and qualitative indicators (The Economist Intelligence Unit, 2015). The cities were selected based on factors such as regional presentation and the availability of data (Ibid). Part of the data was derived from The Economist Intelligence Unit itself, which has produced similar indexes that measure cities in terms of competitiveness, liveability and other issues. Publicly available information coming from official sources was used where applicable. According to The Economist, these primary sources were various, and they mention that they for example include the World Health

Organisation and Kaspersky Lab, a provider of endpoint security solutions - thus, not only governmental sources are used (Ibid; Website Kaspersky Lab, 2017). The established indicators are divided in the four categories; namely digital security, health security, infrastructure safety and personal safety. Within each category, there are input indicators such as policy measures and levels of spending, and output indicators, such as the frequency of accidents. The 50 cities were compared based on the Index results, as well as on information gathered from the wide-ranging research the EIU conducted, including in-depth interviews with experts. In table 4 below, the categories and the indicators of Safe Cities Index are presented.

Domain	Input indicators	Output indicators
Digital security	Privacy policy	Frequency of identity theft
	Citizen awareness of digital threats	Percentage of infected computers
	Public-private partnerships	Percentage with Internet access.
	Level of technology employed and dedicated cyber security teams	
Health security	Environmental policies	Air quality
	Access to healthcare	Water quality
	Number of beds per 1000 persons	Life expectancy
	Number of doctors per 1000 persons	Infant mortality
	Quality of health services	Cancer mortality rate
Infrastructure safety	Enforcement of transport of safety	Deaths from natural disasters
	Pedestrian friendliness	Frequency of vehicular accidents
	Quality of road infrastructure	Frequency of pedestrian deaths
	Quality of electricity infrastructure	Percentage living in slums
	Disaster management/business continuity plan	
Personal safety	Level of police engagement	Prevalence of petty crime
	Community-based patrolling	Prevalence of violent crime
	Available street-level crime data	Criminal gang activity
	Use of data-driven techniques for crime	Level of corruption
	Private security measures	Rate of drug use
	Gun regulation and enforcement	Frequency of terrorist attacks
	Political stability risk	Gender safety
	Perceptions of safety	

Table 4: The Safe Cities Index (The Economist Intelligence Unit, 2015)

4.2.1. 2. The Hague Centre for Strategic Studies: ‘Stedelijke Veiligheidsindex’

In 2015, The HCSS published their research on urban safety in Amsterdam. After establishing a definition of urban safety that regards different core values and interests of a city, they operationalized these values and interests on the basis of indicators. Their *Stedelijke Veiligheidsindex* thereby offers an integral image of the operations and performances of various cities on the seven core values of urban safety (The Hague Centre for Strategic

Studies, 2015: 33). The data that they use to measure the indicators are derived from many different sources, among which The Economist' Safe Cities Index. The HCSS indicators for urban safety are presented in table 5 below.

Value/Interest	Description	Indicators
Physical integrity	The degree to which the physical integrity of the citizens is protected from physical disorders, criminality, social disorder/nuisance, terrorism, accidents and natural disasters – both objectively and subjectively experienced.	Criminality Terrorism Natural disasters and accidents Public Health
Prosperity	The degree to which the economic prosperity of the urban community is guaranteed and is perceived as such.	GDP per capita Purchasing power Economic inclusion International economic attractiveness
Social cohesion	The social cohesion of a city refers to the degree to which people are part of an urban community, the extent to which they trust each other, if minorities are integrated, and this is perceived as such.	Attachment to the local community Societal trust Integration of minorities Loss of sense of community because of city expansion
Administrative effectiveness and legitimacy	The degree to which effectiveness and legitimacy of local political institutions is guarded, and the extent to which people can freely participate in local political processes that they perceive as essentially legitimate and meaningful.	Administrative efficiency Administrative legitimacy Political participation
Cultural freedom	The degree to which people in a city are free and feel free to express themselves in their identity, for example in terms of language, sexual orientation or confession of faith.	Perception of people with different identities Perception of presence of foreigners Freedom of speech Freedom of association Freedom of mobility
High quality infrastructure	The presence of good and safe transportation facilities, such as roads and public transit; of a well-functioning and resilient electricity network, and the availability of disaster and emergency plans of high quality.	Quality infrastructure Space for recreation and nature Uncontrolled growth
Functional ICT, data protection and privacy	The degree to which the critical ICT systems, digital networks and the personal data stored on it are protected against attack, theft or abuse.	Protection of ICT Quality of ICT

Table 5: HCSS Stedelijke Veiligheidsindex (The Hague Centre for Strategic Studies, 2015)

4.3. Conclusion: The dimensions and their indicators

The HCSS and The Economist’ studies both assess many different aspects of urban safety by means of many different indicators. Whereas their approach to the concept is not exactly the same as they identify different dimensions of a safe city, the elements of a safe city they consider are quite similar - only categorized differently. Therefore the four dimensions that were previously suggested in this thesis – social, physical, digital and societal – are used as a framework to insert the indicators of The Economist and HCSS. In the first dimension ‘social safety’, the EIU ‘personal safety’ category can be supplemented with some part of the HCSS ‘physical integrity’. With regards to the second dimension, ‘physical safety’, both studies also show resemblance in considering the aspect of infrastructure. These indicators, together with two of the health indicators of The Economist that deal with the physical environment of a city (air and water quality) are found under the physical safety dimension. Also, ‘frequency of terrorist attacks’ is included – terrorism was found a difficult issue to categorize, as it can occur on/be a threat to/ have impact on all the different dimensions of a city. The physical dimension is chosen because of the more physical preventive measures that can be taken, and the impact it directly has on physical elements – also when, for instance, the terrorist attack was executed in a way that could be seen as belonging to ‘digital safety’. The softer side of terrorist prevention, regarding radicalization, should be addressed distinctly – within the societal safety dimension. Then, the third dimension, ‘digital safety’, unifies the distinct categories both studies have for issues of digital safety/functional ICT, data protection and privacy. Finally, the fourth dimension, ‘societal safety’, is a somewhat more diverse collection made up of indicators from various categories of the HCSS/EIU studies. It is noticed that many of the HCSS key values and interests - namely prosperity, administrative effectiveness and legitimacy, social cohesion and cultural freedom - are not represented within one of the four safety categories of The Economist. However, they do closely align with the more social matters discussed in the literature review that are part of urban safety. Together with some of the health indicators – also important for the ‘quality of life’ standard for citizens – these are unified within the societal safety dimension. In table 6, all dimensions and their indicators are shown. It is chosen for now to follow The Economist’ distinction between input and output indicators – although the HCSS does not make such a distinction. In the overall conclusion of the analytical part that concerns the operationalization of ‘safe cities’ in indicators, it will be shown whether the input/output distinction still holds.

Dimension	Input indicator	Output indicator
SOCIAL	Use of data-driven techniques for crime	Perceptions of safety

	Available street-level crime data	Criminality
	Level of police engagement	Prevalence of petty crime
	Private security measures	Prevalence of violent crime
	Gun regulation and enforcement	Criminal gang activity
	Community-based patrolling	Gender safety
PHYSICAL	Quality infrastructure	Death because of disaster (natural/human-made)
	Disaster management/business continuity plan	Frequency of vehicular accidents
	Enforcement of transport of safety	Frequency of terrorist attacks
	Pedestrian friendliness	Natural disasters and accidents
	Quality of road infrastructure	Space for recreation and nature
	Quality of electricity infrastructure	Uncontrolled growth
		Air quality
		Water quality
		Percentage living in slums
		Frequency of pedestrian deaths
DIGITAL	Protection of ICT	Percentage of infected computers
	Citizen awareness of digital threats	Frequency of identity theft
	Privacy policy	Percentage of infected computers
	Public-private partnerships	Quality of ICT
	Level of technology employed and dedicated cyber security teams	Percentage with internet access
SOCIETAL	Environmental policies	Life expectancy
	Political stability risk	Unemployment (general/migrant)
	Access to healthcare	GDP per capita
	Number of beds per 1000 persons	Purchasing power
	Number of doctors per 1000 persons	International economic attractiveness
	Access to safe and quality food	Economic inclusion
	Quality of health services	Attachment to the local community
		Integration of minorities
		Loss of sense of community because of expansion
		Administrative legitimacy
		Perception of people with different identities
		Perception of presence of foreigners
		Freedom of speech
		Freedom of association
		Freedom of mobility
		Societal trust
		Discrimination
		Political participation
		Level of corruption
		Cancer mortality rate
Rate of drug use		
Infant mortality rate		

Table 6: Operationalization of the ‘safe cities’ concept based on the HCSS and Economist studies

4.2.2. Based on case studies in 3 cities

In this part of the analysis, it is examined what indicators for safe cities are currently used in three different cases: the West-European cities Rotterdam, Antwerp and Frankfurt am Main. Each case study begins with a brief overview of contextual factors, including an explanation of the governance of safety structure in the respective city. Subsequently, the results from the expert interviews and the document analysis are presented – which are assessed by looking at what definition the cities use for ‘safe cities’, what topics they indicate that belong to urban safety, and how they measure the safety situation of their city by use of indicators. Every case study ends with a sub conclusion in which all of the found topics and indicators are combined in one table, structured by the layout of the four dimensions that were established in the first part of this chapter.

4.2.2.1. Rotterdam

4.2.2.1.1. Contextual factors

An analysis of the understanding of the concept ‘safe cities’ in Rotterdam begins with an understanding of the case itself. Therefore, this chapter begins with briefly addressing the context of the city. First, some (demographic) characteristics of the city, as well as its political situation, are described. Thereafter, the governance of safety structure in Rotterdam is explained. Finally, a brief notion of developments in the safety approach is provided, which will be further elaborated on in the paragraphs that follow.

4.2.2.1.1.1. The city Rotterdam

Located in the southwestern part of the Netherlands, Rotterdam is the second largest city in the Netherlands, housing 629 606 inhabitants (‘Rotterdamers’) in 2016 (Centraal Bureau voor de Statistiek, 2017). The history of Rotterdam is marked by the World War II bombings that destroyed its city centre, as well as by the presence of the harbour that is so important for local economy and employment (Prins & Devroe, 2017: 284). Today, Rotterdam is the home of flourishing businesses and financial services, and it is a hotspot for tourists – characterized by modern architecture, iconic bridges and skyscrapers. Almost half of the population has a non-Dutch ethnic background and looking at the overall division of income among the citizens, the city is poorer than the national standard.

For many years, the Dutch labour party Partij van de Arbeid always had a stable majority in Rotterdam (Ibid: 284). However, since 2002 they are competing with Leefbaar

Rotterdam, a party that has embraced the public dissatisfaction with tensions caused by substantive migration, a decreasing quality of life in many of Rotterdam's neighbourhood, and crime. Leefbaar Rotterdam named crime and public safety one of the five key topics in their 2002 coalition agreement, and since then crime and public safety became key topics in local politics and policies.

4.2.2.1.1.2. Governance of safety structure in Rotterdam

According to Prins & Devroe (2017: 285), crime and public safety becoming a top priority in the 2002 coalition agreement has led to a systematic approach in which the mayor, police and public prosecutor aligned with many professionals and citizens, all contributing to a safer city (Ibid: 285). This suits the image of a shift from government to governance of safety as described in the theoretical chapter. In this sub paragraph, some of the key players in the field of safety management are described. The focus is on organizations from which officials were interviewed. It should be noted that there are many other actors that could be appointed that also play a role. However, the 'safe city' ecosystem of Rotterdam is too big to fully grasp in this thesis.

The 'local triangle': role of the mayor, the police and the public prosecutor

Since the first Local Government Act in 1851, local governments have the formal responsibility for public safety within the boundaries of municipalities (Prins & Devroe, 2017: 273). Whereas general crime policies are developed at the national level, policies for community and citizen-based policing are determined at the local and regional levels (Tops, in Prins & Devroe, 2017: 273). Local governments in the Netherlands consist of three independent bodies, namely the mayor, who has legal responsibility for public order and safety in the municipality, the City Council and the Board of Mayor and Aldermen (Prins & Devroe, 2017: 273-274). Dutch mayors are entitled to give orders to the police and over the past 20 years, they have been granted several powers to address certain threats to urban safety (Prins, in Prins & Devroe: 2017: 274). Usually, safeguarding local order is the mayor's individual responsibility – however, since 2014, in Rotterdam the responsibility for taking care of urban safety is now shared with one of the aldermen, which has the portfolios security, enforcement and public space (Ibid: 288). Prins and Devroe (2017: 288) describe this as an exceptional move, because the City Council and the public with regards to urban policing still individually hold the mayor accountable.

Until recently, the Dutch police system was characterised by two sorts of dualism; there was a distinction between administrative policing and law enforcement on the one hand, and on the other hand there was a distinction between authority – the ability to order police personnel to deploy certain tasks in specific areas - and control – taking care of the overarching organizational and financial aspects of the police organisation (Cachet et al., 2009; Fijnaut, 2012; Naeyé, 2014, in Prins & Devroe, 2017: 274). Control was predominantly in hands of the national government, and on the local level the police had two managers. The mayor and public prosecutor could instruct the police on operational matters and partly influence some control aspects (Prins & Devroe, 2017: 274). In a triangle concertation between the mayor, the public prosecutor and the police ('the local triangle'), most of the safety matters are negotiated and harmonised as much as possible.

In 2012, the national police system was introduced - a shift towards centralisation, which has granted constitutional-legal authority to control all aspects of policing work to the national Minister of Security and Justice. It also has a consequence for the policy agendas for policing in Dutch cities, such as Rotterdam (Ibid: 275). The policy agenda now is the outcome of negotiations between stakeholders with potentially rival mandates; the mayors and other administrative bodies, the national minister of Security and Justice, the national police chief and the regional public prosecutors (Ibid).

Directie Veiligheid

Within the city administration, there is a special section that is responsible for safety matters in Rotterdam, the *Directie Veiligheid* (DV). It has a director, and below an adjunct director, regional safety activities, and 'city mariners', which are located in neighbourhoods that score relatively low on safety, working directly on safety issues. The DV further consists of three departments: Neighbourhood Safety, City Affairs, and Strategy and Staff – altogether the department employs around 250 people (Interview DV, Appendix 1a).

The municipality has a directing role with regard to safety, but stresses how in Rotterdam it is common to work together on safety issues. There is a strong connection within the administration with the 'care' department, and beyond with the police. The interviewed officials of the municipality stress that their strength is their strong network with key persons in the city, which give them information and vice versa. Working together does prove to be tough sometimes, both with internal and external partners – one cause are the limited possibilities when it comes to information sharing (Interview DV, Appendix 1a).

Veiligheidsregio Rotterdam-Rijnmond

In Dutch municipalities, the mayor is ultimately responsible for disaster control and crisis management (Bron & Zannoni, 2010: 99). However, organisation and coordination of disaster control takes place on the level of the ‘*Veiligheidsregio*’, a regional organization of which there are 25 in the Netherlands. *Veiligheidsregio*’s are governmental organizations in which the fire brigade, police and medical services work together (Ibid: 101). When municipal services and other services act in cooperation with emergency services in case of a disaster or crisis, this is regulated in the *Veiligheidsregio*. The mayor of the municipality in which the disaster or crisis takes place however has the directing role and is the chief commander of all operational services during the disaster. In Rotterdam, it is the *Veiligheidsregio Rotterdam-Rijnmond* (VRR) that performs tasks in the field of disaster control, crisis management, risk management, fire services, ambulance care and medical care on behalf of the fifteen municipalities in the region (Website Veiligheidsregio Rotterdam-Rijnmond).

Veiligheidshuis Rotterdam-Rijnmond

The *Veiligheidshuis Rotterdam-Rijnmond* (VHRR) is collaboration between partners in the administrative, punishment, civil and care chain (Website Veiligheidshuizen). In the VHRR, complex issues of a number of target groups are dealt with on a theme basis. The VHRR has a special person-oriented approach, which is also system-oriented: the families and environment of persons are taken into account when the VHRR intervenes (Interview VHRR, Appendix 1E). The main objective is to reduce and prohibit recidivism, which is pursued in essence by combining the punishment and care domain.

4.2.2.1.2. Definition of a ‘safe city’ in Rotterdam

What content can be given to the concept of ‘safe cities’ in Rotterdam? In this paragraph it is analysed whether the involved organizations use a definition for a ‘safe city’, and it is shown whether the interviewed experts could formulate a definition based on their experiences and expertise. To understand what a ‘safe city’ consists of in this case, it is further analysed what are the main topics of urban safety in Rotterdam.

4.2.2.1.2.1. Definitions used and proposed

The VHRR does not speak of contributing to a ‘safe city’, but rather to a safe, and ‘liveable’ society (Interview VHRR, Appendix 1E). In the work of the VHRR this includes contributing

to the personal safety of citizens in general, who may be victims of crimes, as well as contributing to the circumstances of and offer a perspective to the offender - in order to prevent recidivism. The VRR neither uses a definition for a 'safe city', since they are not focused on cities, but on regions - and in that context their objective is to bring back the original situation as soon as possible in case of an incident (Interview VRR, Appendix 1C). A colleague of the VRR interviewee from crisis management found that speaking of a 'safe city' suggests that safety can be guaranteed and/or is measurable, whereas according to him, safety is a feeling (Interview VRR, Appendix 1C2). He himself would define a safe city as a city where people feel at home. The interviewee of the *Veiligheidsregio* himself found it hard to define a 'safe city' and argued that the meaning is dependent on whom you ask. He thinks about how to get a transport of hazardous materials safely through the city, whereas his colleague of 'Safe Living' would define it as: "safe living, safe going out and safe in traffic; in other words, safe life on all aspects, in the broadest sense of the word" (Interview VRR, Appendix 1C2). The VRR interviewee further argued that it is important to distinguish how you can, or will make your city safer: on big themes such as terrorism, or do you focus on scenarios with a much greater chance of occurrence? The *Veiligheidsregio* does not define in what case it is safe enough to accept it. For every department of the VRR, the focus is on different risks – which is also dependent on the chance those risks occur. The interviewees from the Regional Police Unit Rotterdam also stated that it is almost impossible to give a definition for a 'safe city'. First, because of subjectivity, but also because it is never safe enough – "every house burglary that is committed is one to many, and something should be done about it" (Interview RPER, Appendix 1D).

4.2.2.1.2.2. Most important themes

It turned out to be difficult to find a definition for 'safe cities' in the policy documents and in the interviews with the experts. However, it was evident that there are many different topics related to safety in the city. These can be deducted from the policy documents, review reports, different publications and existing research, supplemented with the views and experiences of the experts interviewed. In this sub paragraph it is shown what are the main topics in the field of urban safety according to the 2014-2018 coalition agreement, according to the organizations responsible for securing Rotterdam, and how the experts add to that.

The 2014-2018 coalition agreement

In the coalition agreement, the second ambition for 2018 is "Rotterdam: a safe, lively and cosy city" (Leefbaar Rotterdam, D66 & CDA, 2014: 3). This means a city in which there is always something to do, in which both young and old people can live well and where everyone understands each other and everybody treats each other with respect. It is stated that in Rotterdam, antisocial behaviour gets attention, that the same rights and obligations apply to everyone and that a shared norm is the foundation for individual freedom. Finally, it is argued that neighbourhood residents take initiative in their streets against degradation (Ibid).

The second chapter of the agreement is called 'Rotterdam safer' and begins with the statement that a "lively and attractive city is in the first place a safe city" (Ibid: 8). Safety topics that are addressed are: 'problem neighbourhoods' dealing with 'street robbery and house burglary' as well as 'aggression and threats', 'safety perceptions', 'social disorder/nuisance (from traffic, drugs and youth)', and 'clean and liveable neighbourhoods' (Ibid).

From the perspective of the City of Rotterdam

In the extensive municipal safety policy program for the years 2014-2018, called #Veilig010, priorities are set by the City of Rotterdam (2013). First of all, the so-called 'basic safety' should be in order: this includes theft, violence, burglary, vandalism, social disorder/nuisance and the safety experience of citizens (Gemeente Rotterdam, 2013: 10). The second priority are high impact crimes (HIC); three types of criminality with a relatively big impact on the victims, namely house burglaries, muggings and robberies (Ibid: 15). These types of criminality actually are also already part of the previously mentioned basic safety; however they get an intensified approach in Rotterdam. The third mentioned main theme is 'safety in the neighbourhood'; referring to the City's ambition that all neighbourhoods in Rotterdam are safe and that Rotterdammers feel safer (Ibid: 19). This could actually also be seen as an intensification the first priority, 'basic safety', as it entails additional investment in the neighbourhoods that do not have their basic safety in order. An essential part of this approach is the attention given to the citizen by increasing the dialogue between the City and the citizens. The fourth priority is called a 'vibrant city', which entails the perception of Rotterdam being an attractive city to work and live, with a flourishing night live and a diversity of events. This is only tenable when these events and the food and drink services industry are safe, which the City wants to guarantee by applying rules to mitigate risks and social disorder/nuisances. Fifth is 'subversive crime', criminal activities that can be subversive to society, such as; drug trafficking, money laundering, exploitation and

cybercrime (Ibid: 27). In this process the 'underworld' can interfere with the 'upper world'. The City cooperates with the public prosecutor, police and other partners to combat subversive crime, as it is a complex form of criminality, usually consisting of different criminal activities and concentrated in an area where criminals have an (economic) power position. The sixth priority is focused on 'risk groups': groups that are particularly vulnerable because of multiple causes, and therefore more likely to fall to crime (Ibid: 30), and groups who do not abide by rules. In the policy-program, five types of risk (groups) are emphasized. First are drug criminals, as there are "families and young people who are involved in drug trafficking and feel untouchable" (Gemeente Rotterdam, 2013: 30). Second, the risk of radicalization is mentioned; the City has a Reporting and Advice point Radicalization, and in severe cases the police is involved as well as an expert group Radicalization. Another risk indicated stems from the many cultural differences in Rotterdam; it is stated that having a different cultural background can make it harder to participate well in society. Therefore these groups are sometimes difficult to reach, and they get special attention. The fourth risk-group indicated consists of EU labour migrants; methods aimed at networks are also used for the expected influx of labour migrants from central and eastern European countries. Finally, the Plan of Action Social Counselling is mentioned; aimed at getting homeless people out of the streets and help them. The seventh main theme is 'youth': the approach of youth nuisance/social disorder and criminality. Then, mentioned eighth is 'fire- and industrial safety', stating that the municipality has made agreements on physical safety together with environmental service and the *Veiligheidsregio Rotterdam-Rijnmond* (Gemeente Rotterdam, 2013: 41). Finally, 'traffic safety' is addressed as a theme that will ask for attention in the following years (Gemeente Rotterdam, 2013: 45). It is stated that antisocial and reckless traffic behaviour causes social disorder/nuisance and brings risk to others. Traffic incidents that involve victims have a major impact on the ones directly involved, which is of big influence on the safety feelings of Rotterdammers.

The interviews showed that the themes mentioned above are all very important for the DV. The head of the Neighbourhood Safety department explains that all are themes they as a city had an ambition for; "you pick a few spearheads, those you also want to show to the council" (Interview DV, Appendix 1A). When a new program is going to be developed, you have to take stock; what should be added? This is done in the mid-term review of the *#Veilig010* safety policy program, in which the City reflects on the first two years of the policy. In the mid-term review, new themes are introduced. First is 'living social disorder/nuisance'; people

experiencing social disorder/nuisance from their neighbours is called unacceptable (Gemeente Rotterdam, 2016a: 30). Second mentioned is ‘safety in public transport’, aimed at increasing subjective and objective safety in public transport in Rotterdam – mainly by positioning supervisors in the subway (Ibid: 33). The third main theme that was added is ‘cyber resilience’, which they explain as being resilient regarding cyber threats and cyber risks as well as proactively exploit opportunities that ICT has to offer (Ibid: 34). This is an emerging theme, as it is stated that in 2015 the number of cyber incidents tripled compared to the previous year. The fourth theme is called ‘us-society’ and refers to the increasing societal tensions in the city, caused by both external events – such as terrorist attacks in other cities and the increased influx of refugees - and internal factors – such as segregation, the emergence of parallel societies, economic division and its consequences, and forms of discrimination and racism (Ibid: 36). The fifth topic is ‘attention for victims’, referring to good aid to victims of (violent) crimes (Ibid: 38). Finally, the last theme is the ‘Veiligheidshuis Rotterdam-Rijnmond’. A successful approach to criminality, severe social disorder/nuisance and families with complex problems, asks for more than just care or punishment (Ibid: 39). Different organisations responsible for care and punishment have to work together under one roof on a person- and system-oriented approach.

In sum, according to the City of Rotterdam, the main themes for safety within Rotterdam are ‘basic safety’, ‘high impact crimes’, ‘safety in the neighbourhood’, ‘vibrant city’, ‘undermining’, ‘risk groups’, ‘youth’, ‘fire and industrial safety’, ‘traffic safety’, ‘living social disorder/nuisance’, ‘safety in public transit’, ‘cyber resilience’, ‘us-society’, ‘attention for victims’ and ‘Veiligheidshuis Rotterdam-Rijnmond’. Some of these themes overlap, and not all are of the same nature; some are types of threats or vulnerabilities, whereas others are ambitions and intensifications in certain approaches, and others are centred on a certain approach. It should also be noted that it is a choice of a city, partly dependent on the political balance, which topics are given the label ‘safety’. The definition of a ‘safe city’ then, is also determined by local politics (Appendix 1A).

From the perspective of the Veiligheidshuis Rotterdam-Rijnmond (VHRR)

Interviewing officials of the *Veiligheidshuis Rotterdam-Rijnmond* (VHRR) showed that the *Veiligheidshuis* has a person-oriented approach, which is reflected in the main safety topics they identify: radicalization, (offenders of) High Impact Crimes, domestic violence, and psychiatry/confused people. Usually these come together in complex multi-problem cases (Appendix 1E). The interviewees distinguish three main groups/problems in society:

subversive crime, vulnerable people that can't keep up with the changing, digitalizing world and show confused behaviour, and, finally, "[...] where we see the actual changes in our societies – that we might have underestimated – is that polarisation and tensions are just increasing" (Interview VHRR, Appendix 1E). In this respect they, as other interviewees did as well, refer to how developments and incidents in other countries can have direct impact on the situation in Rotterdam. It is apparent that the VHRR is mainly focused on issues within the 'social safety' and 'societal safety' domain, with the former including the actual offenders, and the latter including the rising polarization and radicalization in society, as well as the confused/psychiatric people (Ibid).

From the perspective of the Veiligheidsregio Rotterdam-Rijnmond (VRR)

Every four years, the *Veiligheidsregio* has to develop a new policy program (Interview VRR, Appendix 1C). Those policies are mainly based upon the regional risk profile, which always is published prior to the policy program. The regional risk profile is generic and applies to the whole region (Ibid). However, the interviewee of the VRR indicated that there is a demand for a municipal risk profile (Ibid). In the last risk profile, for the years 2013-2017, different risk scenarios for the region Rotterdam-Rijnmond are presented, on the basis of different societal themes: natural environment, build environment, technological environment, vital infrastructure and services, traffic and transit, health and social-societal environment. From the risk analysis, in which impact, probability, available capabilities of the VRR, existing policies and administrative relevance are assessed, it is concluded that the 'main points within the risk of the VRR' are scenarios related to: flood, flu pandemic, threat of terrorism, subway fire / tunnel fire, crash of airplane, storm, and the external safety scenarios (hazardous substances scenarios).

When the interviewee was asked to identify components of a 'safe city', the first aspect distinguished was 'spatial safety', referring to how the *Veiligheidsregio* works on destination and building plans, together with the environmental services and the GGD¹. The second aspect was the 'prevention of fires', which is risk management as well as incident control. Connected thereto is the aspect of 'accessibility of the area' (for the emergency services, which sometimes contradicts with a traffic safety aspect). The interviewee also mentioned 'safe living', which is directed at communication with the citizens, providing in

¹ The 'GGD' stands for *Gemeentelijke Gezondheidsdienst*, the municipal health service. In Rotterdam, the GGD Rotterdam-Rijnmond is committed to a good and accessible health care system, as well as preventing diseases and other health problems (Website GGD Rotterdam-Rijnmond)

smoke detectors and making children aware of risks. Other topics mentioned in the interview were 'health' (for example in case of nuclear accidents), 'reduced self-reliance of citizens' and 'safe events', referring to all of the smaller and bigger events held in the city that involve varied safety measures (Ibid).

From the perspective of the Regional Police Unit Rotterdam

The safety agenda of the *Regionale Politie Eenheid Rotterdam (RPER)*, the regional police unit Rotterdam, is mostly determined by the national safety agenda. However the business controller of the Rotterdam Police stated that they "do try to give a couleur locale to it", together with the local influence of the municipality and the *basisteam*s, the local police teams (Interview RPER, Appendix 1D). The safety agenda is addressed in the regional policy plans, of which the last one was developed for the years 2015-2018. The priorities stated are High Impact Crime-offenses, youth, drugs, safety in the neighbourhood and subversive crime. Comparing these to the ones stated in the local safety policy of the city of Rotterdam, *#Veilig010*, it can be concluded that all of the regional themes are covered in *#Veilig010*. Therefore, it is not necessary to elaborate on the different themes. Whereas the safety policy of the RPER is directed at the whole region, the city Rotterdam plays a prominent role in the work of the RPER, because of its port and all its safety issues. Therefore it is not surprising that all of the regional themes are relevant for Rotterdam. The regional policy plan further states that two other objectives are an increase in the trust in safety and a greater satisfaction with the services of the police in the region.

In the interview conducted within the RPER, some important themes were mentioned that are not represented in the policy plan.

"We see polarization in the society, which mainly comes with events, and also terrorist threats; for example, at the [Rotterdam] marathon, in the past it was always a matter of traffic measures, but now there are sharpshooters and raptors as drones and bomb experts" (Interview RPER, Appendix 1D).

The RPER interviewees further argued that the safety policy is mainly a local policy from the mayor, but that they contribute to that with regards to local issues such as social disorder/nuisance from groups of youngsters, bicycles at the central station, Poles living on a camping and people that are fishing illegally. Also, the theme cybercrime is important to them, although they emphasize that it is a too difficult and costly problem to solve by every

municipality itself, so the police handles it regionally. Moreover, the interviewees told that whereas traditional criminality is decreasing, they are now also looking at other types of crime such as polarization and counter-terrorism, but also radicalization. In addition, it was discussed how safety in the city relies heavily on the degree to which cities are connected to each other, their social surroundings and the government. "That is far more important than what happens with regards to crime in your city", the interviewees stated with regard to safety perceptions (Interview RPER, Appendix 1D). With respect to the matter of social cohesion, within the Police there now is a growing attention to a 'just city', as introduced by Marnix Eysink Smeets, lector 'Public Trust in Safety'. This refers to the question of how to become a city in which all citizens are involved, where no one feels excluded and where everyone has equal chances (Ibid).

4.2.2.1.3. Indicators of 'Safe Cities' in Rotterdam

The *#Veilig010* program states that 'Rotterdam has become much safer' – what is meant with these words? What are the indicators that Rotterdam uses, on basis of which they claim that Rotterdam has become safer? In this paragraph, the safety measurement instrument of the City of Rotterdam is introduced. It also shows which indicators are used by the other organizations that are responsible for safety. Finally, (other) indicators for 'safe cities' according to the interviewees, and what limitations they see regarding certain indicators are discussed.

4.2.2.1.3.1. Current practice of safety measurement in Rotterdam

In the *#Veilig010* program, one of the objectives set for 2018 is to give Rotterdammers insight into the state of safety. How is this state of safety determined by the city administration? And do the other organizations involved also keep track of certain indicators of urban safety? Below, the current practice of measuring safety in Rotterdam is discussed.

Indicators for safety used by the City of Rotterdam

The City of Rotterdam has a special instrument aimed at measuring the safety (and social and physical) state of Rotterdam: the Neighbourhood Profile. This instrument will be discussed extensively below. However, the interviewees (Interview DV, Appendix 1A; Interview DV/OBI, Appendix 1B) emphasized that this is not the only way they monitor safety issues in the city. Therefore, their further elaborations on the topic of safety indicators and measurement will be addressed subsequently.

The Neighbourhood Profile

In 2014, the city of Rotterdam introduced the 'neighbourhood profile': a monitoring instrument in support of their neighbourhood-oriented work (Gemeente Rotterdam, 2016b: 3). The neighbourhood profile shows a coherent image of the factual and experienced situation with regards to the safety, social, and physical state of the neighbourhoods. It allows comparing neighbourhoods over time. How does a neighbourhood perform in comparison to other neighbourhoods and what developments are visible? In a press release of the city of Rotterdam concerning the introduction of the Neighbourhood Profile, mayor Aboutaleb is quoted, saying:

"The Neighbourhood Profile connects hard numbers with the experience of Rotterdammers. That is valuable. In addition, the connection between physical, social and security issues can be better understood. For example, if a neighbourhood scores low on housing, more often there is also school dropout and unemployment. These social conditions in turn lead to more feelings of insecurity" (Gemeente Rotterdam - mayor Aboutaleb, 2014).

In 2014 there was a zero-measurement, and in 2016 the first follow-up measurement was done. Now every two years, the measurement is done again. Table 7 shows which elements the safety, social and physical indices consist of. Every theme is split up between objective scores, consisting of indicators coming from diverse registrations or questionnaires in which Rotterdammers were asked for facts or behaviour, and subjective scores, made up from questionnaires in which Rotterdammers were asked for opinions and valuations.² The Neighbourhood Profile shows in which fields progress has been made. Partly based on that information, policy can be adjusted or intensified (Gemeente Rotterdam, 2016b: 4). Additional background information to interpret the scores from the instrument is provided in the form of a short neighbourhood description and a set of context indicators about the neighbourhoods.

² The scores on the themes are displayed as index scores; the average of Rotterdam in the zero measurement (2014) is set at 100. The scores of the neighbourhoods will be calculated for this city average. Areas that need special attention will be visible by a score (far) below the 100. Also relative strengths of neighbourhoods come forward by a score (far) above 100 (Gemeente Rotterdam, 2016b: 3).

Safety index		Physical index		Social index	
Objective	Subjective	Objective	Subjective	Objective	Subjective
Theft	Theft	Real estate	Real estate	Capacities	Capacities
Violence	Violence	Public space	Public space	Participation	Participation
Burglary	Burglary	Services	Services	Living environment	Living environment
Vandalism	Vandalism	Environment	Environment	Cohesion	Cohesion
Social disorder/nuisance	Social disorder/nuisance				
Safety experience		Living experience		Quality of life experience	

Table 7: Themes of Rotterdam Neighbourhood Profile (Gemeente Rotterdam, 2016b)

The Safety Index

The most relevant part of the Neighbourhood Profile for urban safety is the safety index. It includes theft, violence, burglary, vandalism, social disorder/nuisance and safety experience, which correspond to what is called ‘basic safety’ in the policy program *#Veilig010* (Gemeente Rotterdam, 2013). Table 8 shows which indicators are used to measure the state of the city on each topic. The objective data are derived from the registration systems of the police, fire brigade and *Gemeentewerken*, the engineering agency of the City of Rotterdam (Gemeente Rotterdam, 2013: 10). The subjective data are retrieved from the population survey, the *Veiligheidsmonitor* (safety monitor), in which citizens are questioned about their general safety perceptions, as well as their experienced safety issues and victimization in their own neighbourhood (Ibid).

SAFETY INDEX	Objective	Subjective	
Theft	Theft (per 1000 inhabitants)	Theft	
	Number of theft crimes against/ from motor vehicles (per 1000 inhabitants)	Bicycle theft often occurs as a neighbourhood problem	
	Number of theft crimes of motor vehicles (per 1000 inhabitants)	Vehicle theft often occurs as a local problem	
	Number of pickpocketing offenses (per 1000 inhabitants)	Car theft own neighbourhood last year as a % of total number of vehicles	
	Number of crimes of theft on / off / from other vehicles (per 1000 inhabitants)	Theft from car own neighbourhood last year as a % of total number of cars	
	Number of crimes of other capital crimes (per 1000 inhabitants)		Cycle theft own neighbourhood last year as a % of total bicycles
			% Of residents that have been victims of other theft in their own neighbourhood last year
% Of residents that have been victims of baggy robbery without violence last year in their own neighbourhood			
Violence	Violence	Violence	
	Number of sexual offense crimes (per 1000 inhabitants)	Threats often occur as a local problem	
	Number of crimes of public violence against	Violence crimes often occur as a neighbourhood problem	

	persons (per 1000 inhabitants)	
	Number of threat crimes (per 1000 inhabitants)	Tough robbery often occurs as a neighbourhood problem
	Number of crimes of abuse (per 1000 inhabitants)	% Of residents that have been victim of tampering robbery last year in their own neighbourhood
	Number of street robbery crimes (per 1000 inhabitants)	% Of residents that have been victim of violence last year in their own neighbourhood
	Number of robbery crimes (per 1000 inhabitants)	% Of residents that have been victim of abuse last year in their own neighbourhood
Burglary	Burglary	Burglary
	Number of house burglary crimes (per 1000 addresses)	Burglary in homes often occurs as a neighbourhood problem
	Number of box / garage / shed / garden house burglary crimes (per 1000 addresses)	% Of residents that have been victim of attempted burglary last year Percentage of residents that have been victim of burglary last year
Vandalism	Vandalism	Vandalism
	Number of destruction or property damage crimes (per 1000 inhabitants)	Cladding walls and / or buildings often occur as a neighbourhood problem
	Small outside fires (per 100 hectares)	Dismantling of cellular phones, buses or tram houses often occurs as a local problem
	Average score of graffiti and graffiti retailer in Product Standards	Destruction / theft from a car often occurs as a local problem Destroyed / broken banks, garbage bins etc. often occur as a local problem % Of residents that have been victims of other destruction last year in their own neighbourhood
Social disorder/nuisance	Social disorder/nuisance	Social disorder/nuisance
	Number of Safety and Public Order notices - Drugs case (per 1000 inhabitants)	Social disorder/nuisance of groups of young people in their own neighbourhood is experienced as a social disorder/nuisance
	Number of reports from the Living Environment - Conflict (per 1000 inhabitants)	Arguing and / or screaming youngsters in the street in their own neighbourhood are experienced as a social disorder/nuisance
	Number of reports from the Living Environment - Social disorder/nuisance (per 1000 inhabitants)	Bullying of young people who bully or intimidate local residents in their own neighbourhood is experienced as a social disorder/nuisance
		Drug abnormalities in their own neighbourhood are experienced as overriding
		Driving and returning drug addicts in your street is much more than annoying
		Trade in drug in the street in its own neighbourhood is experienced as a social disorder/nuisance
		Women and men who are bothered on the streets in their own neighbourhood are experienced as a social disorder/nuisance
		Ambient inconvenience is experienced as a social disorder/nuisance
General Safety Experience		% (Very) satisfied with the neighbourhood
		Average score for perceived victim chances own neighbourhood
		Average score for perceived victim chance in the neighbourhood of someone else in the household
		Average score for avoidance behaviour
Total score o/s	Objective Safety	Subjective Safety
Total score	Safety	

Table 8: Safety Index Rotterdam (Gemeente Rotterdam, 2016b)

Additional safety measurement by the City of Rotterdam

Not all of the safety priorities in the policy program *#Veilig010* are included in the Neighbourhood Profile, nor are all important aspects of urban safety – according to the

interviewed officials that have developed the instrument (Interview DV/OBI, Appendix 1B). The instrument only focuses on basic safety, which is part of social safety in Rotterdam. The interviewee of the *Directie Veiligheid*, team Knowledge³, emphasises the importance of qualitative research, which can complement and/or explain the data from the Neighbourhood Profile (Interview DV/OBI, Appendix 1B). In addition, it is important to also take the social and physical index into account, the interviewee argued, for a broader approach. The interviewee working at the research department of Rotterdam, *Onderzoek en Business Intelligence* (OBI), adds that besides the research on the neighbourhood level, there are also programs on a city level that are focused on a very specific domain – such as subversive crime, as seen in #*Veilig010* (Interview DV/OBI, Appendix 1B).

The question remained whether the state of those other priorities from #*Veilig010* are measured as well. As a response, the interviewee of Team Knowledge explained that the basis for the Safety Index is the Safety Monitor, a large-scale population survey of about 14.000 Rotterdammers, and argued that not all subjects are suitable for such a survey (Interview DV/OBI, Appendix 1B). However, she added, the Safety Index is not the only way to get data and use data; other safety issues are measured in other ways. Subversive crime and radicalization, for example, are measured by using different sources information and from the networks the City has. "You get a lot of information out of that, and you do not want to include that into a monitor such as the safety monitor" – the interviewee states (Ibid). However, the interviewed researcher from OBI does make the note that such information is not always translatable to measurement data. The biggest challenge is how to how to unlock the information correct; the City has many people in the neighbourhoods that have information, but how do you disclose that information of the neighbourhood police officer? Therefore, on issues such as subversive crime, it is usually the effort that is measured – which is difficult to interpret in terms of progression or decline. Policy results on the item have to be reported to the city council by showing the progress on actual indicator level. In that way it does get monitored, only in another way than a large-scale monitor such as the Neighbourhood Profile. "But, we definitely keep track. You have to." (Interview DV/OBI, Appendix 1B). For the physical safety domain, according to the Team Knowledge interviewee, there are also indicators and basic data on the physical environment. This information however is not in hands of the DV. It lies within another cluster, as the DV is

³ Team Knowledge is responsible for the policy advisors of the Direction Safety working in a knowledge-driven way; knowledge that is not only derived from the Neighborhood Profile, but also based on the police numbers they receive every month, or on information from the researchers carried out by the research department of the City, *Onderzoek en Business Intelligence* (OBI), or by universities.

more responsible for ‘social safety’. The interviewee does emphasize that her department is involved with crises and physical safety from the ‘public order and safety’ authority of the mayor (Interview DV/OBI, Appendix 1B).

Indicators for safety used by the Veiligheidshuis Rotterdam-Rijnmond

The *Veiligheidshuis* uses management reports and effect measurements to reflect on its own approaches (Veiligheidshuis Rotterdam-Rijnmond, 2016). They keep track of matters such as how many case consultations they have for every theme, how many persons there are on their High Impact Crime target list and how many person-oriented approaches there have been in a year. These numbers are used in the *Veiligheidsbeeld* (safety image), a publication by the ‘*Veiligheidsalliantie Rotterdam*’ (VAR), in which the data of the police, VHRR, city administration, and the public prosecutor are combined. In this publication, that is published every six months, different themes and indicators that should provide an image of the safety situation in the Rotterdam Region are shown – presented here in table 9. In addition to the more traditional crime and incident rates of the police, it also includes the themes ‘youth problems’, ‘person-oriented approach’, ‘subversive crime’, ‘Burgernet’ (an app through which citizens can help the police with cases of such as theft or missing persons), and the ‘safety monitor’. It is not totally clear why these themes are chosen and what all of the numbers mean; however effort is made with regards to the subversive crime factor. It is stated that the numbers of the Regional Information and Expertise Centre (RIEC) differ in some parts from the police numbers, as they also provide an image of the activity of the municipality regarding the theme. A higher rate of signals could mean that there are more issues, but could also mean that a municipality is more alert. In addition, organized and subversive crime is usually not visible. There is a large ‘dark number’: which means that there is a big difference between the actual phenomenon and the number of declarations (Dijkshoorn, 2016: 121). When the numbers are low, this does not have to say anything. However, it is stated that these types of criminality usually are connected to more visible sorts of crime such as social disorder/nuisance, drug trafficking and HICs (Veiligheidsalliantie Rotterdam, 2016). Officials at the *Veiligheidshuis* stated that the indicator ‘domestic violence’ is also difficult, as much happens behind the front door, which is difficult to measure (Interview VHRR, Appendix 1E). In the ‘safety monitor’ category the classic indicator of ‘safety perceptions’ and other ‘social safety’ elements are addressed, as well as the indicator ‘liveability’ which in turn includes indicators that could be grouped under the physical and societal safety dimension. It also includes one ‘digital safety’

indicator, namely 'victimization of cyber-crime' and the 'valuation of the police and the municipality'.

Theme	Organization	Main indicators	
Crimes	Police	Total number of crimes	
		HIC and violence	Theft/burglary house
			Theft/burglary box/garage/shed/ garden house
			Public violence against person
			Threat
			Abuse
			Street robbery
			Robbery
			Capital crime
		Property crime	Theft from/out of motor vehicles
			Theft of motor vehicles
			Theft of moped-bicycles
			Pickpocketing
			Damage or property damage
			Theft/burglary companies and institutions
Other themes	Drug trafficking		
	Domestic violence		
Incidents	Police	Social disorder/nuisance	Drugs/alcohol social disorder/nuisance
			Traffic social disorder/nuisance
			Social disorder/nuisance by confused/strained person
			Neighbour social disorder/nuisance
			Report youth social disorder/nuisance
		Other themes	Violence against police officers
			Safe Public Task
Youth problems	OM (public prosecutor)	Youth groups	Annoyingly
			Social disorder/nuisance-giving
			Criminal
	Bureau Halt	Total number of referrals	Balance
			Public order
			Other
			School absenteeism
			Asset crimes
			Destruction
			Fireworks violations
Person-oriented approach	Veiligheidshuis Rotterdam-Rijnmond	Persons in youth approach	Total
			Of which new influx
		Persons in repeat offender approach	Total
			Of which new influx
		Persons in robbery approach	Total
			Of which new influx
		Persons in domestic violence approach	Total
			Of which new influx
Total	Total		
	Of which new influx		
Discussed in ZSM+			
Number of HIT persons			

Subversive crime	RIEC	B-CBA ⁴	
		BIBOB	Files Due for license
		Integral cases	Analyses
			Interventions
			Themes
Account holdership			
Burgernet	Police	% Participants of citizens	
Safety monitor		Liveability	Grade liveability living neighbourhood Quality physical facilities Social cohesion Development neighbourhood
		Safety perception	Grade safety in living neighbourhood Unsafety feeling in own neighbourhood Unsafety feeling in general Perception criminality in neighbourhood Perception house burglary
		Social disorder/nuisance	Physical deterioration Social disorder/nuisance Social disorder/nuisance of which caused by youth hanging around Traffic disorder/nuisance
		Victimization	Total (excl. cybercrime) Violence offences Asset offences Demolitions Cyber crime
		Preventive measures	Number of social prevention measures Number of physical prevention measures
		Functioning municipality and police	Satisfaction with municipality Satisfaction with police in the neighbourhood

Table 9: Indicators *Veiligheidsbeeld* VAR (Veiligheidsalliantie Rotterdam, 2014)

Another indicator is the number of repeat offenders as part of the population that the VHRR have in sight, which measures the organization's mission and vision: to contribute to decreasing the number of repeat offenders (Appendix VHRR, Appendix 1E). Also in the interview it became apparent that radicalization and polarization are hot items nowadays, and that they can be seen as a gauge for how it goes (Ibid). Unfortunately, it is not public how the *Veiligheidshuis* exactly measures these issues.

Indicators for safety used by the Regional Police Unit Rotterdam

As shown, the RPER delivers data for the safety indicators used in both the Safety Index as well as the safety image of the VAR. In their own year reports, they have indicators for operational objectives regarding the main themes: HIC, youth, safety in the neighbourhood, subversive crime (general/drugs), and the development themes and additional (national)

⁴ B-CBA (administrative crime analysis image) is a methodology developed by a couple of Regional Information Expertise Centers together with the National Information and Expertise Centre (Website RIEC-LIEC, 2017). It bundles, streamlines and focuses information in the form of a subversive crime image/B-CBA, carried out by demand of a municipality. An example could unfortunately not be found by desk research.

priorities. This includes, besides indicators such as ‘number of burglaries’ that are similar to numbers in the Safety Index and the VAR, performance indicators such as ‘clearing percentage mugging’ and ‘control coffee shops 3 times a year’. Also, one page in the year report that is titled *A couple of numbers about 2016 unit Rotterdam*, includes numbers that are meant to give an impression of what the RPER does. These are ‘incoming phone calls’, ‘recorded declarations’, ‘number of incidents with priority 1-3’, ‘number of crimes’ (HIC, murder, robbery, mugging, home burglaries and sexual offenses), ‘number of dismissed suspects’, ‘checks of sex establishments/coffee shops/firearm leave holders’, ‘number of events/large scale special performances/games played soccer/ teams large-scale detection’ and ‘communication’ (number of officers/teams on twitter, subscribers YouTube channel police, number of queries for videos YouTube channel and number of participants Burgernet).

Central in the RPER's work and to measure safety, is the *gebiedsscan*, the area scan. Rotterdam consists of multiple areas, that all have a team that gets around the table once a year to discuss what they see on the streets (Interview RPER). The area scan, which includes all kinds of numbers – objective numbers, subjective numbers from the national safety monitor and their own subjective numbers - is then complemented with street knowledge, information they receive from the police officers that work on the streets. Based on this information, an attempt was made to indicate which groups and topics need attention, and make a policy. The information in the area scans is not only on traditional criminality. The interviewee points out that a shift can be seen. It is partly still about traditional crimes, such as house burglaries, but also “you see oh, a snack bar, where there are never customers, or we see a garage company that is always closed, and we see the refugee problem, which is included in the area scan - we see people with right-radical ideas walking through the city, with symbols” (Interview RPER, Appendix 1D).

Moreover, regarding subversive crime, one of the priorities, the police officials point out that the Regional Information and Expertise Centre (RIEC) are in charge of the measuring and mapping, which they do based on both their own information and analyses, as well as information from the municipality and police. However, the interviewees do emphasize that it is very difficult to develop an indicator for subversive crime, as indicators such as ‘number of investigations regarding subversive crime’ are not objective (Ibid). With regards to the topic radicalization they further argue that they do not have quantitative numbers, but rather qualitative data. They process asylum influxes and counter-terrorism, in which indicators for the latter are usually directed internally: such as ‘training plans’, ‘quality

OSINT function' (open source intelligence techniques to gather information and intelligence based on public sources) and 'consultations with chain partners'. For the traditional safety issues there are many objective quantitative indicators, and for new developments such as radicalization and polarization they have internal indicators – process indicators, rather than output or outcome indicators are available (Ibid).

Indicators for safety used by the Veiligheidsregio Rotterdam-Rijnmond

Within the risk management department of the *Veiligheidsregio*, only the issued recommendations are indicators being tracked. These are usually prevention of large fires in Rotterdam. The interviewee however states that the chance is really small, so if you would measure the large fires for a couple of years, nothing will show (Interview VRR, Appendix 1C). This is hard to interpret: did certain measures work or not? This also applies to the other numbers that the VRR publishes in their annual reports, such as the number of ambulance rides. Is a decrease in ambulance rides positive for safety in the city? What does it mean? Other examples of numbers shown in the annual reports are the number of executed fire safety checks, the number of information meetings held, the number of inside and outside fires that were fought, the number of practices done by fire-fighters, but also the visibility of the organization on social media (Ibid).

At the moment, the *Veiligheidsregio* is developing its own safety monitor (Interview VRR, Appendix 1C). It will probably be mainly focused on finding out whether citizens are well informed about the safety risks in their environment. The VRR has an official role, enshrined in the law *Veiligheidsregio* that they have to inform citizen on possible risks and what measures are taken to limit that risk. In practice, the VRR delivers that information, and the municipality should inform the population (Ibid). However, the government also expects citizens to search for information themselves. Certain websites, such as crisis.nl and the region's own rijmondveilig.nl gave instructions on what to do when an incident happens are to be found (Ibid). Another part of the safety monitor will probably be focused on finding out what the citizens themselves find important; "If you can divide ten euros, what are you going to bet on?" according to the interview (Ibid).

Experts' view on the indicators of 'Safe Cities'

In the interview with the officials that developed the Neighbourhood Profile (Interview DV/OBI, Appendix 1V), the following answer was given to the question what the indicators for 'safe cities' are: the indicators of the Safety Index together with all of the issues in

#*Veilig010*, and the issues that will be added in the following safety program – such as cybercrime. However, according to the researcher from OBI, for many of those subjects such as cybercrime it is still unclear how they can be measured (Ibid). In addition, cyber-crime is also seen as a difficult case because it is not sorted out yet which organization in the city is main responsible – especially if the perpetrator might not even be in Rotterdam. It is also difficult to get information radicalization and subversive crime. One can only report on what one knows (Ibid). Finally, with regards to more ‘societal safety’ factors, such as ‘trust in local government’, they agreed that those are also related to safety. It is the intention of the Neighbourhood Profile to show the connection between those different indicators. The physical index and the social index also have an effect on the safety index, and together they form one whole. However Rotterdam has chosen to show them in separate indices, to show as transparently as possible what is happening in the neighbourhoods (Ibid).

According to one of the officials of the *Veiligheidshuis* (Interview VHRR, Appendix 1E), the streetscape is very important with regards to safety perception. Therefore good lightning, good urban planning and infrastructure are essential. However, what causes feelings of unsafety can differ in every neighbourhood – from dog poop to fear for a refugee shelter. Therefore it remains a difficult question, with many aspects to it.

In the interview with the officials of the RPER, multiple indicators for a 'safe city' were mentioned. First of all, the interviewees thought that the method of the Safety Index of the City of Rotterdam was a good way to approach a safe city: following neighbourhoods for multiple years and then coming to a certain score based on a fixed indicator sets (Interview RPER, Appendix 1D). However, they added that you should also look at developments in the regional area and be able to adjust your basic set to certain trends, such as ‘cybercrime’. Also, regarding radicalization, the officials suggest to also measure indicators such as ‘number of citizens with an unemployment benefit’, ‘number of school leavers’, ‘teenage pregnancies’. “These are all the aspects that possibly have even more influence on safety than what the police was doing” (Interview RPER, Appendix 1D). They question how to exactly measure polarization, but do suggest the indicator ‘voting behaviour’. With respect to the shift to a *just city*, they emphasize that in addition to the classical objective/subjective safety indicators and indicators for a ‘clean and quiet environment/surrounding’, indicators for societal aspects will be very important (Ibid). However they believe that it will be difficult to come to meaningful indicators, and that the police are now in a search for new indicators for new social areas. The interviewees suggest that it could also be worthwhile to look at what the professionals think,

giving a more qualitative image by making a combination between system information and street information (Ibid).

Finally, the VRR interviewee believes that VRR indicators for a safe Rotterdam would, after all, be ‘number of fires’ and ‘number of small/large incidents’, in which a distinction should be made regarding traffic accidents, because they can’t do much about that (Interview VRR, Appendix 1C). In the interview it was emphasized that the VRR is developing its business intelligence practices, which could be very important for their work – to identify what measures help and what measures do not, and what certain numbers mean (Ibid). Also, the VRR would want to know what the citizens believe is a safe city, what they believe are the important safety themes, so they could adjust their focus according to these themes (Ibid).

4.2.2.1.4. Conclusion

In this case study, the concept of a ‘safe city’ was explored within the context of the city Rotterdam. It was assessed how experts in Rotterdam look at urban safety and how the research topic is approached in the documents of organizations that are responsible for a safe Rotterdam. The main objective was to identify the main topics that are considered relevant for ‘safe cities’ in Rotterdam and the indicators that are used to measure safety in the city.

In conclusion, an answer to how a ‘safe city’ could be operationalized in indicators on the basis of the practice in Rotterdam is fragmented. The City of Rotterdam has one method that provides the main image of safety in the city, the Neighbourhood Profile. The different experts interviewed consider the instrument a good method to show developments over the years in different areas in Rotterdam and on different dimensions of safety (and social and physical aspects). However, the Neighborhood Profile is not complete; it focuses on ‘basic safety’ and does not cover all different safety subjects that are prominent in Rotterdam. Moreover, different organizations that are responsible for safety in the city all have their own way of measuring safety as well. The joint safety report, *Veiligheidsbeeld* of the VAR, provides some extra indicators on top of the ones used in the safety index of the Neighborhood Profile. Next to crime and incidents numbers of the Police and subjective safety perceptions from the Safety Monitor, it addresses youth problems, the person-oriented approach of the *Veiligheidshuis* and the subversive crime numbers that are provided by RIEC’s. However the latter are more difficult to interpret because there is a large ‘dark number’. Moreover, a larger number of cases could mean that subversive criminality has increased, but it could also mean that investments in countering the issue have paid off.

In Table 10, all of the indicators that were mentioned in the interviews and documents reviewed are combined and presented on the basis of the four dimensions of safety. The indicators are divided into objective, subjective, qualitative and performance indicators. The main mode are objective and subjective indicators, both mostly derived from the safety index and the VAR safety image – overlap in the total list is eliminated as much as possible. The qualitative indicators are included because it was made clear in different interviews that quantitative indicators alone cannot explain everything; the different organizations also receive a lot of information on the safety situation from citizens, their local networks and other qualitative sources. In addition, regarding some safety topics there are no objective indicators developed yet, and some cannot be measured in numbers at all. The performance indicators are internal indicators that organizations use to keep track of certain issues or to evaluate their own influence. Regarding the work of the police and the *Veiligheidsregio*, many performance indicators could be found in documents – however it is not certain which indicators they actually use or regard as indicators for a ‘safe city’, therefore they are not all listed piece by piece – except when it was explicitly mentioned that an indicator is used that way. For all the topics with a (*), there either are no indicators measured in Rotterdam, or they were just not mentioned or could not be found.

For the first dimension, social safety, many objective and subjective indicators are measured in Rotterdam. Considering subversive crime, the indicators from the VAR safety image are listed, and a performance indicator: ‘number of investigations’. Seventh mentioned in the table are some ‘general’ indicators that apply to multiple social safety topics: the recidive number, HIC, and safety in public transit can all refer to violence/theft or other crimes. Persons in youth crime approach, in repeat offender approach and number of HIT persons are also of another order: they are probably multiple issue cases. However, these indicators are included as in Rotterdam these are seen as valuable data.

Regarding the second dimension, physical safety, the indicators found are quite limited – this can be explained partly by recognizing that most of the safety measurement in Rotterdam is done by the municipality, on the basis of information from the police. These two organizations are less focused on physical safety aspects. From the interview at the *Veiligheidsregio* it became clear that the VRR does not use many indicators that determine (physical) safety. Two that were mentioned, are used for the topic of fire safety, and others are more general indicators referring to incidents in general. The indicator ‘informed citizens’, is a suggested indicator of the VRR interviewee – the *Veiligheidsregio* is still

developing its safety monitor. Finally, it should be noted that the *Veiligheidsregio* does possess many numbers concerning incidents, their deployment and performance, and also makes risk analyses considering many different incidents/threats – however as those were not put forward as indicators for ‘safe cities’, they are not included as indicators in the list.

For the third dimension, digital safety, no objective indicators could be found in crime statistics that are measured in Rotterdam. However, in the mid-term review of the safety policy of the City, statements were made on the number of cyber incidents and the damage costs. Therefore it is assumed that the City or another organization does keep track of issues of digital safety. While it is unclear what is exactly meant by ‘cyber incidents’, the indicators were mentioned in the context of ‘cyber resilience’ so therefore they are listed accordingly.

Finally, concerning the last dimension, societal safety, it should be noted that the indicators for radicalization and polarisation were mentioned in interviews – it is however not certain that those are the actual indicators used in Rotterdam to measure these topics, and it is assumed that there are more because of the complexity and diverse nature of the issues. Concerning societal safety, it is also assumed that the *Veiligheidshuis* probably does keep track of how many cases of confused people there are – but it is not certain if and how this safety topic is further assessed by means of indicators. Further it is assumed that concerning the topics of ‘risk group: culturally different groups’, ‘us-society’ (the degree of social tensions in society), and ‘social cohesion’, there probably are indicators that are tracked within the municipality or another organization – however these were not mentioned in the interviews. It is therefore uncertain how these topics are monitored and if they are also analysed in the context of safety matters. To stay away of filling in how the city measures these complex phenomena, it was chosen not to include these topics in the list of indicators.

In sum, operationalizing the concept ‘safe cities’ based on the indicators found in this case study would emphasize traditional criminality, social disorder/nuisance and safety perceptions issues. However it was also found that it is important to place (traditional) safety aspects to the social and physical aspects of the city to get a comprehensive image – as the interviewed police officials emphasized how they are noticing a shift to a ‘just’ city, and the few definitions for safe cities that were given also underscored the importance of the societal aspect.

	Topics	Objective indicators	Subjective indicators	Qualitative indicators	Performance indicators
SOCIAL	Theft	<p>Theft</p> <p>Number of theft crimes against/ from motor vehicles per 1000 residents</p> <p>Number of pickpocketing offenses per 1000 inhabitants</p> <p>Number of theft crimes of motor vehicles per 1000 inhabitants</p> <p>Number of crimes of theft on / off / from other vehicles per 1000 inhabitants</p> <p>Number of crimes of other capital crimes per 1000 inhabitants</p> <p>Youth groups</p>	<p>Theft</p> <p>Bicycle theft often occurs as a neighbourhood problem</p> <p>Vehicle theft often occurs as a local problem</p> <p>Car theft own neighbourhood last year as a % of total number of vehicles</p> <p>Theft from car own neighbourhood last year as a % of total number of cars</p> <p>Cycle theft own neighbourhood last year as a % of total bicycles</p> <p>% Of residents that have been victims of other theft in their own neighbourhood last year</p> <p>% Of residents that have been victims of baggy robbery without violence last year in their own neighbourhood</p>	Talking with citizens and local professionals	
	Violence	<p>Violence</p> <p>Number of sexual offense crimes per 1000 inhabitants</p> <p>Number of crimes of public violence against persons per 1000 inhabitants</p> <p>Number of threat crimes per 1000 inhabitants</p> <p>Number of crimes of abuse per 1000 inhabitants</p> <p>Number of street robbery crimes per 1000 inhabitants</p> <p>Number of robbery crimes per 1000 inhabitants</p> <p>Persons in domestic violence approach</p> <p>Persons in robbery approach</p> <p>Youth groups</p>	<p>Violence</p> <p>Threats often occur as a local problem</p> <p>Violence crimes often occur as a neighbourhood problem</p> <p>Tough robbery often occurs as a neighbourhood problem</p> <p>% Of residents that have been victim of tampering robbery last year in their own neighbourhood</p> <p>% Of residents that have been victim of violence last year in their own neighbourhood</p> <p>% Of residents that have been victim of abuse last year in their own neighbourhood</p>	Talking with citizens and local professionals	

	Burglary	Burglary Number of house burglary crimes per thousand addresses Number of box / garage / shed / garden house burglary crimes per thousand addresses Youth groups	Burglary Burglary in homes often occurs as a neighbourhood problem % Of residents that have been victim of attempted burglary last year Percentage of residents that have been victim of burglary last year Perception house burglary	Talking with citizens and local professionals	
	Social disorder/nuisance	Fireworks violations Social disorder/nuisance Number of Safety and Public Order notices – Drugs case per thousand inhabitants Number of reports from the Living Environment – Conflict per thousand inhabitants Number of reports from the Living Environment – Social disorder/nuisance per thousand inhabitants Youth groups	Physical deterioration Social disorder/nuisance Social disorder/nuisance of which caused by youth hanging around Traffic nuisance Victimization demolitions	Talking with citizens and local professionals	
	Safety in the neighbourhood/area (general)	Burgernet participants %	Satisfaction with police in the neighbourhood Perception criminality in neighbourhood Grade safety in living neighbourhood Unsafety feeling in own neighbourhood	Street knowledge (RPER-area scan)	
	Subversive crime: drug trafficking, laundering, exploitation	RIEC → BIBOB files, integral cases	Victimization asset offences	Risk group: drug criminals	Number of investigations
	General	Recidive number High impact crimes Safety in public transit Persons in youth approach Persons in repeat offender approach Number of HIT persons	Number of social prevention measures Satisfaction with municipality Unsafety feeling in general	Discussed in ZSM+ Talking with citizens and local professionals	Police performance indicators (all)
PHYSICAL	Vandalism	Vandalism Number of destruction or property damage crimes per thousand inhabitants Small outside fires per hundred hectares Average score of graffiti and graffiti retailer in Product Standards	Clean environment Vandalism Cladding walls and / or buildings often occur as a neighbourhood problem Destroyed / broken banks, garbage bins etc. often occur as a local problem		

			% Of residents that have been victims of other destruction last year in their own neighbourhood		
	Traffic safety	Number of (deadly) accidents % Aggressive driving 77behaviour % Driving too hard			
	Fire safety	Number of fires Number of fires of buildings			
	Counter-terrorism				Training plans Quality OSINT function Table tops with chain partners
	*Safe events				
	*Spatial safety / urban planning				
	*Accessibility of the area				
	*Health & Industrial safety (nuclear accidents)				
	*Safe living				
	*Self-reliance citizens				
General	<i>Informed citizens</i> Number of small/large incidents Duration of incidents Number of casualties Locations and times of incidents Target groups (seniors et cetera)	Number of physical prevention measures Importance different topics		Performance/deployment emergency services (all)	
DIGITAL	Cybercrime		Victimization Cybercrime		
	Cyber-resilience	Number of cyber incidents Damage costs of cyber incidents			
SOCIETAL	Radicalization	Number of citizens with an unemployment benefit Number of school leavers Teenage pregnancies		Information from networks	
	Polarisation	<i>Voting behaviour</i>			
	Liveability		Grade liveability own neighbourhood Quality physical facilities Social cohesion		

			Development neighbourhood		
	School absenteeism	Youth groups at Halt			
	Trust		In local government		
	*Risk group: culturally different groups				
	*Us-society				
	*Confused people				
	*Social cohesion				
	General			Street information: opinion professionals	

Table 10: Operationalization of 'safe cities' in indicators based on the Rotterdam case

4.2.2.2. Antwerp

4.2.2.2.1. Contextual factors

Before analysing the information gathered on the perspective on the concept ‘safe cities’ and its indicators in Antwerp, a brief introduction of the case study will follow. This includes some demographic and political aspects of Antwerp, as well as an assessment of the governance of safety structure in the city.

4.2.2.2.1.1. The city Antwerp

Antwerp is the capital of the Antwerp Province, situated in Flanders, Belgium. The city counts 521.946 citizens, of which 52 per cent are natives and almost 21 per cent are foreigners (Stad Antwerpen, 2017). The city has one city administration, led by the mayor, and consists of nine districts, which each have a district council and collegiate body (De Pauw & Easton, 2017). The districts can decide autonomously on various matters, but regarding safety they only have an advising role towards the city council of Antwerp. Antwerp is in terms of population the largest city of Belgium, and it is the second port of Europe. It is located largely on the right bank of the Schelde River, has a petrochemical business of major economic importance and is a world centre for diamond trade.

4.2.2.2.1.2. Governance of safety structure in Antwerp

In the city of Antwerp, four governance levels influence the policy making process in the safety domain. The Federal government sets certain policy objectives, a social policy supported through contracts. The regional government of Flanders supports some welfare projects, although they do not have a prominent role. The districts play an advisory role; and, ultimately, the most prominent role is taken up by the city council of Antwerp. As until 2012, Antwerp was under a socialist regime, this meant a mainly preventive policy, including the establishment of a ‘Living Together’ city department in which a social policy division and a safety policy division co-exist. In the next sub paragraphs, important actors that are responsible for guaranteeing safety in Antwerp are discussed.

The role of the mayor

In Belgium, a significant part of the legal powers of the mayor actually concern police matters (Steyvers, 2007, in Bauwens, 2015:11). Also, the mayor is the traditional head of

the local police. In Antwerp the police zone coincided with the territory of the municipality. The mayor of Antwerp is the head of the Antwerp police. However, in practice, in Belgium the mayor identifies mainly as municipal policymaker and manager (Bauwens, 2015: 12). As *primus inter pares* of the Aldermen, the mayor is often identified with the board of the municipality; therefore he or she has a fairly high authority (Ackaert, 2006, in Bauwens, 2015). In terms of politics, the office of the mayor is a highly desired position involved with the safety theme (Wille & Deschouwer, 2012, in Bauwens, 2015).

Local police Antwerp

Since the introduction of the ‘Integrated Police Force on Two Levels’ act in 1998, Belgium has two types of police: a local police force and a federal police force (Ponsaers, 2002, in Devroe & Ponsaers, 2017: 48). At both levels, the forces have substantial autonomy – although together they have to ensure ‘*integrated community policing*’ (Devroe & Ponsaers, 2017: 48). On local scale the police system comprises 195 diverse local zones, and, after ten years of reform, the federal police now consists of ten deconcentrated provincial units (Ibid: 48-49). Antwerp has a single police zone, so the local police is organized as one police zone with one police chief (De Pauw & Easton, 2017: 256). The local police of the Police Zone Antwerp are responsible for the city and all its districts.

The safety policy division: Social Intervention and City Supervision

Under direction of the director Safety Policy of the City, the *Directeur Veiligheidsbeleid Antwerpen* (DV-A), the departments ‘Social Intervention’ and ‘City Supervision’ are focused on all safety matters that are not under the responsibility of the police or part of physical safety. These include issues such as drugs, prostitution, radicalization, criminality ranging to social disorder/nuisance and social issues, such as families with very complex problematics (Interview DV-A, Appendix 1G). The department has the main tasks of social intervention, oversight and administrative oversight. The responsibilities of the department are spread over the aldermen, but the main is for the mayor, and partly for Social Affairs (Ibid).

The disaster coordinator

Within the city of Antwerp, there is a special ‘disaster coordinator’ position, the *Rampenambtenaar* (RA). The RA is employed by the mayor and part of the city administration, but housed at the fire brigades (Interview RA, Appendix 1H). Together with several emergency services and other organizations – dependent on the situation – the RA is responsible for the operational, proactive and aftercare tasks concerning public safety; incidents including crises and disasters, as well as large scale events (Ibid).

4.2.2.2.2. Definition of ‘safe cities’ in Antwerp

4.2.2.2.2.1. Definitions used and proposed

In the interviews with the experts in Antwerp, the question whether they use a definition for ‘safe cities’ or if they could define the concept was asked again. The City of Antwerp does not use one definition for a ‘safe city’. The *kabinetsadviseur veiligheid* (KAV), the cabinet safety advisor, stated “Everyone uses a definition. For a neighbourhood police officer it means something else, then when it comes to terrorism.” (Interview KAV/SD, Appendix 1F). Therefore, the city uses multiple working definitions of safety – even within the urban domain there is a very wide scope. It is hard to say that there is only one definition, it would not do justice to the complexity of the issue, the interviewee of the City research department, the *Studiedienst* (SD), argues (Interview KAV/SD, Appendix 1F). The head of the safety department of the City adds that a completely safe city does not exist, and therefore he cannot define a safe city (Interview DV-A, Appendix 1G). However he emphasized that safety with respect to a city is about the government doing its utmost to ensure that every citizen can fully enjoy his or hers fundamental rights and civil liberties, whatever his or her colour, gender or sexual orientation might be (Ibid).

The Antwerp Police, the *Lokale Politie Antwerpen* (LPA), does not have a definition for a ‘safe city’. The interviewed police chief stated that a definition is a very political question, which is difficult to answer for the police. He argued that it is possible to objectify safety: information in numbers, such as reported crime, or on the basis of safety perception, however what would be a safe or unsafe city, is very political (Interview LPA, Appendix 1I). Defining a ‘safe city’ from his personal view, the interviewee stated:

“There are obviously problems in a city like Antwerp - but there are no real no-go zones. [...] I think that is very important to me. That you can come everywhere as a private person and as a police officer, without knowing in advance that you are going to be in trouble” (Interview LPA, Appendix 1I).

Asking the disaster coordinator of the City of Antwerp to define ‘safe cities’, he first emphasized that there is a difference between safety and security, and that he has found that the concepts sometimes go hand in hand, but they can also be like water and fire.

“Take a cinema building complex where many people come in and go out - from a security point of view, you would probably build a concrete bunker with one entrance and exit. From a safety perspective, you would make a glass building and even make emergency exit at all glass walls, so that you can always see how the case develops inside. You always have that tension” (Interview RA, Appendix 1H).

Then, returning to the initial question of what is a ‘safe city’, the RA stated that it is a city where a citizen can live a life, come to visit, work as free from danger as possible (excluding certain dangers). If, in any case, there is exposure to danger, he or she can count on emergency services in the broad sense of the word. This can guarantee a return to a normal, safe situation as quickly as possible and give the best care to the citizens. The last aspect, he continued, is the difference between subjective and objective safety/security: you have to take into account the perception of safety (Ibid).

4.2.2.2.2. Most important themes

According to the cabinet advisor on safety, the most important topics of safety in the city are distinguished within a policy cycle of six years and during that time, issues can rise that haven’t been there before. On the zonal level, the priorities are: ‘drugs’, ‘house burglary’, ‘aggressive thefts’, ‘domestic violence’, ‘countering radicalization’ and ‘reducing terrorist threat’ (Interview KAV/SD, Appendix 1F). Other safety topics that were addressed during the interview with the KAV and the head of SD were ‘homeless people’ (when causing social disorder/nuisance/crime), ‘nuclear safety’ and ‘home wrecking’. Also, the issues of ‘(noise) disorder/ nuisance’, ‘fines’, ‘illegal dumping’ and ‘pollution of the street’ were discussed. It was argued that problems come with the actuality; radicalization for example has been an issue for a longer time, but since there is a terrorist threat, there is a public interest (Ibid).

The head of the safety policy department gave the priorities in the zonal safety plan as main topics: ‘drugs’ and ‘house burglary’, but also ‘street robberies’, ‘traffic safety’ and

‘radicalization’ (Interview DV-A, Appendix 1G). Another important topic that was discussed, a new focus in Antwerp, is ‘organized crime’, which is still in its infancy. Although the approach to organized crime in Belgium is a federal competence, it is a safety topic in Antwerp, with for example its big cocaine business (Ibid). Another issue that was addressed is concerned with differentiating ideas of how society looks like, which leads to (multicultural) problems with ‘behaviour in public space’, from ‘sexual intimidation’ to ‘street pollution’ (Ibid). Digital safety topics, such as cybercrime and child pornography, belong to the area of the federal police, and are therefore not part of the local administrative policy. Finally, the interviewee emphasized that when it comes to safety of the city, it is about keeping phenomena under control. Whereas there are many safety issues, the challenge is to cooperate with many different services that are organized at different levels (Ibid).

The coalition agreement

The Coalition Agreement 2013-2018 is based on different main characteristics that the city Antwerp aims to be, of which ‘safe’ is one. Other examples are the ‘mobile city’, ‘learning and working city’ and ‘lively city’. In the chapter ‘safe city’ it is stated that life in a metropolis inevitably brings safety problems, which is a reason for a city to put maximum effort on safety. “Guaranteeing everyone’s safety is the primary governmental task” (Stad Antwerpen, 2014: 14). Safety is therefore seen as a horizontal objective integrated in every policy domain, as a priority for every city department. A first point of attention regarding safety in the coalition agreement, and in the interviews, are drugs issues. This is partly a typical issue for Antwerp, as its port can be seen as the main centre of drug traffic in Belgium and Europe, leading to much social disorder/nuisance issues and petty crime.

The chapter ‘Safe City’ is further divided in three subchapters: police, spatial safety and the firearms. It includes agreements on the performances in these sectors. Safety subjects that can be deducted from the agreements concerning the police are: ‘drugs issues’ (including related ‘social disorder/nuisance’ and ‘petty crime’, ‘organized gangs’, ‘drugs traffic’, and ‘criminal family-networks’); ‘house burglary’; ‘safety in public transit and pre-metro stations’; ‘traffic safety’, ‘liveability’ and ‘mobility’ within Antwerp; malafide traders, the illegal economy and fraudulent business; all forms of violence; (youth) social disorder/nuisance; youth criminality; domestic violence. Thus, all subjects that belong to the ‘social safety’ dimension except the traffic safety, which

can be seen as 'physical safety'. The 'physical safety' dimension is further represented in the second part of the chapter, 'spatial safety'. Under 'spatial safety' it is argued that criminality emerges from a combination of circumstances – Antwerp wants to put effort in reducing the criminality-facilitating factors in public space. Therefore, principals of safe design and of public spaces are integral part of the safety policy. Safety incidents are mapped by use of a Geographical Information System (GIS). Lightning and visibility, sometimes combined with cameras, should enhance social control and safety feelings. At unsafe places it is important to indicate the causes of social disorder/nuisance and crime as well as how the police deals with these. However, it is not defined what 'unsafe places' are. The city aims for always integrating safety elements when city development projects and renovations of public space and buildings. These are good lightning, no obstacles behind which people can hide and social control. The 'state of the city' is continuously monitored.

The final part is focused on the fire brigade – also part of the 'physical safety' domain where the quality of their services is monitored. It is stated that the city will approach what they call the 'societal safety' (not defined) in a proactive manner, mainly by making risk analyses. Further it is stressed that Antwerp wants to come to performant information management by putting effort into increasing the operational and administrative information provision.

In other parts of the coalition agreement, what in this thesis is called 'societal safety' can be found - however the topics are not presented as safety topics. It is stressed that Antwerp is a city community existing of a rich diversity of cultures, life philosophies, neighbourhoods and streets, associations, companies, families and individuals. That everyone is included, no matter what skin colour, belief, sexual orientation or handicap. The actions are mainly directed at an intensive integration policy. Other societal safety elements that can be found in the coalition agreement are the importance of the employment rate with regards to poverty and social exclusion, civil participation in local politics, social cohesion and community building, the space that should be there for religious experience – but not for religious or philosophical fundamentalism, and the social health plans.

The 2013-2017 zonal safety plan

In every police zone, the priorities are set by the mayor, the public prosecutor and the police, possibly supplemented by other parties (Interview LPA. Appendix 1I). The zonal

safety plan is partly based on the national safety plan, but local interpretation can also take shape. The ultimately responsibility lies with both the public prosecutor (the judicial authorities) and the mayor (the administrative government), however the police give the content to the plan and actually write it. The zonal safety plan of Antwerp has different focal points: externally – what criminal phenomena will be priorities – and internally – how will you adapt your organization to those priorities and formalize it?

In the preface of the zonal safety plan it is stated “safety is inherently connected to quality of life” (Lokale Politie Antwerpen, 2014: 6), and that every citizen of Antwerp has the right to feel safe in his or her city. Safety is more than just a good working police and judiciary; “education, employment, poverty reduction, housing and integration play, in addition to police and judiciary, an undeniably important role” (Ibid). To fight the criminality in society, it is argued that the building blocks of the society should be modified – starting with investing in the youth and their families.

The preface states that on the domain of safety and liveability, the following phenomena are considered a priority: ‘house burglary’, ‘aggressive thefts and street violence’, ‘drug trafficking and related social disorder/nuisance’, ‘domestic violence’, ‘traffic safety- and liveability’ and ‘social disorder/nuisance created by trade matters, dirt, going out, housing and claim behaviour in public spaces’ (Ibid: 7). Later paragraphs state that for every part of the city the main safety issues are: ‘criminality’, ‘traffic’, ‘social disorder/nuisance’ and ‘public order’ (Ibid: 27-43). An image of the safety and liveability is given, which will be further assessed later on in the part on indicators.

Finally, in the interview with the police chief, the following safety topics were also addressed: ‘cyber-crime’, ‘terrorism’, ‘general criminality’, ‘traffic safety’, ‘social disorder/nuisance’, ‘urban planning’ and ‘illegal dumping’. With reference to the social/physical/societal/digital safety dimensions, it was stated that for societal safety aspects, other services are responsible, with which the police cooperates. These are very broad; “Guide the people who just came in, shelter for other people... - that's a hatch beside the police” (Interview LPA).

4.2.2.2.3. Indicators of ‘safe cities’ in Antwerp

4.2.2.2.3.1. Current practice of safety measurement in Antwerp

Regarding the current practice of safety measurement, first the 2013-2017 zonal safety plan of the Antwerp police will be discussed. This includes statistical measurement of safety issues in Antwerp. Also, the public dashboard *Stad in cijfers* (city in numbers) that

includes the domain ‘social disorder/nuisance and crime’ will be assessed. Finally, other relevant measurements of the city’s research department are discussed.

The 2013-2017 zonal safety plan

The zonal safety plan gives a description of the safety and liveability in Antwerp based on objective numbers supplemented with information from the territorial departments, local investigation, federal judicial police, the national safety image and subjective information from the safety monitor and local safety survey (Lokale Politie Antwerpen, 2014: 43). The types of crime that are listed can be found below in table 11.

Priorities	Other crimes				
Theft from a vehicle	Vandalism	Other burglaries	Shopping theft	Reassessment	Theft motorcycle
Handbag robbery	Threats	Car theft	Noise pollution	House theft	Drug preparation
House burglary	Illegal dumping	Forbidden weapons	Theft moped	Rape	Murder
Theft with use / display weapon	Intentional assault	Obligation	Abuse of trust	Fraud	Naming / Falsification
Theft with violence	Pickpocketing	Forgery	Intentional fire foundation	Deadlock	Other crimes against public loyalty
Drug use/possession	Bicycle theft	Absconding	Assault of Honesty	Fencing	Use theft
Drug trafficking	Burglaries in commercial affairs	Prostitution	Exhibitionism	Racism	

Table 11: Crime numbers in the 2013-2017 zonal safety plan (Lokale Politie Antwerpen, 2014)

The ‘subjective data’ mainly derive from the Local Safety Survey, a ranking of phenomena about which citizens are most concerned and where the police should work on. The ranking was made by means of the parameters ‘frequency’, ‘perceived severity of the issue’ and ‘evaluation of the police approach’. The last Local Safety Survey that could be found, was conducted in 2012 – the one presented in the zonal safety plan. The zonal safety plan states that there used to be a full safety monitor, but that is no longer the case - as was discussed in some of the interviews as well. However in the A-monitor, a general survey research, some of the questions are concerned with the aspect of safety in the city. The A-monitor has been conducted annually since 2009 and “contains indicators that are measured permanently and on the other hand, indicators that are included in the survey ad hoc” (Stad Antwerpen, 2017). One of the components of

the survey is ‘safe city’, and in table 12, the indicators that were measured based on the questions asked to the citizens in 2015 are presented.

Subjective safety indicator	Sub-indicators
Feeling of insecurity	Feeling of insecurity in the city
	Feeling of insecurity in the own neighbourhood
Perceived victimization	Perceived risk of traffic accident
	Perceived risk of being harassed on the street
	Perceived risk of house burglary
	Perceived risk of theft on the streets
Experienced social disorder/nuisance in the last month	Social disorder/nuisance from unadapted speed in traffic
	Social disorder/nuisance from aggressive traffic behaviour
	Social disorder/nuisance from improper behaviour by cyclists
	Social disorder/nuisance from groups of young people
	Social disorder/nuisance from being harassed on the streets
	Social disorder/nuisance from physical violence and threats
	Social disorder/nuisance related to drug and alcohol abuse

Table 12: Subjective safety indicators from the 2015 A-monitor (Stad Antwerpen, 2017)

In addition to the crime numbers and the subjective safety data, the zonal safety plan also shows the motivated choice of priorities of the department heads of the police. These were ‘crimes in the diamonds sector’, ‘illegal dumping and waste’, ‘intentional assault and injuries’, ‘house burglaries’, ‘vandalism’, ‘violent crimes’ (‘theft with violence’, ‘handbag robbery’, ‘theft with the use or display of a weapon’), ‘shopping theft and pickpocketing’, ‘traffic’, ‘youth criminality and social disorder/nuisance’, ‘drug trafficking and social disorder/nuisance’ and ‘theft from vehicle’. Finally, the advice of the local investigation department and the federal judicial police was obtained and presented in the zonal safety plan. It addresses the aspects of threats, vulnerability and new trends concerning five research phenomena, ‘human trafficking and prostitution’, ‘drug trafficking’, ‘theft with violence’, ‘theft with use or display of a weapon’ and ‘theft in homes’.

Stad in Cijfers

Since the current legislation, the City of Antwerp communicates about crime numbers online with a public database *Stad in Cijfers*: “for all databases we unlock, we try to give

numbers on statistical sector level” (Interview KAV/SD, Appendix 1F). There is a general crime report, and a work report that gives an overview. Every month, a number of citizens get a survey with questions concerning their (safety) perception. In combination with the actual police declarations, this gives an honest and real image of what is going on in which neighbourhood - according to the director of the safety policy department (Appendix 1G). He points out that there is also the issue of willingness to report, which makes some crime numbers not exactly correct. However, by means of statistics, much can be done, comparing different years (Ibid).

In the *Stad in Cijfers* database there is one general theme that applies to urban safety: ‘social disorder/nuisance and crime’. It includes a criminality report with statistics on priorities of the zonal safety plan and numbers on the number of illegal dumping reports. With respect to the physical safety domain, two indicators can be found under the part ‘environment’: ‘percentage of citizens/surface area exposed to nitrogen dioxide above EU standard’ and ‘number of citizens/part of the surface area that was exposed to noise level ≥ 65 dB”. Also, some possible societal safety indicators can be found in the parts ‘prosperity and poverty’ and ‘education’.

Other measurements by the City research department

In the interview conducted with the cabinet advisor safety and the head of the research department, it was emphasized that their research not only consists of measuring indicators. The indicators give flashing lights, qualitative research leads to context information (Appendix 1F). As part of policy-making, the research department searches for as much information as possible, largely on a general statistic level. A neighbourhood police officer can look into these numbers, and see a more extensive report through intranet (Ibid). The research department also carry out analyses on incidents, without an explicit policy question. For example, when in a certain neighbourhood there is an increase in burglaries, the police capacity will be adjusted (Ibid). There are indicators, but also additional research. Generic analyses of the subjective safety feelings: which one increases, decreases, old/young – which is quite complex. For some phenomena it could also be that the numbers are difficult to interpret; for instance, when more police capacity is put on drug criminality, and the numbers are growing – it can be interpreted in two ways. The question of victimization has shown which phenomena are being declared and which are not. Usually, offenses that are more severe are reported to the police more frequently. Combined with measuring continuously over the years, you

could also zoom in on geographic level enough to say something on neighbourhood level.

4.2.2.2.3.2. Experts' view on the indicators for 'safe cities'

According to the cabinet advisor on safety, in an ideal world you must work on the different dimensions – social, physical, societal and digital safety - as evenly as possible (Interview KAV/SD, Appendix 1F). However, the public crime numbers are a very one-dimensional representation of safety. He argued that spatial safety, as addressed in the coalition agreement, should always be measured well in case of large constructions, also regarding infrastructure. An example is that if you provide a lot of greenery, it may affect whether it is an unsafe place in the dark or not (Ibid). The safety adviser believes that the most benefits to safety can therefore be booked outside of the classical authority of the mayor (public order and safety): on 'spatial planning', as well as by working together with the urban administration on 'social issues', such as responding faster on certain demographic trends, and on 'education' (Ibid). According to the KAV, their work is a success if they have statistically significant better numbers, when they can break of criminal careers. He further argues that politics also determine when the city or an aspect of it can be labelled safe.

The police chief stated that to determine whether safety in the city is decreasing or increasing, general criminality is measured periodically on the basis of crime numbers. "Every year we publish the figures to the city council and [...] the general public. These [...] include the number of house burglars, thefts with violence... That is a very hard form of measurement, very concrete. These are some important benchmarks." (Interview LPA, Appendix 1I). He stated that it would be better to compare these numbers with the rising population, but that is not done. The police chief also points out that people in society are increasingly steered by the media, which can increase or decrease their safety perceptions. The safety monitor that was carried out in the past was a way to measure those safety perceptions, however "measuring something subjectively is more difficult than objectively - you have to do it nationally so that you have calibration points with your environment" (Ibid). There is also the perception side of the story. It is very important how you communicate about safety – when you expand everything as a major safety issue, people will feel it that way; "So how the government communicates about safety is very important – sometimes even more important than real facts" (Ibid). To find out how safe citizens feel and why, there are consultations with citizens on police and

municipal level, ‘but it is never quantified anywhere - nor is it used as a measuring instrument. [...] You mainly use it to influence the perception’ (Ibid). With regards to new phenomena such as ‘cybercrime’ and ‘terrorism’ the police chief stated that there are difficulties concerning the measurements and quantification. Cybercrime is part of the classic crime numbers of the police in Antwerp, however there is a big dark number. In the case of terrorism, there is criminality, but there are also possible risks that are perceived – without any criminal activity happened, which makes measuring difficult. The interviewee stated that they do monitor this issue, but never use the information to communicate externally. Internal indications are available, but those are not used to determine whether the city is more or less safe.

The interview with the disaster coordinator of the City of Antwerp showed that an accurate set of indicators for (physical) safety in the city is not available (Appendix 1H). Concerning subjective safety feelings, the interviewee stated that measurement or monitoring is not done enough – at least not in objective criteria. The RA and his colleagues do try to build their knowledge from practical experiences, and from what the people have in mind. Also the interviewee stated that people are less self-reliant, and that they notice that they have to organize themselves on that and make emergency plans – which he finds the most effective way of monitoring. They use the digital reports for those matters, also for example when looking at house fires. Where did house fires occur most frequently in the past five years? He then puts that information on the social cart and can find some correlations. Other indicators they use are ‘fire risk’, and regarding water social disorder/nuisance, they try to find out whether there is a structural problem or not, and see how many of the incidents happen on a certain address. The RA also uses the information of the *Stad in cijfers*, for example when it concerns the issue of self-reliance. He further stated: “I find it very difficult to define objectively measurable criteria in my industry. I’m just looking at my achievements; when do you act well as an emergency auxiliary officer?” (Ibid). But the RA does not have hard performance criteria either. He usually looks at how their response to an incident went. For many types of risks, no actual incidents happen – however he does not believe that you can then measure performance by looking at emergency plans. “I do not think that is an indicator, that the number of meters of paper you have is a good measure for your preparation” (Ibid). The interviewee further argues that they mostly need a good registration of their incidents – the types, but also the consequences for the people, environment, and

financial consequences. Something should be done with the part of ‘damage’: one fire is not the other (Ibid).

4.2.2.2.4. Conclusion

The analysis of the case Antwerp first showed that not one definition of a ‘safe city’ is used. It depends on what perspective you have, and that there is always unsafety in a city. However, important aspects of a safe city that were mentioned were inclusiveness, the safety perception of citizens and the absence of no-go areas. The coalition agreement in Antwerp is mainly focused on traditional criminality and violence, social disorder/nuisance and drugs issues belonging to the responsibility of the police. It underscores the importance of spatial safety and other elements of physical safety of the city, but the dimensions ‘digital safety’ and ‘societal safety’ are not found in the chapter ‘safe city’ of the agreement

With respect to the second research question, how the concept safe cities can be operationalized in indicators, an overview of the indicators used in Antwerp is made as well. The indicators in table 13 are mostly deducted from the zonal safety plan and are predominantly quantitative and subjective or objective of nature. Whereas there is an extensive list of crimes that are measured that fall under the social safety dimension and there are some indicators for the physical safety dimension found, it is striking that there are no indicators for the digital and societal safety dimension. However, there are safety topics indicated that do belong to those dimensions. For the social and physical safety dimensions, topics were mentioned of which no indicators were found, these all are also presented in the table (*).

First, regarding social safety, for the topic ‘organized crime’ it can be explained why no indicators are found: in the interview it was told that this safety issue is still very new in Antwerp. Moreover, it can be hard to measure organized crime, because it is mostly hidden. However, it should also be noted that Antwerp does have an indicator for drug trafficking, which is a form of organized crime, and marked as very urgent in Antwerp. Second, whereas in given priorities and discussed safety topics there was an emphasis on certain risk groups, in the numbers there are no distinctions made between certain groups. The crime statistics only show the total number of types of crime. It is possible that for internal use, the city and/or police does keep track of groups such as ‘youth’, ‘organized gangs’ or ‘homeless people’. It is also striking that whereas the indicators are

sometimes very precise, making distinctions between every type of crime without aggregation, for other types of crime – sometimes a priority – there is no distinct indicator found, such as for domestic violence. Secondly, the indicators of physical safety in Antwerp concern issues of fire safety, social disorder/nuisance and traffic safety, which is actually questioned by the disaster coordinator to belong to the ‘safe cities’ concept. For matters of spatial safety, a main topic in the coalition agreement within ‘safe city’, no indicators were found. Whereas the coalition agreement reads that the ‘state of the city’ is continuously monitored, it is unclear in what way Antwerp monitors those elements of urban planning, such as good lightning. Third, regarding digital safety, cyber-crime was found to be a difficult issue, as the responsibility for it is not local, however the effect of it may be. As it has no place in the local safety policy, it is explainable that there are also no indicators used. Fourth, aspects of societal safety seem important in Antwerp based on the interviews and documents, but they are not represented in the safety statistics. It is possible that there are indicators for these issues in other documents, as the coalition agreement also addressed matters of inclusiveness and diversity – however these are not included in the zonal safety plan. Finally, it should be noted that ‘terrorism’ was a topic touched upon multiple times; the police official however stated that whereas they do monitor the issue, they do not communicate about it, and also do not use the indicators to determine whether the city is safe. It is therefore also unclear in which fields this safety topic plays a role in Antwerp – it could be in all of the four dimensions.

In sum, if the concept ‘safe cities’ would be operationalized in indicators based on the list in table 13, thus on the practice in Antwerp, it would be a quite narrow understanding of the concept – only focused on traditional criminality and safety perceptions. However, in the interviews and documents analysed, many other safety topics were mentioned. These are not (yet) expressed in indicators, but give an additional image of what issues of urban safety Antwerp deals with and finds important.

Topics	Objective indicators (number of registered crimes)	Subjective indicators (perceived/experienced)	Performance indicators	Qualitative indicators
SOCIAL				
Drugs	Drug use/possession Drug trafficking Drug production			
Burglary	Home burglaries Commercial burglaries Other burglaries	P risk of house burglary		
(Aggressive) theft	Thefts with the use or display of a weapon Thefts with violence Thefts from vehicle Handbag robberies Picket pocketing Shoplifting Bicycle theft Car theft Moped theft Single or ordinary theft	P risk of theft on the streets		
Social disorder/nuisance	Noise pollution	E from unadapted speed in traffic E from aggressive traffic behaviour E from improper behaviour by cyclists E from groups of young people E from being harassed on the streets E from physical violence and threats E from related to drug and alcohol abuse		
Sexual/street intimidation/offenses	Rape Prostitution	P risk of being harassed in the streets		
Violence	Intentional assault Killing			
Safety perception		Feeling of insecurity in the city Feeling of insecurity in the own neighbourhood		
Other crimes	Threatenings Scams Fines			

		Forbidden weapons Forgery 'Flessentrekkerij' Abuse of trust Insult Arson Assault of honesty Deceit False currency Exhibitionism Healing Racism Counterfeiting/forgery Other crimes against public loyalty 'Gebruiksdiefstal'			
*	Organized crime/gangs				
*	Criminal family networks				
	Malafide traders, illegal economy and fraudulent business				
*	Street violence				
*	Domestic violence				
*	Social disorder/nuisance created by trade matters, dirt, going out, housing and claim behaviour in public spaces				
*	Youth social disorder/nuisance/criminality				
*	Break off criminal careers				
*	Human trafficking				
*	Homeless people				
	General	Safety in public transit and pre-metro stations		Absence of no-go areas for police	Qualitative research
PHYSICAL					

	Traffic safety	Injury accidents (heavy/light/deathly/total) Total victims	P risk of traffic incident		
	Fire safety	Fire risk			
	Vandalism	Illegal dumping Vandalism			
	Water social disorder/nuisance	Number of incidents on the same address			
*	Spatial safety/urban planning				
	General	Good registration of incidents (including consequences people/environment/finance)		Response to an incident	
DIGITAL					
*	Cyber-crime				
SOCIETAL					
*	(Counter-) radicalization				
*	Reducing terrorist threat				
*	Liveability				
*	Accommodation newcomers				

Table 13: Operationalization 'safe cities' in indicators based on the Antwerp case

4.2.2.1. Frankfurt

4.2.2.3.1. Contextual factors

As done with regards to the other cases, before addressing the perception on (indicators of) ‘safe cities’ in Frankfurt am Main (Frankfurt), the context of the city will first be briefly discussed. As for Frankfurt the number – and quality – of the sources was quite limited, it will be less comprehensive than the other cases. However, an attempt has been made to grasp the most important elements.

4.2.2.3.1.1. The city Frankfurt am Main

Frankfurt am Main is located in the *Länder* (state) Hessen, in western Germany along the Main River (Website Encyclopaedia Britannica, 2017). It is the fifth largest city in Germany, and the largest in Hessen, with 732.688 inhabitants (Statistisches Bundesamt, 2015). Until World War II, Frankfurt’s Old Town was the largest medieval city to still be intact in Germany, but the old town was mostly destroyed by Allied bombings in 1944 (Website Encyclopaedia Britannica, 2017). The décor of the city thereafter changed; the rebuilding after the bombing included mostly placing multi-storey office buildings and other modern structures. The city now is a leading commercial, financial and high-technology centre in Germany. It is the home of the European Union’s central bank, of many German banks, and of other global and European corporate headquarters. An important stock exchange which was established in 1585 is located in the city (Website Encyclopaedia Britannica, 2017).

Frankfurt is one of the five independent district-free cities in Hessen; therefore it has territorial sovereignty within its defined city limits. The citizens of Frankfurt and EU citizens residing in Frankfurt directly elect the Lord Mayor, the magistrate (the government) is elected by the members of the city council (Website Frankfurt am Main, 2017). Also there are 16 local councils in Frankfurt, the district parliaments, playing an intermediary role between the citizens and the city council. The current Lord Mayor, standing on the head of the magistrate, belongs to the social-democratic party, the SPD. However, the CDU, the Christen Democrats, always has been the leading party in Frankfurt, with even an absolute majority of seats in the city council from 1975-1984 (Gabriel & Thaidigsmann, 2000: 238). After the elections in 2016, the CDU and SPD now both hold 22 seats in the city council (Website Frankfurt am Main, 2017).

4.2.2.3.1.2. Governance of safety structure in Frankfurt am Main

In Germany, the 16 *Länder* are the dominant polity level regarding security issues (Aden,

2004; Aden, Maguer & Stephenson, 2004; Busch, Funk et al., 1985; in Aden & De Pauw, 2014: 16), which is, according to Aden & De Pauw (2014: 16) due to the situation in Germany when occupied by the Allied Forces after the second World War. Because the Allied Forces wanted to prevent Germany becoming a centralized authoritarian state again, the 16 *Länder* got to enjoy a high level of autonomy in organizing and steering their security agencies, as is still the case today. However, for Frankfurt, being one of the independent district-free cities, the situation is slightly different. In the 2011 position paper *Safety and order in the city* of the German Association of Cities it is stated that ensuring the safety of the citizens in German cities against violence and crime is a task of the *Länder*. It is first and foremost a task of the police and the judiciary, assigned by the federal government and the *Länder* – as they have the necessary instruments. However in practice, the cities play an important role.

"The prevention of violence and crime is also perceived as a task of the cities. Whether it is about youth, violence or street crime, or simply uncleanliness and neglect in the streets, safety and order in a city determine the quality of life and living for the citizens. They are important for the development of the city centres and are of great importance for the local economy" (Deutscher Städtetag, 2011: 4).

Subsequently, it is stated by the German Association of Cities that "ensuring safety and order is a primary public task shared by the *Länder* police and municipal authorities in our cities" (Deutscher Städtetag, 2011: 6). The main actors in Frankfurt are the *Länder* police and the city's governmental organizations (Deutscher Städtetag, 2011; Frevel, 2013: 361). In the following paragraphs, both are further discussed by first explaining the police system in Germany and then introducing the Crime Prevention Council (CPC), the administrative network organization responsible for the prevention of crime. Asking the head of the CPC whether there is another department or organization that is concerned with the safety policy in Frankfurt, the answer was no (Interview CPC, Appendix 1J). Therefore, below only the Police and the CPC are introduced.

The German police system: Landespolizei Hessen and Polizeipräsident Frankfurt am Main
Germany has a semi-decentralised police system, which includes 16 autonomous *Länder* police forces – the *Landespolizei*. Further, on the federal level there are two police forces: the *Bundespolizei*, the Federal Police, and the *Bundeskriminalamt*, the Federal Criminal Police Office. There are a number of other *Länder* and federal agencies involved in safety issues,

such as the federal customs administrations (Aden & De Pauw, 2014: 18). Local policing however is the exclusive task of the *Landespolizei*, under the supervision of the *Länder* government.

The *Landespolizei* of the *Länder* Hessen falls under the direction of the Ministry of the Interior and Sport of Hessen, and is divided into four central bodies and seven local police departments that are responsible for their own areas (Polizei Hessen, 2015). One of these seven police departments is the *Polizeipräsidium* Frankfurt am Main (PFaM), which is thus not a municipal police. It is also paid by the *Länder* Hessen, and by order of the *Länder* Hessen it is responsible for the city of Frankfurt, where the police headquarters is also located. According to the head of the Police' operational department, the police have two core tasks:

“On the one hand we are responsible for the criminal prosecution as part of which we have to solve cases and to arrest suspects. On the other hand we have to protect against threats, like riots or hostage-takings. If, in a certain case, there is a conflict between the protection against threats and the prosecution, the protection always has priority” (Interview PFaM, Appendix 1K).

Besides the PFaM, there is also a municipal police in place, which has its own area of responsibility. This includes for example the enforcement of communal laws in cases of violations of the industrial code, or in cases of pollution at certain places (Ibid). There are junctures between the PFaM and the municipal police, such as regarding traffic-related issues, or the office of public order. The police organizations together carry out inspections, such as in brothels, in which each authority takes on its duties (Ibid). The responsibility for crisis prevention and disaster management lies with the fire brigade in case of major damage or accidents, and in other cases with the PFaM (Ibid).

Crime Prevention Council

Next to the collaboration of the police, security firms and local authorities in the fields of presence on the streets, surveillance and control, since the 1990s, cooperation in Crime Prevention Councils and Public Order Partnerships has gained increased importance in Germany (Frevel, 2013: 362). These partnerships are suggested or requested by the Ministry of Interior. The city government and local police force, being the main players, establish partnerships for urban safety at their own discretion (Ibid). In Frankfurt, the Crime

Prevention Council (CPC) was established in 1996 and was used to be led by the head of the local government, the mayor – however now it is led by the councillor in charge of safety (Präventionsrat Frankfurt am Main, 2016). The CPC in Frankfurt is working on prevention of crime in a very broad sense of the word:

“It is not just about safety in its physical sense, like the prevention of burglary. Prevention starts way ahead of such situations and includes social prevention with respect to housing construction, the building of sporting grounds and play grounds, the disposability of day-care centres and a good schooling infrastructure.” (Interview CPC, Appendix 1J).

The city council selects several issues and approach these in different working groups: focused on women, school, gays and lesbians, general safety, sports and violence and urban planning and safety. The working groups primarily consist of representatives of the different organizational divisions of the city of Frankfurt. The head of the department for order and security, the chief of police, the head of the districts attorney’s office, the heads of the city departments of social affairs, the elderly, youth, integration, environment, healthcare, education and women. The working groups function as a source of expertise with regards to the different issues that are tackled by the CPC (Ibid). The CPC also holds regional councils that involve civil society represented by persons from schools, churches and associations. “These regional councils work as sensors and can pass on impulses from the ground level to the top of the structure” (Ibid). The access to these regional councils is institutionalized, which means that only a representative of a single school has access to the council and an individual person has not. Finally, the CPC also has employees who work on the issues full-time (Ibid).

4.2.2.3.2. Definition of ‘safe cities’ in Frankfurt am Main

4.2.2.3.2.1. Definitions used and proposed

In the interview at the *Polizeipräsidum* Frankfurt, it became clear that the police do not have a definition for ‘safe cities’ that determines a certain level of safety. It was stated that there is no definition for ‘safe cities’ because parameters are changing too quickly. The head of the CPC stated that, to his knowledge, the municipality does not have a guideline or something comparable in which a definition for a safe city could be found either (Appendix 1J). The expert himself also found it hard to come up with a definition, but did believe that there are

several cornerstones of a safe city. He mainly emphasized that a safe city is a social city, “since there is less necessity for criminal activities” (Interview CPC, Appendix 1J). The CPC head continued that the social environment of a city has to be designed in a certain way and that specific parameters of public order have to be fulfilled, such as cleanliness. Also, a well-developed society is needed, in which people care about each other. By the means of detailed structures, detailed social control can be facilitated, which can be helpful regarding preventive matters. “It is important that people care about each other, in this manner a personal and common togetherness can evolve” (Ibid).

4.2.2.3.2.2. Most important themes

From the interviews conducted at the *Polizeipräsident* Frankfurt am Main and the Crime Prevention Council, it appeared that there was no overarching safety policy for the city of Frankfurt. Therefore, policy documents that could be analysed were limited. However, from the coalition agreement of the city, the governmental priorities regarding safety can be deduced – which will be done first in this paragraph. Also, with regard to policing priorities, an annual report of the *Landespolizei* Hessen was found from which topics could be drawn out. Although the priorities of the Frankfurt department may differ somewhat of that of the *Landespolizei*, it is assumed that it largely concurs, and therefore it will be discussed in this paragraph. Finally, the perspective of the CPC with regard to the safety topics is assessed.

The 2016-2021-coalition agreement

In the 2016-2021 coalition agreement of the Christen Democrats, the Social Democrats and the Green Party, it is stated that the rapidly growing city of Frankfurt is faced with special challenges (CDU, SPD & Die Grünen, 2016). The governing parties want to ensure that “Frankfurt remains an economically strong city and that this power will continue to ensure social peace and the participation of all citizens in our city. We want to make the growth of our city just, socially and ecologically” (CDU, SPD & Die Grünen, 2016: 6). The most important investment is in ‘education’. Other issues that are mentioned under the heading *Meeting the challenges of the growing city* are ‘housing’ and ‘climate protection’. It seems that the emphasis is on factors of ‘societal safety’; other dimensions of safety are not mentioned in this part. However, the agreement is further divided into chapters that refer to certain topics, among which safety is one.

The chapter on safety begins with a statement regarding ‘safety and prevention’, in which it is argued that “safety is one of the basic human needs and is an indispensable

prerequisite for a harmonious coexistence in an international city like Frankfurt am Main, characterized by diversity and the coexistence of people from different cultures and social strata” (CDU, SPD & Die Grünen, 2016: 52). From what follows a few safety subjects can be deducted: ‘prevention and reconnaissance of criminal offenses’, ‘cleanliness and order in public space’, ‘subjective sense of security of the people’, ‘urban development of fear’, ‘social security and an atmosphere of general respect, consideration and helpfulness’. The second part is about the municipal police, which discusses issues of equipment and deployment. The third part centres on the Frankfurt Voluntary Police Service, which is argued to be an important contribution to improving safety in the city. In the fourth part, fire and catastrophe protection is addressed.

“Frankfurt am Main is a major road and rail traffic hub, with its airport, its function as an international economic metropolis with trade fair, banking, processing and chemical industries, as well as its high-rise residential development, which is unique in Germany. Frankfurt's professional and volunteer fire brigades are able to meet these challenges thanks to their exceptional performance” (Ibid: 53).

In addition to this ‘traffic’ and ‘industrial’ safety aspects, the part also extensively addresses issues regarding ‘fire protection’. In the fifth paragraph, the focus is again on prevention, discussing the ‘Gewalt-Sehen-Helfen’ initiative, and how the 16 regional councils are making an important contribution to the fight against causes of crime and the promotion of social peace in the city districts. Subjects that are mentioned are: ‘safety of seniors’, ‘burglary’, ‘problem areas (parks/green)’, ‘youth emergency help’, ‘youth addiction prevention’, ‘juvenile criminality’ and ‘(de) radicalization and Islamic recruitment’. The next paragraph focusses on improvement of the ‘quality of the station’, and also addresses the topic ‘organized begging’. In the sixth part, the use of modern video technology is discussed, with respect to the ‘general crime situation’ and the high threat posed by ‘Islamic terrorism’. Seventh mentioned is responsible handling of gambling halls and gambling. Experiences show that the geographic accumulation of gambling halls can set a downward dynamic capable of sustainably damaging a neighbourhood. Next is clean Frankfurt, as ‘cleanliness of the public space’ enhances “the quality of life and the friendliness of our city, and the subjective sense of security of the people” (Ibid: 55). The ninth paragraph focuses on ‘consumer protection’, arguing that regular inspections in the gastronomic establishments serve consumer protection. The good quality of the restaurants then in turn contributes to the

‘quality of life for the citizens’, as well as it is a criterion for the ‘successful business and tourism location’. Finally, the policy objective of improvement of the welcome culture is addressed, which is directed at ‘attracting (inter) national professionals to Frankfurt’ and bind them to the city and the region (Ibid).

The 2015 annual report of the Hessen Länder police

The 2015 annual report – the most recent one to be found – of the Hessen *Länder* police, centres on ‘Police Crime and Traffic Prevention’, and includes different prevention topics. In the interview with three officials of the *Polizeipräsident* Frankfurt am Main, almost no additional themes were mentioned, as they also mostly focused on prevention. The first chapter of the annual report, ‘general developments’, begins with the statement that “changes in the population structure and technical developments have an effect on criminal forms and require a correspondingly tailored prevention work of the police” (Hessisches Landeskriminalamt, 2015: 3). It is pointed out that in 2015 prevention measures of the police were mainly focused on ‘house burglary’, ‘traffic safety for the 65+ generation’, ‘youth criminality’ and ‘immigration and housing of refugees’. The report further consists of a chapter with the different prevention areas, an evaluation, a forecast and outlook for 2016, and finally a chapter concerned with crime numbers - which will be assessed later on with regards to the indicators of safe cities measured in Frankfurt.

The prevention areas that are discussed in the annual report are the following: ‘youth criminality’, ‘traffic prevention’, ‘criminal police advice’ (directed at ‘house burglary’, ‘terrorist attacks’, and ‘secure refugee shelters’), ‘protection of (domestic violence) victims’, ‘urban planning’, ‘cybercrime’, ‘migration’ (dialogue with Muslims/migrants, crisis intervention and mediation of preventive measures), ‘(network against) violence’ (including ‘vengeance’, ‘mobbing’, ‘sexualized violence’). The final prevention area is ‘voluntary police service’, which is found a useful measure to increase safety for the citizens (Ibid).

Main topics of the Crime Prevention Council

In the interview with the head of the CPC, the following safety topics were mentioned: ‘safety of elderly people’, ‘cleanliness’, ‘social cohesion and control’, ‘burglary’, ‘safety perception’, ‘self-protection’, ‘violence perception’, ‘drug addicts’ and ‘(online) hate speech’ (Appendix 1J). Also, with regard to prevention, ‘safe urban planning’, ‘a good schooling infrastructure’ were mentioned. And, as a follow-up to the interview, the expert was asked what he saw as the most important safety issues in Frankfurt. The answer he gave was

(without ranking): ‘Islamism’, ‘extremism’, ‘drug consumption’ (in general and in public space, and also concerning alcohol), ‘neglect of public space’ and ‘house burglary’ (Ibid). On the website of the CPC, which also promotes ‘Gewalt Sehen Helfen’, a joint project of the CPC and the police there are also some prevention themes appointed. First is ‘everyday crime’, including the topics ‘bicycle theft’, ‘vehicle burglary and theft’, ‘senior security’, ‘skimming’, ‘trick and pickpocketing’, ‘house burglary’ and ‘phone theft’. Second is the theme ‘violence’, split up in ‘violence against homosexuals and lesbians’, ‘domestic violence’ and ‘sports and violence’, the latter directed at what sports can do *against* violence (Website Prevention Council/Gewalt Sehen Helfen, 2017). The third theme is ‘youth and school’, which consists of several projects aimed at preventing violence/helping youth in case of ‘cyber bullying’ or ‘emergencies’. The fourth theme regards the ‘public space’ and is aimed at ‘city planning and safety’, ‘safety in public transport’ and ‘(illegal) graffiti’. The fifth theme addressed is ‘addiction’, with the subthemes ‘youth protection’, ‘gambling addiction’ and a campaign against ‘alcohol addiction’. Finally the theme ‘civil courage’ is given, which refers to their larger prevention project ‘Gewalt Sehen Helfen’ (Ibid).

4.2.2.3.3. Indicators of ‘safe cities’ in Frankfurt am Main

4.2.2.3.3.1. Current practice of safety measurement in Frankfurt am Main

Regarding the practice of safety measurement in Frankfurt, three documents were found. Two of them include crime statistics of the police: *Kriminalstatistik* of the *Polizeipräsidentum* Frankfurt am Main and the annual report of the *Landespolizei* Hessen. The other document presents the result of the safety perception in Frankfurt. In the following subparagraphs, the indicators that are used are shown.

Police numbers

The indicators that measure safety listed in the annual Frankfurt crime statistics can be found in table 14 (Polizeipräsidentum Frankfurt am Main, 2017). In the year reports of the *Landespolizei* Hessen, under the title ‘key figures’, performance numbers are shown, such as ‘number of employees working exclusively in the field of prevention’ and ‘number of prevention seminars and meetings held’ and ‘number of participants in those prevention seminars and meetings’.

Type of crime/topic indicator	Sub-indicators
Murder and manslaughter	Murder

	Manslaughter
Crimes	Robbery
	Street robbery
	Physical injury
Sexual offences	Rape
	Sexual abuse
	Sexual harassment
Theft	Pocket and trick theft
	Theft from/out motor vehicle
	Bicycle theft
	House burglary
Cyber crime	Credit
	Pornography
	Data change/computer sabotage
	Data espionage
	Economic crime
	Computer fraud
	Tax fraud
	Other
Youth crime	
Crime against the elderly	
Drug abuse	Number of violations of the law
	Illegal trade
Attacks against police	
Crimes by non-EU citizens	Capital and false papers
	Heavy theft
	Petty theft
	Crime
	Sexual offenses
	Murder
	Other crimes
Politically motivated crimes	Right extremist
	Left extremist
	Salafism/Islamism inspired
	Other protests
Frequency (cases/100.000 residents)	
Suspects	Male/female
	Non-German
	Place of residence
	Nationality
Victims	
Number of damage	

Table 14: Police numbers in Frankfurt am Main (Polizeipräsidum Frankfurt am Main, 2017)

Safety perception survey

Another practice in Frankfurt that involves measuring safety indicators is the safety perception survey, which is conducted by the municipal bureau of statistics every two years

(Interview CPC, Appendix 1J). In the survey, questions concerning the indicators listed below in table 15 are asked. In presenting the answers, differences between age groups and gender are shown.

Safety perception indicators
Satisfaction with public safety/protection against crime
Safety perception night time in city centre
Safety perception night time in living neighbourhood
Safety perception day time in city centre
Safety perception day time in living neighbourhood
Fear of crime
Places where people feel unsafe (station, city centre, main square etc.)

Table 15: Safety perception survey indicators (City of Frankfurt, 2013)

4.2.2.3.3.2. Experts' view on the indicators for 'safe cities'

Asking the head of the CPC what indicators he knows are being monitored and measured to determine whether the city is safe, he first refers to a survey that is conducted among voluntary traffic wardens (Appendix 1J). The information from these surveys has been collected and analysed. The interviewee further states that he would prefer a more academic approach, but that it would be very complex and costly (Interview CPC, Appendix 1J). He mainly refers to evaluations of CPC measures, which he thinks are always quite difficult. You need to document a certain status before the implementation of a certain measure and need to control the status after the implementation – while in most cases you have to react rapidly and find solutions quickly. “In such situations we act based on our experience or use measures which have already been successful. We take a rather pragmatic approach” (Ibid). He continues that in Frankfurt they know that the CPC's measures against burglary and the information they hand out yield positive results, as overall the number of burglary cases decreased rapidly within the city. Another example he gives regards the safety of the elderly. The CPC has trained specific safety advisors for elder people, which talk to the elderly directly in the neighbourhood and offer them support if necessary. The interviewee argues that an evaluation of these measures would not be worthwhile, as they can observe the positive results immediately (Ibid). This also holds for the implementation of many other measures with a low threshold, such as the installation of new and brighter traffic lights. “There is an immediate positive effect, which makes an evaluation unnecessary.” (Ibid). However, not everything in Frankfurt concerning safety is without evaluation. The interviewee also refers

to the survey on the perception of security within the city discussed above. “This survey shows that [...] Frankfurt made a very positive development in the recent years. Only the neighbourhood around the train station is subjectively perceived as unsecure. And yet statistically, the criminality in this area is not higher than in other neighbourhoods.” (Ibid).

Asking the interviewees of the PFaM what indicators for safety they use, they first refer to criminal statistics that are published every six months by the police. “This statistic offers an overview of the processes which take place in Hessen and also provides data on a low level of aggregation” (Interview PFaM, Appendix 1K). Also the PFaM uses ‘current situation reports’, offered by the internal department for analysis, which give an overview of the incidents that took place during the night. They have an accruing situation report that emerges during the day, and compile specific situation reports that focus on single issues such as drug abuse, pick pocketing and burglary (Ibid). The situation reports are not only a result of accumulated statistics, but are also based on concrete experience-based knowledge and information from police work.

“The situation reports consist of an operative part and of a part in which experience-based knowledge is added and analysed in detail. Everybody, who is in touch with the respective issue-area, receives the situation report. We analyse these situations together and develop counter-measures” (Ibid).

Experience-based knowledge is found to be a good indicator for a safe city, and refers to information such as: “Which kind of crimes are committed in which neighbourhood? What’s our success rate in solving cases in this area?” (Ibid). One of the interviewees emphasises that they have a tight schedule of meetings and that the face-to-face communication is very important in order to interpret numbers and facts. Due to the frequent personal exchange they are able to attain even more information, work out details and avoid mistakes.

For the police officials, the way that citizens perceive their safety is an important indicator for safety in the city (Ibid). Whether the city is under their control and whether they are able to access every part of the city is important as well. They emphasized that feedback of citizens that approach them with certain issues or criticize their behaviour in certain situations is very valuable. Finally, they stated that:

“We also have to differentiate between formal crimes and crimes which affect the safety within a city more directly. Regarding the issue of asylum, from my point of

view such a differentiation is not possible. With respect to burglary, it is the other way around. Of course, we are able to assess the number of cases and if the number decreases, the safety within the city is increased.” (Ibid).

4.2.2.3.4. Conclusion

In this case study, the concept of ‘safe cities’ was further explored in the context of Frankfurt am Main. It became apparent that in Frankfurt, the police and municipality use no definition for a ‘safe city’. It was however emphasized by the head of the Crime Prevention Council that a safe city is a social city, in which people care for each other and parameters of public order are fulfilled, such as cleanliness. With respect to answering the sub question of how ‘safe cities’ can be operationalized in indicators, in table 16 on the next pages, the indicators that are being used in Frankfurt to measure safety are presented. As in the other case studies, the types of indicators belonging to certain safety topics within the four dimensions are showed. An explanation of how to read the table will be given below.

First of all, as can be deduced from the ‘general’ category of social safety, it is apparent that Frankfurt emphasises distinction between groups – of victims, as well as suspects and motivations behind crimes. Thus in assessing safety in Frankfurt, not only developments of criminality in general are being monitored but also the increase or decrease of threats from/to certain groups. Many of the ‘traditional’ crimes are also represented in the table by measuring the number of offenses, as well as subjective safety perception indicators are, including a ‘fear of crime’ indicator. Within the physical safety dimension, not many indicators were found. This however could be due partly to the focus and functions of the respondents that were interviewed. However it was stated that the PFaM also has responsibility regarding crisis prevention and disaster management, so it is surprising that only a traffic safety indicator was found in the police statistics. Also, the importance of cleanliness and urban planning was mentioned several times – yet no indicators that measure these elements were found. Regarding the digital safety dimension, it is striking that cybercrime is a topic well developed in terms of indicators, with different types of cybercrime that are tracked. Next, for the societal safety dimension, no quantitative objective or subjective indicators were found – while the emphasis in Frankfurt seems to lie on the prevention of crime and in working together with other policy departments (social, health etc.) and with local councils. One of the interviewees stated that work in this domain is mostly done on known experiences – therefore qualitative indicators are possibly favourable, although working more knowledge driven is an

ambition of the head of the prevention council. It is not clear whether for some of the societal topics – such as Islamism and extremism, social cohesion or migration - there possibly are indicators that are not public or in hands of other organizations and/or departments. Finally, it should be noted that in the table the qualitative indicator ‘information from working groups/ regional councils’ is included, although it is not sure what this information exactly entails and whether it is stored. However, the importance of these qualitative information sources was stressed multiple times and therefore it should be taken into account. The situation reports of the police also include experience-based knowledge (next to crime statistics) and can therefore also be seen as qualitative indicators for the safety situation in Frankfurt (on certain topics) – however it is also not known what kind of information it exactly is.

In sum, operationalizing the concept of ‘safe cities’ in indicators based on the ones that are measured in Frankfurt am Main, would be a combination of traditional criminal offenses in a city, together with the safety perceptions of citizens, the ability of the police to have control over and access to all areas in the city, traffic safety and cybercrime. However, many other safety aspects that lie within the realm of prevention – such as radicalization, safe urban planning and cleanliness of public space and an atmosphere of general respect, consideration and helpfulness – are found to be possibly even more important in the city of Frankfurt. These should therefore not be forgotten when assessing the safety of cities. Although indicators on these aspects are not included within the table, experience based knowledge is very important in the work of the organizations responsible for safety in Frankfurt. It is probably not possible for all of the safety topics to measure them with quantitative indicators, but it seems that there is room for exploration.

	Topics	Objective indicators	Subjective indicators	Qualitative indicators	Performance indicators
	SOCIAL				
	Murder and manslaughter	Murder Manslaughter			
	Crimes	Robbery Street robbery Physical injury			
	Domestic violence/ stalking	Number of cases of domestic violence			
	Sexual offences	Rape Sexual abuse Sexual harassment			
	Theft	Pocket and trick theft Theft from/out a motor vehicle Bicycle theft House burglary			
	Drug abuse	Number of violations of the law Illegal trade			
	Safety in public transport		Survey voluntary traffic wardens		
*	Prevention and reconnaissance of criminal offenses				
*	Organized begging				
*	Violence against homosexuals and lesbians				
*	(Illegal) graffiti				
*	Skimming				
*	(Online) hate speech				
	General	Youth crime Crime against the elderly Attacks against the police Crimes by non-EU citizens (.../.../...) Politically motivated crimes (.../.../...) Suspects (.../.../...) Victims	Satisfaction with public safety/protection against crime Safety perception night time in city centre Safety perception night time in living neighbourhood Safety perception day time in city centre Safety perception day time in living neighbourhood Fear of crime Places people feel unsafe (station, city centre, etc.)	Information from working groups/ regional councils	
	PHYSICAL				
	Traffic safety	Number of traffic accidents (fatal or slightly/seriously injured)			
*	Cleanliness and order in public space				
*	Industrial safety				
*	Fire safety				

*	Safe urban planning				
DIGITAL					
	Cybercrime	Credit Pornography Data change/computer sabotage Data espionage Economic crime Computer fraud Tax fraud Other			
*	Cyber bullying				
SOCIETAL					
*	Social security & atmosphere of general respect, consideration and helpfulness				
*	Youth emergency help & addiction prevention				
*	(De)radicalization and Islamic recruitment (Islamism & extremism)				
*	Consumer protection				
*	Quality of life citizens				
*	Successful business and tourism location				
*	Attractiveness city for (inter) national professionals				
*	Immigration and housing of refugees				
*	Migration				
*	Social cohesion and control				
*	(Drug) addiction				
*	Schooling infrastructure				
*	Civil courage				
General		Number of damage			

Table 16: Operationalization of ‘safe cities’ in indicators based on the Frankfurt case

4.2.3. Conclusion

To answer the second sub question of this thesis – *how can the concept ‘safe cities’ be operationalized in indicators* – the indicators used by two recent studies of The Economist and the Hague Centre for Strategic Studies were analysed, as well as the indicators that are used in three case studies. To have a complete understanding of what constitutes a safe city based on the different studies and cases, it was first assessed if and how the concept could be defined and what topics belong to urban safety. The results showed a very broad palette of safety topics, which are not all measured in the cities by means of indicators – or, at least, for some safety topics indicators are not included in the statistics that were found, nor were they mentioned by the interviewees. For other topics, it was indicated that they were difficult to measure, or that indicators were still developed. The research results also show differences between the different cities and studies, in terms of safety topics as well as indicators. However, it is not the objective of this thesis to do a comparative analysis between the (case) studies. Rather it is to unite all of the obtained information and come to a comprehensive overview of indicators that together form a ‘safe city’, and can be used to measure the safety situation of a city. Therefore, in table 17 presented on the next pages, the indicator lists from the case studies and the HCSS/Economist studies are combined - , which can be understood as an answer to the second sub question. An explanation of the table will be discussed below.

The operationalization of a ‘safe city’ is shown based on different levels; first, the concept is divided into the four dimensions that were established before – ‘social safety’, ‘physical safety’, ‘digital safety’ and ‘societal safety’. For every dimension, the main topics that were deducted from the case studies are listed, which gives a closer indication of what matters are important for a ‘safe city’. Finally, the topics are operationalized in indicators that in turn, all combined, form a ‘safe city’. The various sources for topics and indicators are thus used to complement each other, and all of the topics and indicators that were found in multiple (case) studies were brought back to one. The safety topics for which no indicators were found in the case studies are filled in as much as possible with indicators from The HCSS and The Economist. Indicators that were used by the HCSS and Economist but do not measure one of the safety topics in the cities, were left out if not convincing. It is assumed that if not one of the cities considers these as indicators for safety, these are probably not relevant in practice. This is sometimes due to the scope of this study: for instance, in West-European cities, the percentage of citizens living in slums is a less valuable indicator.

Topics	Objective indicators	Subjective indicators	Qualitative indicators	Performance indicators
SOCIAL				
Theft	<p>Number of thefts per 1000 inhabitants</p> <p>Number of theft crimes against/ from motor vehicles per 1000 inhabitants</p> <p>Number of pickpocketing offenses per thousand inhabitants</p> <p>Number of theft crimes of motor vehicles per 1000 inhabitants</p> <p>Number of crimes of theft on / off / from other vehicles per 1000 inhabitants</p> <p>Number of crimes of other capital crimes per 1000 inhabitants</p> <p>Theft with use or display of a weapon per 1000 inhabitants</p> <p>Theft with violence per 1000 inhabitants</p>	<p>Bicycle theft often occurs as a neighbourhood problem</p> <p>Vehicle theft often occurs as a local problem</p> <p>Car theft own neighbourhood last year as a % of total number of vehicles</p> <p>Theft from car own neighbourhood last year as a % of total number of cars</p> <p>Cycle theft own neighbourhood last year as a % of total bicycles</p> <p>% Of residents that have been victims of other theft in their own neighbourhood last year</p> <p>% Of residents that have been victims of baggy robbery without violence last year in their own neighbourhood</p> <p>Perceived risk of theft on the streets</p>	Talking with citizens and local professionals	
Violence	<p>Number of violence crimes per 1000 inhabitants</p> <p>Number of sexual offense crimes per 1000 inhabitants</p> <p>Number of crimes of public violence against persons per 1000 inhabitants</p> <p>Number of threat crimes per 1000 inhabitants</p> <p>Number of crimes of abuse per 1000 inhabitants</p> <p>Number of street robbery crimes per 1000 inhabitants</p> <p>Number of robbery crimes per 1000 inhabitants</p> <p>Number of murder and manslaughter per 1000 inhabitants</p> <p>Number of cases of domestic violence per 1000 inhabitants</p>	<p>Threats often occur as a local problem</p> <p>Violence crimes often occur as a neighbourhood problem</p> <p>Tough robbery often occurs as a neighbourhood problem</p> <p>% Of residents that have been victim of tampering robbery last year in their own neighbourhood</p> <p>% Of residents that have been victim of violence last year in their own neighbourhood</p> <p>% Of residents that have been victim of abuse last year in their own neighbourhood</p> <p>Perceived risk of being harassed in the streets</p> <p>Experienced social disorder/nuisance from being harassed on the streets</p> <p>Experienced social disorder/nuisance from physical violence and threats</p>	Talking with citizens and local professionals	
Burglary	<p>Number of burglaries per 1000 inhabitants</p>	<p>Burglary in homes often occurs as a neighbourhood problem</p>	Talking with citizens and	

		Number of house burglary crimes per thousand addresses Number of box / garage / shed / garden house burglary crimes per thousand addresses	% Of residents that have been victim of attempted burglary last year Percentage of residents that have been victim of burglary last year Perceived risk of house burglary	local professionals	
	Social disorder/nuisance	Number of social disorder/nuisance reports per 1000 inhabitants Number of noise pollution reports per 1000 inhabitants Number of Safety and Public Order notices - Drugs case per 1000 inhabitants Number of reports social disorder/nuisance from conflict per 1000 inhabitants Fireworks violations	Physical deterioration Experienced social disorder/nuisance Experienced social disorder/nuisance of which caused by youth hanging around Experienced social disorder/nuisance from aggressive traffic behaviour Experienced social disorder/nuisance from improper behaviour by cyclists Experienced social disorder/nuisance related to drug and alcohol abuse Victimization demolitions	Talking with citizens and local professionals	
	Drugs	Drug use/possession Drug trafficking Drug production			
	Safety in the neighbourhood/area		Satisfaction with police in the neighbourhood Perception criminality in neighbourhood Grade safety in living neighbourhood Unsafety feeling in own neighbourhood	Street knowledge (RPER-area scan)	<i>Burgernet participants / community-based patrolling</i>
	Subversive crime/organized crime	Criminal gang activity	Victimization asset offences	Risk group: drug criminals	- Number of investigations (BIBOB files, integral cases) - Number of prostitution cases
	General	Recidive number High impact crimes Safety in public transit Crime against the elderly Attacks against the police Persons in youth approach/youth crime Persons in repeat offender approach Persons in domestic violence approach	Number of social prevention measures Satisfaction with municipality Satisfaction with public safety/protection against crime Feeling of insecurity in the city (day time/night time) Feeling of insecurity in the own neighbourhood (day time/night time) Fear of crime	Talking with citizens and local professionals/ working groups	- Police performance indicators - Absence of no-go areas for police - Level of police engagement

		Persons in burglary approach Number of HIT persons Crimes by non-EU citizens Politically motivated crimes	Survey (voluntary) traffic wardens Places people feel unsafe		
	Other crimes	Scams Fines Forbidden weapons Forgery 'Flessentrekkerij' Abuse of trust Insult Arson Assault of honesty Deceit False currency Exhibitionism Healing Racism Other crimes against public loyalty 'Gebruiksdiefstal'			
*	Criminal family networks				
*	Malafide traders, illegal economy and fraudulent business				
*	Human trafficking				
*	Homeless people				
*	Organized begging				
*	Violence against homosexuals and lesbians				
*	(Online) hate speech				
PHYSICAL					
	Vandalism	Vandalism Number of destruction or property damage crimes per 1000 inhabitants Small outside fires per 100 hectares Average score of graffiti and graffiti retailer in Product Standards	Clean environment Vandalism Cladding walls and / or buildings often occur as a neighbourhood problem Destroyed / broken banks, garbage bins etc. often occur as a local problem		

		Illegal dumping	% Of residents that have been victims of other destruction last year in their own neighbourhood		
	Traffic safety	Number of (deadly) accidents % Aggressive driving behaviour % Driving too hard	Perceived risk of traffic incident		
	Fire safety	Number of fires Number of fires of buildings			
	(Counter-) terrorism	Frequency of terrorist attacks			Training plans Quality OSINT function Table tops with chain partners
	Water safety	Number of water social disorder/nuisance incidents on the same address Water quality			
	Industrial & health safety (nuclear accidents)	Air quality			
*	Spatial safety/urban planning	Quality infrastructure Quality of road infrastructure Quality of electricity infrastructure			
*	Accessibility of the area				
*	Safe events				
*	Self-reliance citizens in case of incidents				
	General	<i>Informed citizens (E)</i> Number of small/large incidents Duration of incidents Number of casualties Locations and times of incidents Target groups (seniors et cetera) Consequences of incidents for people/environment/financial	Number of physical prevention measures Importance different topics		Performance/deployment emergency services (all) <i>Disaster management/business continuity plan</i>
DIGITAL					
	Cyber-crime	Credit Pornography Data change/computer sabotage Data espionage Economic crime Computer fraud Tax fraud	Victimization cybercrime		

		Other			
	Cyber-resilience	Number of cyber incidents Damage costs of cyber incidents Percentage of infected computers	Citizen awareness of digital threats		Privacy policy Level of technology employed and dedicated cyber security teams Protection of ICT
*	Cyber bullying				
SOCIETAL					
	Radicalization	<i>Number of citizens with an unemployment benefit</i> <i>Number of school leavers</i> <i>Teenage pregnancies</i>		Information from networks	
	Polarisation	<i>Voting behaviour</i>	Perception of people with different identities Perception of presence of foreigners		
	Liveability	Life expectancy Unemployment (general/migrant) GDP per capita Access to healthcare Economic inclusion	Grade liveability own neighbourhood Quality physical facilities Social cohesion Development neighbourhood Loss of sense of community because of expansion		Environmental policies
	School absenteeism	Youth groups			
	Trust		Societal trust Trust in local government		
	Successful business and tourism location	International economic attractiveness			
	Social security & atmosphere of general respect, consideration and helpfulness	Discrimination Integration of minorities Attachment to the local community			
*	Confused people				
*	Accommodation newcomers				
*	Youth emergency help & addiction prevention				
*	Consumer protection				
*	Attractiveness city for (inter) national professionals				
*	Immigration and housing of refugees				
*	Schooling infrastructure				
	General			Street information/	

				opinion professionals	
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Table 17: Operationalization of 'safe cities' in indicators

It was striking that whereas The Economist and HCSS emphasize matters of health and economic safety, these were not represented in the case studies. However, the cities did underscore the importance of ‘liveability’ and ‘quality of life’, so some main health and economic indicators are included. Furthermore, the Economist and HCSS indicators are found to be a valuable addition with respect to another part of societal safety – namely the part that considers topics such as polarisation, inclusiveness and trust.

In sum, as shown in the table, ‘safe cities’ can be operationalized largely by means of indicators that measure traditional criminality and social disorder/nuisance – in which groups of perpetrators and victims are distinguished-, safety perception, organized and subversive crime, physical safety, cybercrime and cyber-resilience, and societal matters of liveability, and polarisation and radicalization versus social cohesion and an atmosphere of general respect, consideration and helpfulness. These ‘components’ of a safe city are measured by a combination of quantitative objective and subjective indicators and internal performance indicators of the organizations that have a responsibility in guaranteeing safety, complemented by qualitative information that is derived from citizens, professionals on the streets and from partner organizations and other city departments. It was in fact emphasized that the quantitative indicators are a starting point and that to assess the safety situation, qualitative information is needed to interpret the numbers. Furthermore, whereas indicators for social safety carry the upper hand in the case studies, topics that belong to the other dimensions were highlighted many times as being very important. Indicators for these topics, such as radicalisation, subversive crime, polarization, safe urban planning and (counter-) terrorism, are incomplete. For some, a couple of indicators could be found, but not enough, and others could not be found in any of the lists that represent safety in the cities. It seems that reports on safety do not always completely correspond to what is said to be important concerning the safety situation. Finally it should be addressed that in table 17 a few indicators are written in italic, which means that they come with some side notes. First of all, the indicator ‘Burgernet participants / community-based patrolling’ is difficult because Burgernet is a Dutch Police mobile application that involves citizens with police work, and it is not sure whether other cities do this as well. It could be linked to community patrolling, however not enough evidence was found that these forms of citizen involvement are actual indicators for safety. Secondly, the ‘informed citizens’ indicator is a suggested indicator of one of the experts that was interviewed, yet to be developed. Then, the ‘disaster management/business continuity plan’ indicator is in italic because the value of such plans was actually contested

by one of the interviewees that is an expert in physical safety. Finally, regarding the objective indicators for radicalization and polarisation it should be noted that it is not certain whether this are the actual indicators used to measure these issues. If so, it is assumed that they are not complete because of the complexity and diverse nature of the issues, and because they were presented as options for indicators.

Chapter 5: Conclusion and discussion

5.1. Conclusion

In this thesis, an answer to the question *'how can the concept 'safe cities' be theorized on the one hand, and operationalized on the other'* was sought. This question was found highly relevant first because of the growing importance of cities *an sich*. Due to urbanization, cities are the places where people, businesses and most functions of society are concentrated - therefore, urban policy and management are increasingly important as well. Secondly, because safety at the local level is growing in importance too. Cities today deal with many pressing safety issues, ranging from traditional criminality and social disorder/nuisance to emerging challenges of polarization, radicalization, terrorism and cyber threats. However, whereas the issue of urban safety seems so pressing, there is a lack of scientific attention for its nature. In literature, no definition of a 'safe city', or a thorough conceptualization of urban safety is given – which is considered a gap in literature. Therefore, in this thesis the understanding of the concept of 'safe cities' was explored, both in literature as well as in the empirical practice, using a grounded theory approach. Conclusions based on the results of this scientific exploration will now be presented for each sub research question.

Sub RQ 1

Regarding the first sub question, *how can the concept 'safe cities' be theorized*, multiple theoretical considerations were found. First of all, it was shown that the interpretation of the term 'safe' in literature has become very broad: from a focus on military threats on state-level, to a growing attention for local safety issues of varied origins. Subsequently, there is a shift from a focus on merely traditional criminality, to also taking into account issues of social disorder/nuisance and safety perception, and to finally broaden the whole safety domain to more social issues of people's quality of life, social cohesion and trust. This is in line with another shift that was indicated, regarding the urban management of safety – from government to governance: the (repressive) police system now shares responsibility with many other organizations that are usually steered by the (increasingly powerful) mayor/city administration. The 'safe cities' concept embraces the traditional interpretation of both 'safety' and 'security', of external threats and internal threats, of a negative approach that considers unsafety, as well as a positive approach of safeguarding core values of a city. This is summarized in the following conceptualization of 'safe cities', which can be seen as the answer to the first sub research question:

Safe cities

Resilient, cyber secure, socially cohesive and culturally inclusive cities, in which citizens have a high quality of life, are protected against crime and violence, and feel safe.

Social safety	Physical safety	Digital safety	Societal safety
The degree to which individual citizens are protected against crime, including violence, and how they perceive their own safety within the city.	The degree to which the functionality of the physical environment of the city, including the city's buildings, roads and public transit networks is safe and is resilient towards (human-made or natural) disaster.	The degree to which citizens and businesses have access to qualitative and reliable ICT systems and networks that are protected from attacks, and are aware of cyber risks.	The degree to which citizens are guaranteed of a high quality of life, including prosperity and well being, as well as community aspects of social cohesion, cultural inclusiveness and (political) trust.

Table 18: Conceptualization of the concept 'safe cities'

Table 18 shows the working definition of the concept 'safe cities' that was developed in this thesis, as well as the four dimensions of the concept and what they compromise. An important side note is that 'safe cities' is a rather holistic concept, which thus includes all of the four dimensions, which can also overlap. Some threats may affect multiple dimensions, and it is necessary to consider all four dimensions and not only focus on one. With respect to the working definition of 'safe cities', it should be noted that when asking the experts in the case studies how they (would) define the concept, a frequently heard answer is that a definition is impossible, because of the complexity, the broadness and the subjectivity that would influence the answer. However, this is a working definition, broad but short, and wins in strength because it is further conceptualized on the basis of the dimensions – which were recognized by the experts who were asked for it. The most common element that was mentioned regarding the definition of a 'safe city' leaned towards the idea behind the societal safety dimension, of a social city, with sense of community and inclusivity. However, the main safety topics that were identified in the three case studies, mostly belonged to the social safety dimension and less to the societal, physical and digital safety dimension. Whereas in the theoretical chapter it was chosen to understand 'safe' as both 'safety' and 'security', it seems that in the three cities studied, the emphasis is on a narrower understandig.

Sub RQ 2

The second sub question, *how can the concept 'safe cities' be operationalized in indicators*, was explored on the basis of two comparative international studies as well as three case

studies: Rotterdam, Antwerp and Frankfurt am Main. It was first concluded that based on The Economist and HCSS studies, the concept could be operationalized in a range of indicators that measure the four safety dimensions (table 6). In Rotterdam, it was found that safety of the city is principally measured by means of a ‘safety index’ that compares different neighbourhoods using mainly (objective and subjective) social safety indicators. Although the safety index does not include newly emerging safety issues, such as subversive crime, radicalization, terrorism and cyber threats, multiple experts underscored the importance of such issues. For some, indicators are still in development – for others, mainly societal safety topics such as polarization and radicalization, indicators probably already exist but are not presented in the safety context, or are not public. Furthermore, it was emphasized that in addition to statistical numbers that measure the concept of ‘safe cities’, the interpretation of whether the city or parts of the city is safe or not is also highly dependent on what the responsible organizations can conclude on the basis of the more qualitative information. This information is collected from professionals on the street, citizens and organizations in the network. Based on Antwerp, the second case, an operationalization of the concept ‘safe cities’ would also be quite narrow, as it would merely include traditional criminality and safety perception indicators. However, safety management in Antwerp is closely interwoven with social policy, and the interviewees in Antwerp also emphasized the importance of a social environment for a ‘safe city’, in which people respect and trust each other. Third, in Frankfurt, the indicators for a ‘safe city’ could mainly be found in the statistical police report and a safety perception survey. In the interview with the Crime Prevention Council, it was emphasized that they mostly work experience driven, not knowledge driven – although they would like to improve the latter. Indicators deducted from the Frankfurt case mostly belong to the social safety dimension, measuring the number of criminal offenses. However, they also seem to be relatively far in measuring the digital safety dimension, and in the interviews the importance of societal safety issues was stressed multiple times.

Altogether, the operationalization in indicators of the concept ‘safe cities’ is presented in table 17, on pages 112-117. It includes quantitative objective and subjective, qualitative, and internal performance indicators that measure the concept along its four dimensions of social, physical, digital and societal safety. One conclusion based on the list of indicators, is that it includes safety topics that still need to be operationalized. The operationalization of ‘social safety’ in indicators is quite firm, as it is measured largely the same in the three cases and can be approached closely by using quantitative indicators that measure actual criminality on the

one hand, and perceptions of safety on the other. The exception however is subversive crime, of which the measurement is hard because of the big dark number, and indicators are still mainly operational of nature. The second dimension, 'physical safety' could not be operationalized in indicators completely. Factors of vandalism, the appeal of the city environment, traffic and fire safety are measurable, however other important (emerging) physical safety subjects that were stressed such as safety during/of big events, physical aspects of terrorism prevention and other physical incidents did either not show up in the safety measurements of the three cities at all, or primarily in terms of performance indicators. Moreover, the importance of spatial safety/urban planning for 'safe cities' was also stressed in the different cases, but this was not resembled in the cities' indicators – however, that topic is covered by The HCSS/Economist studies that distinguished the infrastructure safety category. Then, the third category, digital safety, while being a distinct and thus highly relevant dimension in The HCSS and Economist studies, was not emphasized that much in the three case studies. In most interviews, it was not mentioned at all – unless it was specifically asked for. Whereas cyber threats and crime are certainly on the agenda, it appeared that governmental organizations are still in the phase of assessing their own role and responsibilities towards the topic. Digital safety largely exceeds city borders, although cities are the place where violations of that safety may occur. However, some indicators were found for this dimension, derived from The HCSS and Economist Studies, and from the Frankfurt case, where different types of cybercrime are in fact measured along sides other (traditional) criminal offenses. Finally, it should be noted that the societal safety dimension in particular had to be filled in mostly with the indicators coming from the HCSS and Economist indices, as in the three cities, the indicators found for this category were not sufficient. This however does not diminish the value of the societal safety as a distinct dimension, because the importance of societal safety topics was underscored in all three cases – whether it was with an eye on crime prevention, on social control or on the actual interpretation of what it means to live in a 'safe city'.

5.2. Discussion

The findings of this thesis research provide enough body for discussion. As a way of reflecting on how the research is conducted, first some limitations of this thesis will be discussed. Subsequently - reflecting on the conclusions that were just drawn - suggestions for further research as well as some practical recommendations are made.

5.2.1. Limitations

A first limitation of this thesis is that the findings of the case studies are biased because of the experts that were interviewed – or, rather, the experts that were not interviewed. By selecting certain organizations, a choice was made for a certain perspective on urban safety, even though a complete image is actually sought for. No interviews were conducted at non-governmental organizations (private sector, civil society or otherwise), even though it was argued in the theoretical framework that these are increasingly important in the urban safety domain. However, in every case study, experts were interviewed from the organizations that are responsible for safety by law, and it is assumed that they, due to their overall involvement, could give a broad and comprehensive insight in the matter.

Secondly, it was found that the nature of the main research question was quite theoretical, and therefore the interviews with the experts were sometimes difficult, as they are not always engaged with urban safety in such a way. Therefore, regarding the second sub question, answers were mostly found in documentation. The interviews with the experts primarily helped to understand, explain or complement these findings – which however does not diminish the importance of the interviews.

Third, as issued in the methodological chapter with regard to the case selection, another limitation is that two of the three cases are port cities and one is not. It would have been stronger to choose a port city in Germany as well. It was shown that in Antwerp, safety issues concerning drugs are high on the agenda, which is related to its port. In Rotterdam, the drugs issue was also emphasized with regard to subversive crime. In Frankfurt, less emphasis was placed on drugs, although two indicators that measure the issue were found. To assess the importance of drug criminality in terms of urban safety, it is recommended for a follow-up study to analyse three port cities, or three cities that do not have a port.

A final limitation is that one of the cases, Frankfurt am Main, has proven to be difficult to study because of a language barrier. The interviews with the experts could not be done in German; therefore a German colleague from the internship at PwC had to conduct the interview and translate it afterwards. This however was done with broad consultation before and afterwards. Also during the interview it was possible to follow the conversation to a certain extent and ask for follow-up questions. With regards to the document analysis in this case, research was also limited. The number of relevant documents that could be found was low and because of the language it was more difficult to do an extensive analysis. However, some help with translating parts of the documents made it possible to do a limited assessment

of the information. Also, in the case of Frankfurt, potential interview partners from the research department and the city police were reluctant to participate in an interview. Therefore, and also due to language issues, the data on Frankfurt is not complete relative to the other cases.

5.2.2. Suggestions for further research and practical recommendations

First of all, whereas the importance of ‘new’ issues such as radicalization and subversive crime was highly stressed, it was striking that these matters are not taken into account when statements such as “Rotterdam has become safer” are made. On the one hand, this seems logical because of the complexity and sometimes sensitivity of particular topics. However if they are so important, it would also be logical if they are taken into account or noted. Therefore, the main recommendation that results from this’ thesis findings, is to do further research on the topics that are marked important but not yet operationalized. This is both important for cities themselves, as well as for the scientific development of the ‘safe cities’ concept. It can be done by an extensive literature review that considers a particular topic, or an empirical study in which more organizations that might collect information regarding a topic are studied. In any way, especially digital and societal safety are recommended to further explore in an urban safety context, because of their growing importance.

Regarding the external validity of this thesis, a recommendation for further research would be to carry out more case studies and take the outcomes of this thesis as a reference point. It would be interesting to see whether other cities agree with the operationalization of the ‘safe cities’ concept and if they could use the list of indicators to measure safety in their city.

Finally, as it was found that cities still struggle with combining and using all of the qualitative information they collect, it is recommended to further research how this can be done best. Perhaps it is possible to find good practices in other cities, or to learn from other policy domains or academic disciplines.

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List of abbreviations

CPC	Crime Prevention Council
DV	Directie Veiligheid
DV-A	Directeur Veiligheidsbeleid Antwerpen
EIU	The Economist Intelligence Unit
EU	European Union
GGD	Gemeentelijke Gezondheidsdienst
GIS	Geographical Information System
HCSS	The Hague Centre for Strategic Studies
HIC	High Impact Crimes
HIT	High Impact Target
ICT	Information and Communication Technology
LPA	Lokale Politie Antwerpen
OBI	Onderzoeks en Business Intelligence
PEMP	Policing European Metropolises Project
PFaM	Polizeipräsidentum Frankfurt am Main
RA	Rampenambtenaar
RIEC	Regionaal Informatie en Expertise Centrum
RPER	Regionale Politie Eenheid Rotterdam
SD	Studiedienst
UN	United Nations
VAR	Veiligheids Alliantie Rotterdam
VHRR	Veiligheidshuis Rotterdam-Rijnmond
VRR	Veiligheidsregio Rotterdam-Rijnmond