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Bicycling for social inclusion

A policy analysis of the social inclusion potential of Swedish
bicycle planning

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Abstract

This thesis critically interrogates how accounts of the social inclusion (SI) potential of bicycling is represented at Swedish policy-level. Special attention is paid to discourses behind and silences within policies that either includes or excludes groups of people. Not everyone has the same opportunities to access society, this unequal access can lead to transport related social exclusion, which refers to the process that prevents people from societal participation due to lack of access to opportunities. A contributing factor to unequal accessibility is the car as planning-norm in urban planning, a male-dominated transport-mode that exclude people that cannot afford a car or do not hold a driver's license. Bicycling is in Swedish transport policy intended to improve societal accessibility, which should be planned to promote equality. Through a policy analysis framework inspired by Bacchi (2009) modified with a social exclusion framework and a review of the discursive frame of SI and bicycling in Swedish transport policy, this study sought to answer the question: *can the social inclusive potential of bicycling be realized in Swedish bicycle planning?* The findings reveal that, despite years of SI as a planning principle within transport policy, the potential to realize the SI potential of bicycling is low. Bicycling is generally assumed to be accessible to all while neglecting the challenges to realize such inclusive potential. Strikingly enough, the Swedish capital, Stockholm, neglects SI themes, while a small municipality as Kramfors includes SI themes. This paper suggests that such silences impose a barrier to realizing the SI potential of bicycling in Sweden.

Key words: transport related social exclusion, social inclusion, bicycling, policy analysis, bicycle planning

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List of abbreviations

GCM	Gång, cykel och moped (Walk, cycle and moped)
SI	Social inclusion
SKL	Sveriges kommuner och landsting (Swedish municipalities and counties)
SOU	Statens offentliga utredningar (The government's official investigations)
SPHA	Statens folkhälsoinstitut (The Swedish Public Health Agency)
TRAST	Trafik för en attraktiv stad (Traffic for an attractive city)
TRSE	Transport related social exclusion
VGU	Vägars och gators utformning (Road and street design)
WC-Plan	Walk and cycle plan
WPR	What is the problem represented to be approach

1. Introduction

The transport system is considered to be a tool for inclusion, equal access, and participation. Infrastructure investments can, therefore, be perceived as social investments that decrease the risk of social exclusion, with long-term effects on individuals and society (Trivector 2015: 14; Murphy 2012; Summers & Smith 2014; Grieco 2015; Polese & Stren 2000; Kosoy 2012). In times of globalization-trends of rapid urbanization, growing inequalities, and climate and environmental change, it is crucial for national and local governments to acknowledge how equality and accessibility can be addressed without stretching the limits of the environment (Grieco 2015). The importance of an equal, accessible, and ecologically sustainable transport system is expressed within a set of globally agreed sustainability goals known as the Agenda 2030. According to Agenda 2030, national and local governments have the potential and responsibility to adopt sustainable transportation solutions. The agenda also stresses the importance of furthering equality, which in the context of transportation is the provision of accessible, affordable, and safe transportation for all regardless of background, with special attention paid to the needs of the vulnerable (UN 2015).

However, even in Sweden, one of the world's most equal countries, not everyone has the same opportunities to access society. This unequal access between social groups can lead to what scholars have termed as Transport-Related Social Exclusion (TRSE) (Schwanen et al. 2015; Neutens et al. 2010; Páez et al. 2012 Kenyon et. al 2002). TRSE refers to the process that prevents people from societal participation due to lack of access to opportunities (ibid.) A contributing factor for unequal accessibility is the car as the planning-norm in urban planning. The car is a male-dominated transport mode that excludes people that cannot afford a car or do not hold a driver's license (Hanson 2010). To improve equal accessibility and social inclusion (SI), planning should acknowledge the possibilities for bicycling as it is inexpensive, does not require a driver's license, and can be used by people with different physical abilities and ages, which represents the SI potential with bicycling. Bicycling is one of the most sustainable transport modes that holistically embodies sustainability from the individual to the global scale, and can offer solutions for a variety of complex and persistent urban challenges; it is environmentally sustainable, socially inclusive, and represents an alternative way to travel and plan (Godefrooij et al. 2009: 22, 23; Godefrooij & Schepel 2010: 24; de Jong & Rouwette 2009: 2; Vaughn 2009: 95; Dzikus 2017). Investments for increased bicycling can be traced to the late 1990s in Sweden, and have been expressed within Swedish transport policy (Prop.2008/09:93) as a tool for improved accessibility and SI, where accessibility should be

designed to promote gender equality, contribute to integration policy, and counteract ethnic discrimination (ibid: 8, 16ff). However, as several researchers suggest, the social dimension has been poorly operationalized with a limited focus on accessibility gaps between social groups within the Swedish transport sector (Polk 2001; Wittbom 2009; Trivector 2015). This paper demonstrates that such patterns are visible within bicycle planning also.

This paper will argue that for policy to succeed in making the transport system more ecologically sustainable while simultaneously addressing issues of unequal accessibility and SI, transport policy needs to explicitly address issues of accessibility gaps, which include acknowledging how perceived or actual barriers such as safety, norms, attitudes, and physical abilities differ between groups. According to Hoffman (2016) and Pedalista (2017), the norms of and attitudes toward bicycling differ between different socio-cultural contexts; Foreign-born, especially women, have different perceptions of bicycling, are the ones feeling most unsafe in the transport system, and are less likely to know how to bike and or have a driver's license (ibid.) This leads to a greater risk of experiencing TRSE (Lewin et al. 2006; Litman 2003; Chapman & Weir 2008). As this paper will demonstrate, Swedish transport policy assumes bicycling to be accessible to everyone while neglecting the challenges to realize bicycling's potential, which decreases the potential to realize the SI potential with bicycling.

These findings were based on a policy analysis of how social exclusion and inclusion were expressed within Swedish bicycle planning. The first step was a quantitative content analysis of how all Swedish bicycle plans included SI. The qualitative analysis consisted of a theoretical framework inspired by Bacchi's (2009) policy analysis. The framework was complemented by a social exclusion framework and a discursive review of how SI has been historically expressed in policy. This framework was operationalized into a policy analysis of how SI is expressed within 23 Swedish national, regional, and local bicycle plans. According to Bacchi, policies address what the authorities consider to be societal problems and what actions such problems require. This approach examines how issues are represented in policy, why certain issues are represented as problems, and why certain issues are absent (Foucault 1977; Deacon 2000; Bacchi 2012; 1999; 2009). The analysis of the 23 plans revealed that the SI potential of the bicycle was not a common argument for increased bicycling in Swedish bicycle planning. This paper suggests that such silences impose a barrier to realizing the SI potential of bicycling and to the reduction of TRSE.

This thesis consists of ten chapters, (1) introduction, (2) aim and research questions, (3) delimitations, and (4) relevance to global studies. The background chapter (5) presents the policy context surrounding Swedish bicycle planning and SI and represent the discursive frame of bicycle policy within the analysis. The chapter of previous research (6) situates the thesis in its scientific context by presenting research that is relevant for understanding the challenges to realizing the SI potential of bicycling. The chapter consists of two subheadings: the first present how social sustainability previously has been handled within the transport sector; and the second deals with barriers to accessibility related to the physical and social environment. The theoretical and analytical framework chapter (7) describes Bacchi's policy analysis approach complemented with a TRSE framework. The methods chapter (8) clarifies the methodological premises of this thesis. Chapter (9) present the results and analysis, which examines national, regional, and local bicycle planning respectively. The conclusions chapter (10) present the main findings of this thesis and elaborate on how the findings contribute to this field of research.

2. Aim and research questions

The aim of this thesis is to critically interrogate how accounts of the SI potential of bicycling is represented within Swedish bicycle policy. This aim seeks to examine the discourses behind and silences within policies. The overall research question is as follows:

Can the social inclusive potential of bicycling be realized in Swedish bicycle planning?

The underlying questions are rooted in Bacchi's theoretical framework:

- *Using a social exclusion framework, what are the main represented problem formulations in Swedish bicycle planning?*
- *Based on the discursive themes in previous policy, what underlies the current problem formulations in Swedish bicycle planning?*
- *Using a social exclusion framework, what has yet to be problematized in Swedish bicycle planning?*

3. Delimitations

This thesis examines bicycle policy on the national, regional and local level, as all level respectively are responsible for bicycle planning. However, the method employed in this thesis can only judge the policy level; it cannot mirror the actual effects of bicycle planning. Nonetheless, using the analytical and theoretical framework to assess the analysis of represented problems and actions can lead to the visualization of the authorities' priorities of SI. Even though there are several modes of sustainable transport such as walking and public transport that may have positive effects on social exclusion; these forms of transport are excluded. Unlike walking or public transportation, bicycling has the potential benefits of SI, zero emissions, health benefits, and travel distance. Public transportation delimits mobility and accessibility to a timetable, bicycling, on the other hand, offers individual freedom within a reasonable distance. While bicycling can also offer solutions for a variety of complex and persistent urban challenges such as environmental and climate issues, I will focus on the social pillar and more explicitly on SI. This because accessibility gaps and SI has gained limited attention within the transport sector, while TRSE continues to be an issue.

4. Relevance to global studies

National and local governments have the responsibility to address global issues of climate change while simultaneously addressing and responding to local inequalities. In times of rapid urbanization, growing inequalities, and climate and environmental change, it is crucial to explore how equality and accessibility can be enhanced without stretching the limits of the environment (Grieco 2015; UN 2015). Bicycling has the potential to answer these urban challenges as it has the potential to address issues from individual accessibility to environmental and climate change (Godefrooij et al. 2009; Godefrooij & Schepel 2010). How bicycling can enhance SI and equal accessibility is a topic that is becoming increasingly important when facing such contemporary global issues. Few modes of transport have the potential to be as inclusive and individually beneficial in terms of cost-savings and health as the bicycle while causing no environmental footprint (ibid.) However, there are several challenges that policy needs to address to realize this SI potential.

5. Background

As noted by the way of introduction, this thesis will focus on the context of bicycle policy in Sweden. Since bicycle policy exists within a broader context of transportation policy, this chapter looks into Swedish policy documents and reports that are relevant to bicycling and social inclusion. The aim of this chapter is to show how bicycling and SI has been handled within Swedish policy to describe the current discursive context in which national, regional and local bicycle planning takes place. The occurring SI themes within these documents will be met to represent the underlying premises and discursive frame of bicycle planning and SI within the following analysis.

5.1. Discursive context of Swedish bicycle planning

Bicycling and SI have been visible in transport planning since the late 1990s and are goals within several policy areas. SI themes of equity and gender equality have continuously been prominent but their role has varied. Themes of assisting children and the disabled, who have a privileged legal status, have attained great importance within transport policy. The table on the next page gives an overview of the documents identified as relevant for bicycling and SI and summarizes the documents' overarching SI themes. The following section, based on the documents in the table, is a brief summary of how different approaches to SI and bicycling has been incorporated within Swedish transport policy.

Table 1. *Themes within Swedish transport policy and planning with relevance to bicycling and SI.*

Themes within Swedish transport policy and planning with relevance to bicycling and social inclusion			
Document type, year	Authority	Name of document	Relevant SI themes
Ordinance 1986: 856	Swedish parliament	The responsibility of the state authorities for the implementation of	Equity, equality
Proposition 1997/98:56	Swedish government	Transport politics for a sustainable development	Social inclusion, accessibility, gender
Publication 2000:8	Trafikverket	More bicycle traffic on safer roads	Accessibility
SOU 2001:44	Swedish government	Equality – transportation and IT	Gender equality
Proposition 2001/02:20	Swedish government	Infrastructure for a long-term sustainable transportation system	Gender equality
Proposition 2005/06:155	Swedish government	The power to shape society and its own life - new goals in gender equality policy	Gender equality (power, economy, work, violence)
Proposition 2005/06:160	Swedish government	Modern transportations	Accessibility, health, gender equality, children
Report 2006:14	Swedish Public Health Agency	Physical activity and public health'	Health, safety, social groups
Report 2007:3	Swedish Public Health Agency	The impact of the built environment on physical activity'	Health
Manual 2007	SKL, Vägverket, Banverket, Boverket	Traffic for an attractive city (TRAST)	Accessibility, safety, segregation
Report 2008:31	Swedish Public Health Agency	Active transport - heading to better conditions for walking and cycling traffic	Health, children, accessibility, social exclusion
Proposition 2008/09:93	Swedish government	Goals for future travel and transportation	Safety, health, accessibility, anti-discrimination, equality, children, disabled
Directive 2010:93	Swedish government	Review of rules from a cycling perspective	Health, safety
Manual 2010	SKL, Trafikverket	Walk- cycle- and moped manual (GCM)	Accessibility, public health, safety, social interaction, social groups
Proposition 2012/13:25	Swedish government	Investments for a strong and sustainable transport system	Sustainability, safety
SOU 2012:70	Swedish government	Increased and safer cycling - a review of rules from a cycling perspective	Gender equality, integration, children, health
Publication 2012:196	Trafikverket	Increased and safe cycling - Reporting of government assignments	Integration, citizens, society
Publication 2013:137	Trafikverket	Guidance to regional bicycle planning	-
Report 2013	Trafikverket	Proposals for the national transport system	Accessibility, social groups
Publication 2014:030	Trafikverket	Safer Cycling - Common Strategy for 2014-2020	Safety, health
Publication 2015:087	Trafikverket, SKL	Road and street design	Disabled, children
Manual 2015	Trafikverket, Boverket, SKL	Traffic for an Attractive City (TRAST)	Sustainability, accessibility, safety, social exclusion, segregation, social groups, equality

Social inclusion first became visible as a planning principle in conjunction with Ordinance 1986:856 *The Responsibility of the State Authorities for the Implementation of Integration Policy*. This Ordinance stated that state authorities shall promote equal rights and opportunities for all regardless of ethnic or cultural background; authorities have the responsibility to account

for ethnic and cultural diversity in society when designing and operating their duties (1986: 856). Ordinance 1999:593 proposed further changes, stating that authorities in their activities shall counteract all forms of ethnic discrimination. These SI themes were applied at the transport policy level in 1997 in Proposition 1997/98:56: *Transport Politics for a Sustainable Development*. Here, the overarching transport policy goal “to provide an economically efficient and long-term sustainable transport supply for citizens and industry throughout the country” (Prop.1997/98:56: 1) was first stated. The Proposition continues by stating that a gender perspective should permeate all traffic policy. It is stressed that a socially sustainable transport system requires good accessibility for all social groups, and the bicycle can provide those people without access to a car with an effective form of transportation and a high quality of life (ibid: 11, 97, 64).

In 2000, the role of bicycling was strengthened by the Swedish Transport Administration’s (Trafikverket)¹ publication 2000:8 titled *More Bicycle Traffic on Safer Roads*, which was the first national document that solely emphasized bicycling. The publication stressed that good infrastructure for cyclists based on an “entire-journey” perspective is a question of equality since women travel more locally, have more complex travel patterns, and walk and cycle more than men (ibid.) Accessibility aspects should be considered in all physical planning, as the accessibility of children, women, and people without access to a car is currently limited (ibid.)

Shortly after, the role of gender equality became strengthened. In 2001, the importance of gender equality was expressed in SOU 2001:44 *Equality – transportation and IT*, which sought to add gender equality as a sixth transport policy goal (SOU 2001:44). These equality objectives were expressed in Prop. 2001/02:20 *Infrastructure for a Long-term Sustainable Transportation System*, where gender equality was listed as one of six goals in Swedish transport policy. An equal transport system is

“Designed to meet the transport needs of both women and men. Women and men should be given the same opportunities to influence the development, design, and management of the transport system, and their values must be equally weighted” (Prop.2001/02:20: 25).

¹ Former Vägverket

This important work on gender equality was later translated into a deeper analysis of inequalities expressed in Proposition 2005/06:155 *The Power to Shape Society and Its Own Life - New Goals in Gender Equality Policy*. In this Proposition, equality referred to four objectives: an even distribution of power and influence, economic equality, an even distribution of unpaid domestic work, and men's violence against women shall cease (2005/06:155: 1). These four objectives were to apply to all people regardless of life situation, gender, age, ethnicity, sexual orientation, disability or geography (2005/06:155: 44). These equality objectives have relevance to the transport sector and were first expressed in Prop. 2005/06:160 *Modern Transportations*, where the role of bicycling in accessibility, environmental sustainability, and health was stressed, as was the importance of giving the safety of children and adolescents special attention (ibid.)

In the mid 2000s, the importance of bicycling for health and physical activity also received attention. The Swedish Public Health Agency (SPHA) first published a report emphasizing such themes in 2006, followed by reports in 2007 and 2008. Physical activity through bicycling was identified as having positive effects on individual health, social contacts, equality, and accessibility (SPHA 2006, 2007, 2008). It is stated that when planning for new infrastructure, bicycling's role to counteract social exclusion should be accounted, with special attention to children and the elderly (SPHA 2007, 2008). SPHA (2006) stress that people, regardless of social position, gender, age, ethnicity, and disability should be given the conditions for physical activity and movement; however, the socio-economically disadvantaged, some immigrant groups and disabled are more physically inactive in everyday life (ibid.).

In 2008, the goal structure changed in transport policy. The overarching transport goal (Prop.1997/98:56) remained, but the seven specifications changed into one functional goal² titled “*accessibility*” and one consideration goal³ titled “*safety, environment and health*” (Prop.2008/09:93). The functional goal stated that the design, function, and use of the transport system should give basic accessibility with good quality and usability to *all*, contribute to development in the whole country, and respond to both men's and women's transport needs (ibid: 16ff). Bicycling, gender equality, and equity were placed under the *functional goal*, and improved bicycling was perceived as improving accessibility (ibid: 28, 57). The possibility for

² Funktionsmål

³ Hänsynsmål

children and the disabled to travel safely was identified as needing special attention (ibid: 8), and the importance to design accessibility to promote gender equality, to counteract ethnic discrimination, and contribute to integration policy was stressed (2008/09:93: 18). The accessibility goal reflects the anti-discrimination policy and states the responsibility to account for ethnic and cultural diversity when designing and pursuing their activities, as equal rights and opportunities should be for all regardless of ethnic and cultural background (Ibid.) The *consideration goal* states that the design, function, and use of the transport system should be adapted to ensure that no one is killed or injured seriously as well as contribute to achieving environmental goals and increased health (ibid: 30ff).

Since this time, the role of bicycling has been expressed in several documents. Directive 2010:93 *Review of Rules from a bicycling Perspective* presented four initiatives to reach the goal of increased and safe cycling, including increased everyday cycling, bicycling for recreation and tourism, health through physical activity, and decreased deaths and injuries. Similar initiatives are presented in Prop. 2012/13:25 *Investments for a Strong and Sustainable Transport System*, wherein safety and improved infrastructure for cyclists were perceived as crucial for an efficient and long-term sustainable transport system. The social benefits of bicycling were further stressed in SOU 2012:70 *Increased and Safer bicycling - a Review of Rules from a bicycling Perspective*, where bicycling is acknowledged as having positive effects on public health goals, gender equality, integration, and the possibility for children to utilize the transport system. The report also notes that the heterogeneity of cyclists requires sufficient infrastructure, accessibility, passability, and perceived safety (ibid.) The potential for bicycling to contribute to integration policy is further acknowledged in Trafikverket's publication 2012:196 *Increased and Safe bicycling - Reporting of Government Assignments*, which argues that bicycling is inexpensive, convenient, and promote individual freedom (ibid.) Similarly, Trafikverket's (2013) *Proposals for the National Transport System* stresses that people regardless of age, sex, and disabilities should be able to get their individual needs satisfied (ibid.) To make bicycling more attractive and safe, Trafikverket's publication 2014:030, *Safer bicycling - Common Strategy for 2014-2020* acknowledges the need for improved maintenance, improved safety, safer behaviors, and knowledge about accident risks and causal effects of cycling.

Guiding documents intended for regional and municipal bicycle planning also exist. Regional bicycle planning may take its starting point from Trafikverket's Publication 2013:137 *Guidance for Regional Bicycle Plans*, which deals with the structure and content of regional bicycle

planning. On the local level, there are three main documents that guide bicycle planning: Publication (2015:087) *Road and Street Design* (VGU), *Walk, Cycle, and Moped Manual* (GCM) (2010), and *Traffic for an Attractive City* (TRAST) (2007, 2015). The first describes in technical and infrastructural terms how the bicycle network should be designed, including few social themes other than the accessibility and safety of children, elderly, and the disabled (publ. 2015:087). The second has a stronger emphasis on social themes, stating that accessibility for all is a question of democracy (GCM 2010: 148). Cyclists are perceived to be heterogeneous (ibid: 10). Bicycling would have positive effects on public health, physical activity, a pleasant city, increased perceived safety, social interaction, and contributes to less emissions and noise (ibid: 3, 7) The GCM handbook further emphasizes that society should be accessible to everyone, and it is important to give more influence to people with special needs such as children, immigrants, the disabled, and the elderly (ibid: 8, 9).

The TRAST document (2007, 2015) describes an attractive city as holistically sustainable, characterized by diversity and tolerance, has good accessibility, solid infrastructure and pleasant environment for movement (TRAST 2007: 7, 12; TRAST 2015: 9ff). The importance of equal societal participation regardless of age, income, ethnicity, sex or disability was stressed (TRAST 2007: 7, 12; TRAST 2015: 9ff, 11). Children, elderly, and people with disabilities were identified as needing special attention in planning and being particularly dependent on functioning public transportation as well as walking and biking opportunities (TRAST 2007: 38). The importance of addressing challenges of safety, segregation, social exclusion, inequalities, and representation is stressed, as men and women are identified as having different travel patterns and perceptions of safety (TRAST 2015: 12).

This summary of Swedish transport policy suggests that SI and bicycling to promote SI and equal accessibility are reoccurring themes within Swedish transport policy. The emphasis on SI and bicycling's potential to promote SI have, however, differ between the different policy documents. Yet, this summary shows how these issues are prioritized areas within Swedish transport policy.

6. Previous research

This chapter situates the thesis in its scientific context by presenting research that is relevant for understanding the challenges to realizing the SI potential of bicycling and the complex physical and social context that surrounds bicycling and planning. It first presents research on how social sustainability has historically been operationalized within the transport sector, which describes how SI has been perceived and handled as a policy issue. It then presents research dealing with differentiated individual barriers to accessibility with regard to the physical and social environment.

6.1. Social sustainability in the transport sector

As noted in previous chapter, bicycling is expressed in Swedish transport policy (Prop.2008/09:93) as embodying sustainability: it is perceived as a tool to improve accessibility with positive health and environmental benefits. Accessibility should, according to Prop.2008/09:93, be designed to promote gender equality, contribute to the integration policy, and counteract ethnic discrimination (ibid: 8). These issues are also raised in transport and urban studies, where human geographers among others stress how a sustainable urban transport system is associated with several aspects of urban life and requires the promotion of numerous issues including accessibility, safety, mobility, affordability, equity, comfort, and people and environment friendliness (Pardo 2012: 9,10; Rouwette 2009: 2). Such issues include tackling the challenges of climate change, motorization, deaths, and injuries. Other issues include the need for improved possibilities for public transportation, walking, and cycling; and to recognize the needs of children, women, elderly, the urban poor, and people with disabilities (ibid.) Correspondingly, according to urban mobility researchers such as Godefrooij et al. (2009) among others, bicycling may have the benefits of fewer emissions, better use of public space, improved social equality, improved public and individual health, reduced social exclusion, individual freedom, and access to social benefits. Bicycling's numerous benefits make it suitable to be considered a tool to solve several urban issues, including TRSE to promote SI (Godefrooij et al. 2009; Godefrooij & Schepel 2010; Trafikanalys 2016; Hallin et al. 2016; EFC undated: 1, 2).

Despite this focus on such issues in previous research, there remains no clear definition of social sustainability within the transport sector. Grieco (2015), a researcher on gender and transportation, refers to a socially sustainable urban transport system where the

benefits and costs of transport and facility services such as accessibility are equitably distributed. Equitable and socially sustainable transport projects and policies are those that reduce social exclusion; benefit the marginalized, poor, and vulnerable; and contribute to creating a safe, accessible, and inclusive society for all regardless of social belonging (Lineburg 2016; Jennings undated; Golub et al. 2016; Hoffman 2013). Studies also note that investments in new infrastructure should consider who will benefit or be excluded from these investments by emphasizing the needs, travel patterns, transport nodes, accessibility, safety concerns, and barriers of different groups and planning accordingly (Godefrooij & Schepel 2010: 29; Trafikanalys 2016; Murphy 2012: 37ff; Litman 2017; Golub et al. 2016; Litman & Burwell 2006; Litman 2003: 2; Lucas 2012). In these studies, a socially sustainable transport system is often discussed in terms of its contributions to social inclusion.

Even though sustainable development refers to a balance between the three pillars, the social dimension has received limited attention in transport planning. According to Lubitow and Miller (2013) as well as Fainstein (2010), who are researchers within sociology and urban sustainability, there has been limited focus on the mobility and accessibility gaps between social groups in policy initiatives. Issues related to justice, inclusion, and equality have also been overlooked in favor of technological solutions that focus on the economic and environmental dimensions. This has led to an inequitable distribution of benefits (ibid.) Similarly, according to Trivector (2015), a Swedish consultancy within sustainable transportation, six out of seven specifications within the function goal (Prop.2008/09:93) including equality and bicycling, have not shown any positive development. Numerous authors within urban mobility, transport studies, and human geography stress how mainstream transportation planning tends to focus on economic and environmental objectives which have systematic monitoring methods, while the social dimension is a dynamic concept with no systematic method for monitoring (Lubitow & Miller 2013; Lineburg 2016; Fainstein 2010; Litman 2017; Litman & Brenman 2012; Martens 2007; Martens 2006). This is evident in Swedish transport policy (Prop.2008/09:93), where the *consideration* and *functional goals* should be of equal concern, yet requirements differ. According to Swedish environmental policy (1998:808, 6 ch, 3 §), there are requirements for performing environmental consequence analysis, while the social aspects are up for interpretation with no equivalent consequence analysis (Trivector 2015). This summary of previous research shows that, despite a policy framework and extensive research that supports SI, SI has received limited attention in transport planning and implementation.

6.2. Barriers to accessibility - The physical and social environment

As noted in chapter 6.1, socially inclusive policy should emphasize the barriers to accessibility of different groups. A number of researchers have discussed the lack of success in creating a more socially equal transport system and point to the role of the physical and social environment. This chapter presents research on how individual barriers to bicycle use are influenced by aspects relating to the physical and social environment. Within the context of accessibility, the physical environment refers to how the built environment is perceived by or suited for different people, while the social environment refers to how the social context influence accessibility (eg. Garrard et al. 2012; Lubitow 2017; Hoffman 2016). As this chapter will show, these two are often interlinked.

Numerous researchers that has studied bicycle patterns in for example Europe, North America and New Zealand stress that *physical* factors to increase bicycle usage rates among underrepresented groups include: sufficient infrastructure that is separated from motorized traffic; safe parking options; policies that discourage car use; and public transportation that is integrated with bicycling facilities (Garrard et al. 2008: 55; Aldred et al. 2016; Pucher et al. 2010: 110ff; Garrard et al. 2012; Wang et al. 2012). However, Aldred et al. (2016), researchers on sustainable mobility in London, stress that one cannot assume that the diversity of cyclists automatically increases with growing bicycling levels. Policy planners should study and respond to the *physical* and infrastructural preferences of different groups to create a supportive bicycle environment for a diverse group of people (ibid.) A number of studies note that women generally suffer disadvantages in the physical environment since it has not been developed in accordance to their needs (Burgess 2008: 114; Beebejaun 2016; Escalante & Valdivia 2015; Snyder 1995). Polk (2003b; 2001) and Wittbom (2009), Swedish researchers within gender and transportation, for example stress how the norm of decision-makers as male has created a distance between policy and reality, which has impacted the physical environment in favor for male interests. In accordance to that, Litman (2017) stresses that the current planning norm tends to be unequitable twice over, as it favors certain types of infrastructure, modes, and users and harms disadvantaged groups.

In addition to gender norms, Golub et al. (2016) and Hoffman and Lugo (2014), American urban geographers, argue that cities in general and bicycle planning in particular, by supporting neoliberal values, have impacted the physical environment to favor the bourgeoisie

class (Lees 2008). They stress that bicycling has been associated with progress and environmentalism and is used to attract the wealthy middle class while neglecting the differentiated socio-cultural context of bicycling (Hoffman & Lugo 2014; Golub et al 2016). For many ethnic minorities whose mobility has been neglected by such investments, bicycling is associated with poverty (ibid.)

As noted by this research, the social environment that surrounds policy has influenced the physical environment in favor for male and bourgeoisie interests, which influences accessibility. In other words, the physical environment cannot be decoupled from the social environment. Overall, and in various different contexts, travel patterns among men and women differ with regard to trip distance, time, purpose, transport mode, and transport costs (Emond et al. 2009 a,b; Kunieda & Gauthier, 2007; Civitas undated: 6; Transgen 2007; Polk 2003a: 79; Chadha & Ramprasad 2017; Cresswell & Uteng 2008). Examining the *social environment*, these reasons depend on traditional and cultural gender norms, daily constraints with regard to domestic responsibilities, women's roles in the labor market with low-wage part-time jobs, etc. These factors generally make women to work closer to home and have shorter but more complex trips (ibid.) While travel patterns differ based on gender, it also differs based on other social characteristics. An extensive literature within transport geography shows that social background such as ethnicity and socio-economic background influence travel patterns (Civitas undated: 6; Hjortol 2000; Krovi and Barnes 2000; Hanson 2010; Johnston 2000; Preston et al. 1993; McLafferty and Preston 1991; McLafferty & Preston 2000; Johnston-Anumonwo 1997; McLafferty and Preston 1991). This research has resulted in an emphasis within research and transport policy on accessibility (ease to reach societal services) rather than mobility (physical travel), as mobility needs tend to be relative in contrast to accessibility (Litman 2003; 2017; Lucas 2012).

Contemporary research on bicycling shows that the gender, ethnic, and socio-economic dimensions are also visible in bicycling. As a result of an androcentric environment, men and women *perceive* the physical environment differently. One aspect is how the physical environment such as road design affect how women and men perceive safety differently. Garrard et al. (2012; 2008) have studied bicycle patterns between men and women in different western geographical locations. They, among others within urban mobility studies, conclude that risk tolerance has similar gender differences to bicycle use (Garrard et al. 2012; Garrard et al. 2008; Aldred et al. 2016; Lubitow 2017: 5; Rosenbloom, 2004; Harris 2006; Howard 2001;

Transgen 2007). The different perceptions of safety of women translate into barriers to bicycling and influences their way of travel (ibid.)

Related to the ethnic and socio-economic dimensions, Steinbach et al. (2011) present statistics on minority bicyclers from London. Approximately thirty percent of the cyclists in London are women. However, more striking is that 86% of the male and 94% of the female cyclists identify themselves as white (ibid.) Oosterhuis (2016) presents a historical review of how the socio-cultural context has a significant impact on the choice of bicycling within a western context and makes the argument that effective bicycle policy requires that policy-makers acknowledge the meanings, perceptions, and attitudes that surround bicycling. Oosterhuis (2016: 242) demonstrates how the bicycle has been perceived as a poor person's vehicle among low-income groups in Europe, which creates a socio-cultural barrier to bicycling. In line with this argument, Hoffman (2016) describes how space, ethnicity, and cultural meanings influence the perception of bicycling in the US. She describes bicycling as a rolling signifier, which means that its meaning changes in different spaces. She criticizes the perception of bicycling as unilaterally positive or a neutral form of mobility (ibid.) While bicycling generally is described as an environmentally friendly economic development tool associated with female freedom within white cultures, bicycling is perceived among many minorities as shameful and culturally associated with poverty (Hoffmann 2016). Similarly, Pedalista (2017) demonstrates how norms influence bicycling. Pedalista (2017) examined bicycle patterns in an immigrant-dense suburb in Stockholm, Sweden, finding that 50% of the women never bike compared to 28% of the men. Fifty-five percent of the women over 35 can bicycle compared to 95% of the men of the same age, but 50% of the women that cannot bike would like to learn. Gender norms and attitudes constrain bicycle use among minority groups, as many feel that bicycling is for children and it can be considered embarrassing for elders to take up bicycling (ibid.) Also, bicycling is not perceived to be suitable for teenage girls and is furthermore associated with an inner-city lifestyle (ibid.)

Lewin et al. (2006) examined the mobility of immigrants in Sweden, finding that 45% of newly arrived men had a driver's license that was valid in Sweden compared to 20% of the women (Karlsson 2012; Lewin et al. 2006). Furthermore, foreign-born women, especially Africans, Arabs, and eastern Europeans, are less likely than other ethnic groups to know how to bike. About thirty-five percent of the female respondents stated their inability to bike compared to 5% of the men, although 24% of the women wanted to learn how to bike (ibid.) Foreign-born women are also more likely to feel unsafe in traffic regardless of transportation (Persson et al. 2015; Lewin et al. 2006; Trafikanalys 2016). Consequently, Van der Kloof et al.

(2014) stress how foreign-born women are most likely to experience TRSE. To enhance accessibility and increase the possibilities of bicycling, it is important that different perceptions of safety is accounted for in planning (Trafikanalys 2016; Emond 2009 a,b; Garrard 2003).

Correspondingly, Lubitow (2017) and Community Cycling Center (2012) have investigated how minority women face certain barriers to bicycling in Portland, Oregon. They stress how race and gender intersect and draw attention to the institutional racism of policies, practices, and structures that put non-white groups at a disadvantage. Women of color oscillate between feeling simultaneously visible and invisible or empowered and frightened while bicycling (ibid.) Many minority women expressed concerns about harassment, fear of physical violence, and racially motivated aggression from other cyclists or motorists (Lubitow 2017: 16; 21). Minority women felt visible when biking due to the absence of people of color on the paths and simultaneously invisible due to the absence of people of color in bicycle advertisements, signs, and programs (ibid: 24). Taken together, the importance of acknowledging the differentiated norms and the concerns of ethnic minorities who have earlier been ignored in planning is stressed in numerous studies (Golub et al. 2016; Aldred et al. 2016; Larsen 2016; Martens 2007).

This summary of previous research suggests that bicycling has great potential to solve issues of TRSE without causing negative environmental impacts. However, if policy wishes to succeed in making the transport system, the *physical environment*, more ecologically sustainable and simultaneously address issues of unequal accessibility, it must acknowledge the *social environment* of how perceived or actual barriers of safety, norms, attitudes, and physical abilities differ between groups.

7. Theoretical and analytical framework

This chapter clarifies the theoretical and analytical tools and approaches. As noted by the way of introduction, the theoretical and analytical framework consists of Bacchi's (2009) policy analysis approach: "What is the Problem Represented to be" (WPR), modified with a social exclusion framework consisting of TRSE theory. The WPR approach is both a theory and a guide to the research design, data collection, and posing of questions. The TRSE framework delimits the analysis and is used as an analytical tool to examine silences in policy, which can be used to assess the potential for Swedish bicycle planning to realize the SI potential of bicycling.

7.1. Bacchi's "What is the problem represented to be" (WPR) approach

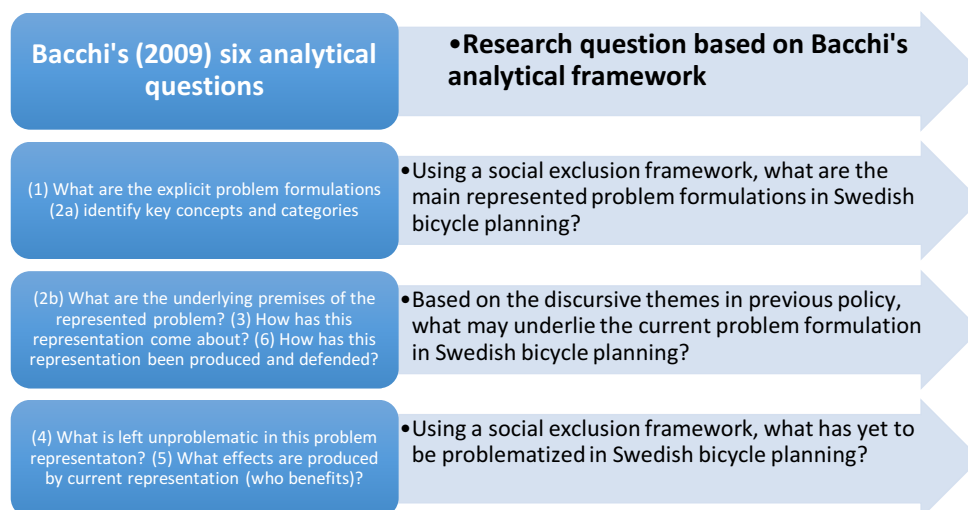
The WPR approach to policy analysis is within a Foucauldian social constructivist analysis on governmentality. In this approach to governmentality, the idea of policy policy is that it embodies the role of the state. According to Bacchi, policies address what authorities consider to be societal problems and what actions such problems require. This approach examines how issues are represented in policy, why certain issues are represented as problems, and why certain issues are absent. This means not looking at something as a problem but rather how something is constituted as one (Foucault 1977; Deacon 2000; Bacchi 2012; 2008; 1999; 2009; Bletsas & Beasley 2012). The WPR approach seeks to expose the creation of meaning that is involved in policy-making and challenges the view that governments respond to objective problems, which makes this an approach for critical interrogation of policy. What gets problematized is what gets prioritized, which means that silences within problem-formulations translate into non-action (Bacchi 2007).

Bacchi (2009; 2007; 1999) believes that problem-formulations can be traced to discourse, which means that problem-formulations depend on context. This is associated with Foucault's (1977) understanding of discourses and knowledge production (Freire 1972: p. 132; Montero & Sonn 2009: 80; Koopman 2007). This approach is not a conventional discourse analysis, but similar to Foucault's, it deals with how texts and formulations create meaning (ibid.) Discourses, as Foucault stresses, influence what we perceive as true and false, which has indirect limits on the perception of what is conceivable and possible in a certain time and space.

Discourse can be perceived as the limits for what can be said and as a framework for how things are understood (Bacchi 1999; Foucault 1977). According to Bacchi (2009; 2007), such processes and knowledge that are often taken for granted should be visualized in a process of analysis. The discursive frame is represented by where and how knowledge has been produced and defended; In this thesis, previous policy and documents relevant to bicycling and SI found in the background section will represent this discursive frame of bicycle planning. These SI themes set the general discursive frame and demonstrate what expressions of SI are perceived to be relevant, which serves as a way to understand the underlying premises of bicycle planning (Bacchi 2009; 2007).

Bacchi's (2009) analytical framework consists of six questions which were modified into three research questions as displayed in the figure below.

Figure 1. *Bacchi's modified analytical framework*



Source: My figure based on Bacchi 2009

This framework is applied to a policy analysis of how social exclusion and inclusion are expressed or silenced within 23 Swedish national, regional, and local bicycle plans, which determine the potential to realize the SI potential of bicycling. The first research question includes examining what is explicitly expressed or problematized in bicycle planning, which shows the plans priorities. The analysis of explicit problem-formulations is limited to the overarching *aim* of the plan or strategy, the expressed *challenges* and *benefits* of bicycling, and explicit *objectives*. This will show if and how issues of SI are problematized and if the benefits and challenges with bicycling are translated into action. The second research question examines

how bicycle policy relates to the discursive frame of previous policy. The last research question seeks to determine what is silenced. This is guided and delimited by the social exclusion framework clarified in the next section (Bacchi 2009; 2007).

7.2. Transport related social exclusion theory

As shown under previous research, the concept of social inclusion and exclusion within the frame of transportation has a long history in urban studies, human geography, and transport studies. Within such studies, SI refers to the ability and ease with which people can participate adequately in society. Adequate participation refers to economic, social, political, and cultural life, as well as the ability to maintain sufficient physical and mental health (Schwanen et al. 2015; Neutens et al. 2010; Páez et al. 2012). Comparatively, sociologists such as Levitas et al. (2007) refer to social exclusion as the lack of, denial of, or inability to participate in such activities. Researchers within urban studies, human geography, and transport studies present causal links between social exclusion and transportation. For example, transport geographers Preston and Rajé (2007), inspired by Sen (2000), explain social exclusion as an absence of access to social opportunities rather than an actual lack of opportunities. Improved accessibility to important transport nodes by sufficient transport services can, therefore, prevent social exclusion. Hui and Habib (2014) demonstrate how people that experience less social exclusion experience high levels of accessibility. Similarly, Farrington and Farrington (2005), as well as Farrington (2007), demonstrate how SI and accessibility are linked. Likewise, Keyon et al. (2002: 210ff), within the frame of transport and mobility scholars, define TRSE as the process that prevents people from societal participation due to lack of accessibility to opportunities, social networks, and services.

A related concept to TRSE is accessibility, which should not be confused with mobility. Litman (2003; 2017) and Lucas (2012), researchers within transportation studies, stress how mobility refers to physical travel while accessibility refers to the ability to reach services, destinations, goods, and activities. It is the social institution's responsibility to answer people's accessibility needs, and policy-makers should improve the ease of reaching transport nodes (accessibility), rather than the ease of moving (mobility) (Litman 2017; 2003). Social exclusion is also closely linked to equality, which refers to equal rights regardless of social belonging or background; All people should be able to translate resources into opportunities for societal participation, which requires the analysis of the spatial context and specific needs (Litman 2017; 2003).

Levy (2013) an urban development researcher specializing in the institutionalization of social justice, develops the concept of accessibility. She believes that transportation is a way to allocate city space, but not all people enjoy the same opportunities to easily, safely, and freely travel depending on factors such as gender, class, age, religion, sexuality, and ethnicity. Consequently, she stresses that the concept of transport accessibility should be regarded as a matter of economic access, socio-cultural aspects related to public safety, and the ease and comfort to use the transport system, rather than physical movement (Levy 2013). Thus, infrastructure investments do not automatically increase universal accessibility; sociocultural, socioeconomic, geographical, physical conditions, and the experience of security all need to be highlighted in the discussion about the development of the transport system (Murphy 2012; Oosterhuis 2016).

In other words, TRSE is not equally applicable to all groups of people. The concept of social exclusion is, by its dualism, however, also problematic as it tends to homogenize groups as either excluded or included (Levitas 1996; Neutens et al. 2010; Páez et al. 2012). Nonetheless, TRSE is especially applicable to the disabled, low-income groups, people living in automobile-dependent areas, people unable to drive a personal car, the unemployed, and those groups that are especially exposed to racism and classism (Litman 2003; Chapman & Weir 2008). The likelihood of social exclusion intensifies in accordance with how many of these factors apply to a group or individual (ibid.) Recent immigrants from developing countries often possess several of the above features and can experience social exclusion due to language barriers, social isolation, racism, poverty, unemployment, and low rates of car ownership and license holding which are even lower for women (Litman 2003: 7; Chapman & Weir 2008). Similarly, Uteng (2009), a Norwegian mobility researcher, demonstrates how TRSE overlaps with ethnicity, gender, integration, and economic exclusion using the example of how non-western immigrant women experience TRSE in Oslo, Norway. She stresses how social exclusion has an ethnic, gendered, and economic dimension and is a result of education level, family structure, access to income, participation in the labor market, failures to update public transportation options, and insufficient access to daily mobility options (ibid.)

The figure below summarizes the different bases for social exclusion which is related to both the physical and social environment. It is a modification of the research of Church et al. (2000) on the links between transport and social exclusion. The framework is complemented by the research of Uteng (2009), Litman (2003), and Champman and Weir (2008) with the ethnic dimension of exclusion and social groups especially at risk. This is the operationalization of the

TRSE framework, which will guide the analysis the last research question regarding the silences SI, or what is left unproblematized within bicycle planning following Bacchi's approach.

Figure 2. *Typology of the basis of TRSE*

Physical exclusion	<ul style="list-style-type: none"> • The nature of the system can impose physical barriers restricting its use, to for example the disabled, children, or non-drivers.
Geographical exclusion	<ul style="list-style-type: none"> • Living in peripheral locations, having long distances to transport nodes, and poor transportation connections can lead to exclusion.
Economic exclusion	<ul style="list-style-type: none"> • The cost of traveling can postulate a barrier for reaching certain destinations or using certain modes.
Time-based exclusion	<ul style="list-style-type: none"> • Domestic responsibilities, labor, and other commitments can limit people's opportunities to travel freely.
Fear-based exclusion	<ul style="list-style-type: none"> • Perceived insecurity or the fear of crime or hazard can restrict people from reaching certain sites transport modes.
Ethnic exclusion	<ul style="list-style-type: none"> • Attitudes, norms, racism, language, inability to bike or drive, unemployment, social isolation etc. can lead to exclusion.
Groups at risk	<ul style="list-style-type: none"> • Disabled, low income groups, unemployed, non-drivers, women, and recent immigrants are especially at risk of experiencing exclusion.

Source: Based on a synthesis of Church et al. 2000; Uteng 2009, Litman 2003, Chapman & Weir 2008

Based on how the dimensions in Figure 2 are acknowledged within problem-formulations in the bicycle plans, the potential to realize the SI potential with bicycling differ. As the WPR approach states, what is included within problem-formulations of the aim, challenges, benefits, and objectives, is what gets prioritized. In light of this theoretical review, limited accessibility in terms of transport possibilities does not necessarily result in a problem, but can together with social and economic inequalities lead to TRSE. Conversely, socially inclusive planning should consider whom it benefits and excludes, how it benefits the marginalized or non-drivers in terms of accessibility, and what barriers exist to accessibility.

8. Method

In this chapter, the methodological approaches of this thesis will be clarified regarding the data collection consisting of a quantitative content analysis, sampling method, and data analysis, followed by an ethical discussion. The first section clarifies the theoretical approach commonly referred to as induction and deduction, followed by a discussion of the trustworthiness and quality of this research.

8.1. Induction and deduction

The difference between an inductive and deductive approach can be explained as the former aims to generate new theory from the data, while the latter aims for testing theory (Finfgeld-Connett 2014: 343; Bryman 2012). This research mainly embraces deductive approaches. The first step of the data collection consisted of a quantitative content analysis that was based on a deductive approach, searching for previously selected concepts in policy documents. The data analysis consisted of a policy discourse approach that was also deductive, where I sought to interrogate the underlying premises of and silences within problem-formulations in bicycle planning. The theoretical and analytical framework of Bacchi's WPR approach and TRSE framework influenced the research design, research questions, and data collection. However, rather than testing a theory for either simple acceptance or rejection, the theory guided, supported, and delimited the research (Finfgeld-Connett 2014: 343; Bryman 2012; Hsieh & Shannon 2005).

8.2. Validity and reliability

Validity and reliability are two concepts which describe the scientific quality and trustworthiness of the study. Validity refers to measuring what is relevant, i.e. are the processes, tools, and data appropriate to the theoretical framework. Reliability refers to conducting measurements in a reliable and systematic manner and using the right techniques so that someone else could replicate the study. Validity and reliability differ in quantitative and qualitative research. In qualitative research, validity and reliability refer to describing that data has been collected and processed systematically and honestly, while in quantitative research, validity and reliability refer to the measurements being free from bias and not time-dependent (Stemler 2001; Finfgeld-Connett 2014: 343; Hermann 2008; Elo et al. 2014). However,

according to the epistemology of this thesis, research can never be objective, which means that applying rigor requires reflexivity of biases in sampling, data collection, and demonstration.

Two issues that challenge the validity of the quantitative analysis are possibilities of overlooking significant information within the content that is not covered by the word-search or the use of unrepresentable concepts (Bryman 2012). The concepts were identified from the social exclusion framework and from earlier policy content related to the SI themes. I have also identified synonyms and declensions of the concepts, and examined the context in which the concepts were used. As the quantitative analysis consisted of a total population based on deductively selected concepts, someone else could replicate the study, which strengthens its reliability (Finfgeld-Connett 2014).

Even though Bacchi's WPR approach is not a conventional discourse analysis, it seeks to analyze how meaning is created through how explicit problem-formulations are produced and what silences such formulations contain. Applying validity and reliability in discourse analysis is more complex as they reject positivist epistemological claims for truth. However, demands for validity are not dismissed, and validity is strengthened if the theory and methodology logically relate to the research question (Jørgensen & Phillips 2002: 117; Burr 2004). The validity of this study is therefore strengthened by the consistency of my questions and research design with Bacchi's analytical and theoretical framework as well as by the use of a social exclusion framework to delimit and guide the analysis. According to Bergström and Boréus (2012), reliability is dependent on the researcher being accurate in all stages and carefully reporting the procedures. There are some critical points to consider: the analysis should be solid and based on a variation of texts. This paper consists of literature from different disciplines to grasp different perspectives. The analysis should be comprehensive, which means that the questions posed should be answered fully. The analysis should be transparent to allow the reader to test the claims. This is strengthened by the analysis consisting of official documents that are free for anyone to use, the transparent selection process, and quotes from the bicycle plans that allow the reader to judge the reliability of the analysis. Also, the analytical framework has clear steps, which enables the tracing of the interpretations made (Jørgensen & Phillips 2002: 173; Börjesson 2003; Silverman 2009).

8.3. Data collection - Quantitative content analysis

This section clarifies the data collection process of this thesis. Against the background of Bacchi's WPR approach and TRSE framework, I sought to investigate how issues of social inclusion or exclusion were emphasized in Swedish bicycle planning. The first step sought to provide an overview of how such issues were expressed within Swedish bicycle planning and consisted of a quantitative content analysis of how inclusive themes were expressed. To strengthen reliability, I examined the total population of official separate bicycle documents on a national, regional, and local level.

Content analysis is a systematic data reduction technique, wherein the first step is to convert qualitative data into quantitative data. This is a useful method to systematically search for themes within a large number of texts put into categories (Stemler 2001: 8; Bernard & Ryan 2010; Finfgeld-Connett 2014). The method used was as a word frequency counting technique. A directed approach guided the deductive selection of categories based on the TRSE framework and previous policy content related to the SI themes (Finfgeld-Connett 2014). These categories were: women/woman, integration/integrate, diversity, immigrant(s)/foreign born(s), ethnicity, equality/equity/equal/equitable, and social (sustainability). One point was scored for each time a concept was mentioned, complemented by the number of categories that were scored in. Hence, if woman was mentioned three times and equality seven, ten points were scored within two categories. However, mentioning the word equality seven times was not equivalent to SI; This method was merely descriptive and could not explain patterns or reveal underlying discourses. Conclusions of the SI potential of the planning could not be drawn or act as results without contextualization and a qualitative analysis. Hence, these findings guided the selection process of the qualitative analysis to strengthen representativeness (Bryman 2012).

8.3.1. Quantitative data analysis

This section clarifies the quantitative results, which gives an overview of how SI is included within Swedish bicycle planning. Approximately one-third of Swedish municipalities had a separate bicycle document. At the regional level, three out of four municipalities had a separate bicycle document. Sixty-three out of 119 local and regional plans scored zero points, which indicates that SI was not systematically included. The figure below summarizes the quantitative data analysis.

Table 2. *Summary of quantitative data analysis*

Summary of quantitative data analysis on national, regional and local level					
Level	Have plans	At least 1 points	At least 2 points	At least 5 points	At least 10 points
National	1 out of 1	-	-	-	1
Regional	15 out of 21	10	8	5	1
Local	104 out of 290	46	36	20	7
Level		At least 1 category	At least 2 categories	At least 3 categories	At least 4 categories
National		-	-	-	1
Regional		10	6	4	1
Local		46	30	11	1

Source: Quantitative content analysis, the quantitative findings in its entirety can be found in the Appendix

Upon further examination of each level, the national bicycle strategy from 2017 scored 26 points in four categories. The word “woman/women” was mentioned eight times, “diversity” five times, “immigrant(s)/foreign born” 12 times, and “social (sustainability)” one time. At the regional level, 15 out of 21 regions had a separate bicycle document, of which five scored zero points and ten scored at least one point. Eight scored at least two points, six of those scored in at least two categories. Five regions scored at least five points, each one in at least two categories. Only one plan scored over 10 points: Kronoberg (2017), scoring 35 points in four categories. The second best region was Örebro (2015), scoring seven points in three categories.

At the local level, 104 out of 290 municipalities had a separate bicycle document, of which 46 scored at least one point. Thirty-six municipalities scored at least two points and 30 of those scored in at least two categories. Twenty municipalities scored at least five points, everyone in at least two categories. Seven municipalities scored over ten points, everyone in at least two categories. Jönköping (2017) received the highest score with 23 points in three categories, followed by Umeå (2009) scoring 16 points in two categories. Lomma (2016) scored 15 points in three categories, Falkenberg (2015) scored 14 points in three categories, Ludvika (2011) scored 12 points in three categories, Gothenburg (2015) scored 11 points in four categories, and Kramfors (2017) scored 11 points in three categories.

8.4. Analyzed plans

This section clarifies the selection process of the analyzed plans. To strengthen the reliability and validity of the findings, the analyzed documents had to be representative for the research questions, which is to say representative of the SI potential of Swedish bicycle planning (Bergström & Boréus 2012; Bryman 2012). The selection was partly based on the quantitative

findings and partly on random selection. National, regional, and local planning were analyzed respectively. As the levels have responsibility respectively to improve the conditions for bicycling, one level alone would not be representative for either bicycle planning or SI potential (Trafikverket 2016). The analyzed plans are summarized in the figure below.

Table 3. *Analyzed Swedish bicycle plans at national, regional, and local level*

Analyzed Swedish bicycle plans at national, regional and local level			
National level	Document	Year	Score (categories)
National	Bicycle strategy	2017	26 (4)
Regional level			
Skåne	Bicycle strategy	2017	2 (1)
Stockholm	Bicycle plan	2014	3 (1)
Västra Götaland	Bicycle strategy	2015	3 (2)
Kronoberg	Bicycle strategy	2017	35 (4)
Örebro	Bicycle strategy	2015	7 (3)
Uppsala	Bicycle strategy	2017	0
Blekinge	Bicycle strategy	2017	0
Local level			
Malmö	Bicycle program	2012	1 (1)
Stockholm	Bicycle strategy	2013	0
Gothenburg	Bicycle program	2015	11 (4)
Jönköping	Bicycle program	2017	23 (3)
Umeå	Bicycle program	2009	16 (2)
Lomma	Bicycle plan	2016	16 (2)
Falkenberg	Bicycle strategy	2015	14 (3)
Ludvika	Bicycle plan	2011	14 (3)
Kramfors	WC plan	2017	11 (3)
Halmstad	Bicycle plan	2017	0
Gnesta	WC plan	2014	0
Värgårda	Bicycle strategy	2017	0
Karlstad	Bicycle plan	2014	0
Gällivare	Bicycle plan	Undated	0
Hudiksvall	Bicycle policy	2016	0

The national strategy from 2017 represents the total population at the national level that will be analyzed. To obtain a representative picture of the SI potential on the regional and local level, this analysis is based on documents with varied potential that are representative of the majority of the population. Skåne, Västra Götaland, and Stockholm were analyzed on the regional level, and Malmö, Gothenburg, and Stockholm were analyzed on the local level. These plans were chosen because they represent the majority of the Swedish population, have the highest rates of immigrants and high rates of segregation, which may result in TRSE (SCB 2008: 52; Westin 1999). The two regions of Kronoberg and Örebro, and the six municipalities of Jönköping, Umeå, Lomma, Falkenberg, Ludvika, and Kramfors, with the highest scores, represent a high

SI potential. The sample representatives for a low SI potential are the zero-scoring plans. As these plans are unsuitable for ranking, these were selected using a digital random generator. A total of five plans at the regional level and 58 on the local level received a number and were randomly selected. The two random numbers at the regional level were 1: Uppsala and 4: Blekinge; at the local level 12: Halmstad, 8: Gnesta, 54: Vårgårda, 20: Karlstad, 10: Gällivare, and 15: Hudiksvall. The representativeness of the sample was tested by examining a few random documents. It was concluded that adding more documents to the analysis would not affect the findings as there were evidently only so many ways of integrating SI in bicycle planning.

8.5. Qualitative data analysis

This section clarifies the process of the qualitative data analysis. The national, regional, and local levels were analyzed respectively. As the plans included varied uses of SI, the regional and local plans were divided into three groups: low, medium, and high, based on their potential to realize the SI potential with bicycling. This analysis was based on the findings from the quantitative content analysis and the analysis of the documents based on the SI themes in Table 1, page 12, and social exclusion dimensions in Figure 2, page 27. The potential to realize the SI potential of bicycling is dependent on that policy addresses the basis for exclusion and issues of unequal access for different groups and plan accordingly (Bacchi 2009). Low potential means few problem-formulations related to SI; Medium potential means some problem-formulations related to SI that need development; And high potential means several problem-formulations related to both the SI benefits and challenges with bicycling. The table below displays the respective groups.

Table 4. *Groups of bicycle plans based on the potential to realize the SI potential with bicycling*

Groups of bicycle plans based on the potential to realize the social inclusion potential with bicycling		
Regional level		
Group	SI potential	Plans
One	Low	Stockholm, Blekinge
Two	Medium	Västra Götaland, Skåne, Uppsala
Three	High	Kronoberg, Örebro
Local level		
Group	SI potential	Plans
One	Low	Hudiksvall, Karlstad, Halmstad, Stockholm, Malmö
Two	Medium	Vårgårda, Gällivare & Gnesta
Three	High	Jönköping, Umeå, Lomma, Falkenberg, Ludvika, Kramfors, Gothenburg

As Bacchi (2009; 2007) suggests, the analysis focused on who is represented within which problem-formulations. The analysis was delimited to four areas within the bicycle documents: The first was the overarching *aim* of the strategies that represent the purpose and approach of the plan. The second was the expressed *benefits* of bicycling showing if and in what ways the SI potential was addressed. The third area was the expressed *challenges*, representing what was considered a problem and if the physical and social challenges to realize the SI potential with bicycling were acknowledged. The fourth area focused on the explicit *objectives* representing if and how the potential and challenges of bicycling were translated into actions.

The analysis was organized following the research questions in the analytical framework retrieved from Bacchi's approach in Figure 1, page 24. Research question one was more descriptive and looked into the explicit problem-formulations within the expressed *aim*, *challenges*, *benefits* and *objectives*. Research question two was linked to the discursive frame found in Table 1 page, 12, and examines how bicycle planning related to the general discursive context of bicycle planning and SI. The third research question examined silences regarding SI, limited by the TRSE framework Figure 2, page 27 (Bacchi 2012; 2009; 2007; 1999). The theoretical and analytical framework was used as a tool to delimit what was analyzed in the documents and how.

8.6. Ethical considerations

Although this research was not ethically challenging in a traditional sense, as with research associated with children or people in vulnerable situations, there were still significant ethical challenges regarding what knowledge research produces (Jørgensen & Phillips 2002; Fairclough 1992). The core of the existing dilemma has its roots in the work of feminist scholars on sameness versus difference. The dilemma was to what extent researchers should emphasize differences between social groups when discussing inequality without homogenizing or victimizing (Transgen 2007: 23). Scholars rooting for sameness run the risk of reducing the attainment of political gender goals by downplaying structural barriers to equality. Scholars rooting for difference run the risk of reproducing essentialist stereotypes and universalize the lived experiences of a certain group (Walby 2003: 7; Transgen 2007: 22ff; Rose 1997; Harding 2004; Butler 1993). This dilemma is applicable to social exclusion, as the concept by its dualism homogenizes groups as either excluded or included (Levitas 1996; Neutens et al. 2010; Páez et al. 2012). To reject group-based inequalities makes targeted actions impossible, yet the

acceptance of differences may reproduce essentialist notions of certain people as marginalized, which would impose victimization and impair agency. Therefore, this thesis elaborated on how social and economic inequalities together with limited transport accessibility can lead to social exclusion, rather than discussing individuals as excluded or marginalized. There is no correct answer or easy solution to this dilemma. However, this is an important ethical discussion on the researcher's role to create and change the discourse. Fairclough (1992) stresses that it is crucial to consider such ethical questions since research is employed to alter discursive practices and change.

9. Results and analysis

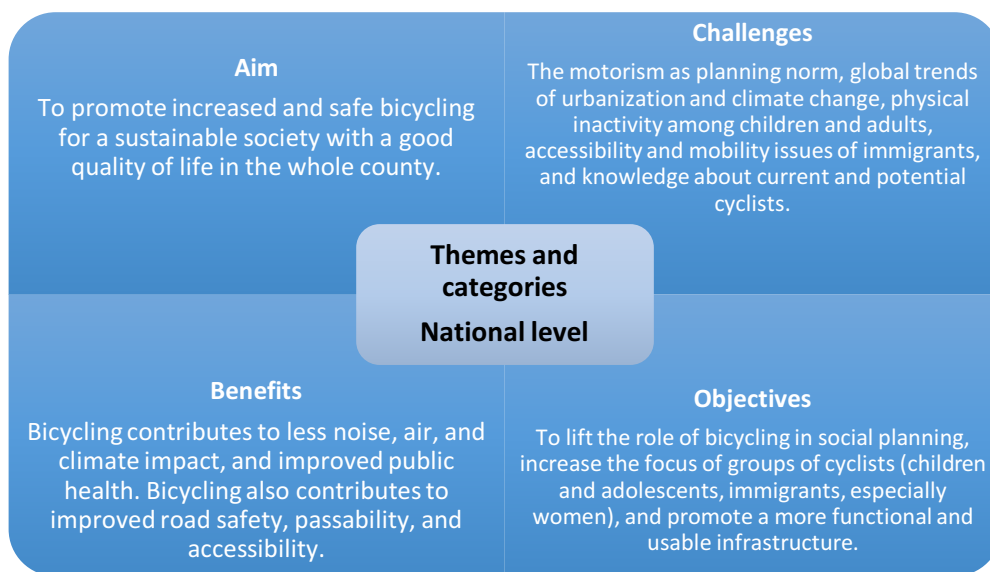
The result and analysis followed the structure of the analytical framework in Figure 1 page, 24, complemented with the TRSE framework in Figure 2, page 27, and the discursive frame depicting the SI themes expressed in previous policy in Table 1, page 12. The national level was firstly analyzed, followed by the regional and local level. The regional and local level was organized in three groups respectively; low, medium, and high, based on their SI potential. In accordance with Bacchi's approach, themes and categories within the document were firstly identified and were summarized in a figure followed by a review of the findings. The figure gives an overview of the main problematized themes within the plans' overarching *aim*, *challenges*, *benefits*, and *objectives*. This was linked to research question one and was followed by research question two examining how bicycle planning relates to the discursive frame of previous policy. The third research question examined silences regarding SI limited by the TRSE framework (Bacchi 2012; 2009; 2007; 1999). Note that the quotes from the bicycle plans are my own translation from Swedish to English. To enable systematic referencing, I referred to the municipalities and regions by their name and year.

9.1. National level

On the national level, the Swedish national bicycle strategy was analyzed. The themes and categories found within the strategy were depicted in a figure, summarizing how the aim of the strategy, expressed challenges, benefits, and objectives were problematized. This was related to research question one and was followed by research questions two and three.

9.1.1. Themes and underlying premises

Figure 3. *Themes and categories on the national level*



Source: Summary of the Swedish government, bicycle strategy 2017

As Figure 3 shows, the overarching aim of the Swedish national bicycle strategy was to promote increased and safe bicycling for a sustainable society with a good quality of life in the whole country (The Swedish government 2017: 6). The main challenges to realize such an aim was expressed as motorism as a norm in social planning; global trends of urbanization and climate change; physical inactivity among children and adults; accessibility and mobility issues for immigrants, especially immigrant women; and insufficient knowledge about current and potential cyclists (ibid: 10ff). The benefits with SI relevance was expressed as positive effects on public health, and the provision of better passability and increased accessibility (The Swedish government 2017: 6ff). Such problem-formulation shows an understanding of the complex nature of bicycling including challenges with both social and physical characteristics.

As depicted in Figure 3, there were three objectives within the national strategy relevant to the SI potential of bicycling. The first objective was to lift the role of bicycling in social planning (ibid: 16ff). This objective problematized issues of bicycle parking adapted to different bicycles and cyclists, and the possibilities to combine bicycling with public transport (ibid.) The second objective was to gather knowledge of and increase the focus on existing and potential groups of cyclists. Persons with disabilities were identified as having differentiated conditions and needs that should be considered, just as rural areas have different conditions and needs compared to urban areas (ibid: 10). The national bicycle strategy further problematized how men and women had different travel patterns, and how different factors influenced bicycle use, thereof

“Individual and socio-cultural factors such as income and the status of the bicycle within the social context of the individual; costs for biking in terms of travel time, theft-risk and costs for using alternative modes of transportation (...); physical design” (The Swedish government 2017: 11).

Such problem-formulation shows an awareness of how bicycling is dependent on several complex factors related to the social context of the individual. To comprehend the socio-cultural context of bicycling gives improved potential to realize the SI potential with bicycling, as that acknowledges the differentiated needs and barriers. There were further three prioritized areas within the second objective that emphasized different accessibility levels and barriers to bicycling. The first was to increase bicycling among children and adolescents for the sake of children’ mental and physical health (The Swedish government 2017: 18). The second area was to motivate current cyclists to ride more and to motivate people who are not biking to start (ibid: 18). The third prioritized area of the second objective was to create better conditions for asylum seekers, new arrivals, and other foreign-born to bike as

“Driver’s license and vehicle holding immigrants are lower than among natives, which leads to poorer opportunities for travel by passenger car (...) some groups of immigrants, e.g. women, cannot bike but have the will to learn” (The Swedish government 2017: 10).

As driver’s license holding was recognized as low, bicycling was perceived as having positive effects on immigrants’ accessibility to work, education, and leisure and a way for improved health. The third objective of the national bicycle strategy was to create a more functional, user-

friendly, and safe infrastructure. This objective included a well-connected network based on the needs and preferences of different groups (ibid: 20f). These formulations of benefits, challenges, and objectives show how the Swedish national bicycle strategy included and prioritized different groups within their problem-formulations. Differentiated accessibility, challenges, and barriers were recognized, which according to the theoretical and analytical framework is crucial to realize the SI potential with bicycling (Murphy 2012; Oosterhuis 2016).

From these problem-formulations, the national bicycle strategy expressed the SI themes from earlier policy documents including themes of social sustainability, accessibility, equality, social groups, social inclusion, anti-discrimination, health, children, disabled, elderly, and integration. The national bicycle strategy specified the significance of increased and safe bicycling, based on *national transport policy's* (2008/09:93) *functional goal* of accessibility as well as its *consideration goals* of safety, environment, and health. The anti-discrimination theme (referred to the *anti-discrimination policy*, 2008:567) expressed in the *functional goal*, was evident in the national bicycle strategy, as the strategy argued that bicycling should be planned with different user groups in mind and was perceived to improve the social inclusion of immigrants (The Swedish government 2017: 18ff). The possibilities for children, the disabled, and the elderly to safely access and utilize the transport system was also stressed in the national bicycle strategy. This emphasis can be traced to the discursive frame of earlier policy documents (e.g., Prop.2008/09:93; SOU 2012:70; Prop.2005/06:160). Similarly, the Swedish Public Health Agency (SPHA) reports were mirrored in the emphasis on physical activity for health, as well as on the built environment and social planning for enabling active transportation (2006, 2007, 2008). The SPHA reports also referred to SI themes, stating that all groups regardless of age, gender or ethnicity should have access to active transportation. This goal was also apparent within the national strategy, which has sufficiently embodied the SI themes that were expressed in previous policy documents.

9.1.2. Silences of social inclusion

The national bicycle strategy succeeded in addressing most of the SI themes expressed in earlier policy within the problem-formulations. However, there were social dimensions that were silent according to the TRSE framework (Church et al. 2000; Uteng 2000; Litman 2003; Chapman & Weir 2008). For example, the dimension of fear-based exclusion was only elaborated on in terms of how cyclists are an exposed group. How women, for example, have certain safety

concerns, or how ethnic minorities feel the most unsafe in the transport system was absent (Karlsson 2012; Lewin et al. 2006; Uteng 2009; Lubitow 2017; Litman 2003: 7; Chapman & Weir 2008). This means that the issues of differentiated perceived safety were not recognized as a prioritized issue. To exclude the fear-based dimension would not improve the accessibility of groups that generally face the barrier of perceived unsafety, which is especially applicable to immigrant women (ibid.) As the goal of bicycling is to improve accessibility (Prop.2008/09:93), the fear-based dimension of exclusion would be crucial for policy to acknowledge.

The time-based dimension of social exclusion was also absent from the problem-formulations, even though research has demonstrated that such a dimension is very relevant to the transport sector from a gender equality perspective (McGuckin & Nakamoto 2005). However, examining the discursive frame reveals the time-based dimension of exclusion to be absent, which can explain the aforementioned silence. Similarly, the economic dimension of exclusion was only partially observable, as the choice of bicycling was recognized as being dependent on income, the costs of bicycling, and the costs of alternative modes. The objective of enabling non-drivers to bike could also have positive effects on the economic dimension of exclusion, as the bicycle is an inexpensive means of transportation that can improve accessibility to work and school (Church et al. 2000). However, a discussion of how economically disadvantaged groups may benefit from bicycling due to its cost-efficiency was lacking. This means that targeted actions towards improving the accessibility and SI of economically disadvantaged groups are not to expect from these problem-formulations.

The national strategy did, however, recognize how the choice of bicycling is dependent on the status of bicycling within the socio-cultural context of the individual. This is in line with the arguments of Hoffman (2016), Oosterhuis (2016), and Pedalista (2017), who stress that among economically disadvantaged and ethnic minority groups, bicycling tends to be perceived as a form of lower status transportation for the poor or children. The discussion of *how* and *for whom* the socio-cultural context influences bicycle use was, however, not problematized further. As the theoretical framework of Bacchi (2008; 2009; 2012) clarifies, to simply state that the socio-cultural context influence bicycle use and not problematize how, in what ways, and to whom, does not necessarily improve the potential to realize the SI potential with bicycling. This is because the realization of the SI potential of bicycling with targeted actions requires an understanding of how the complex social context that surrounds bicycling works.

What strengthened the potential to realize the SI potential with bicycling was expressed objectives related to the geographical, physical, and ethnic dimensions of exclusion. Objectives that could have positive effects on the physical dimension of exclusion by making the transport system suitable for more people include: making plans that acknowledge how needs and conditions to bicycling differ based on several factors; aiming to reach new groups of potential cyclists; and arranging bicycle classes for non-drivers (The Swedish government 2017: 11, 16ff; Church et al. 2000). Achieving the objectives of linking transport nodes together and improving the possibility of combining bicycling with public transport could have positive effects on geographical exclusion because that could enable to travel longer distances to new locations (ibid.) Finally, achieving the objective of improving immigrant accessibility to biking could have positive effects on the ethnic dimension of exclusion (Uteng 2009), as that would provide a cost-efficient and reliable mode of transportation with improved accessibility to society that does not require a driver's license. Furthermore, the national bicycle strategy has represented several groups at special risk for experiencing TRSE. The strategy was within their problem-formulations representative of women, children, elderlies, people with disabilities, non-drivers, immigrants with specific regard to women, and potential new groups of cyclists. The national bicycle strategy emphasized, at least partly, most of the represented social exclusion dimensions and represented groups within the problem-formulations. As the theoretical and analytical framework shows, a high problematization of SI themes and social exclusion dimensions means that SI is part of the government's priorities. This means that the strategy has an inclusive approach that has a high chance of realizing the SI potential of bicycling.

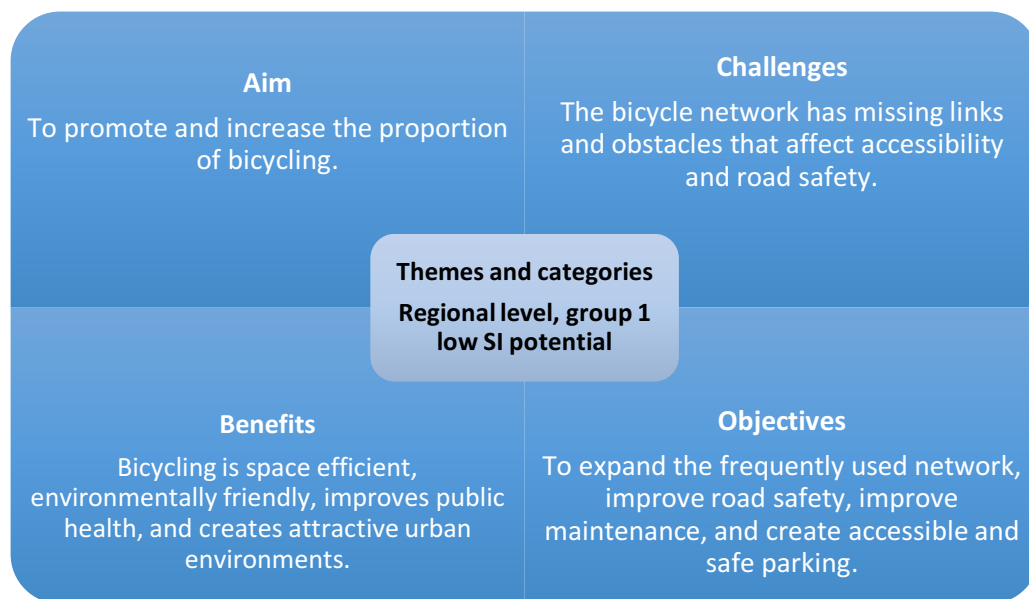
9.2. Regional level

On the regional level, Stockholm, Blekinge, Skåne, Västra Götaland, Kronoberg, Örebro, and Uppsala were analyzed and divided into three groups: low, medium, and high, based on their potential to realize bicycling's SI potential. The themes and categories found within the plans were depicted in a figure in each group, summarizing how the aim of the plans, expressed challenges, benefits, and objectives were problematized. This was related to research question one and was followed by research questions two and three.

9.2.1. Group one, low potential to realize SI potential: Stockholm & Blekinge

9.2.1.1. Themes and underlying premises, group one regional level

Figure 4. Themes and categories, regional level group one, low SI potential



Source: Based on a synthesis of Stockholm 2014, Blekinge 2017

Examining the regional plans in group one with an SI lens revealed few relevant problem-formulations. As Figure 4 shows, the plans of Stockholm and Blekinge overall had similar focus and an overarching aim of promoting and increasing bicycling (Stockholm 2014: 11ff; Blekinge 2017: 5ff). The main perceived challenge of reaching such an aim was ensuring the attractiveness of bicycling, which is affected by insufficient infrastructure that negatively

affected accessibility and safety. This showed that the social environment that surrounds bicycling was not problematized, but rather, how the physical environment acted as a barrier to bicycling. The physical environment is certainly a barrier; sufficient infrastructure is a minimum requirement for bicycling (Pucher & Buehler 2009). However, social barriers can restrict people from bicycle use regardless of sufficient bicycle infrastructure which needs to be problematized (Godefrooij et al. (2009). Similarly, the main benefits with bicycling within the problem-formulations were expressed as benefits for an attractive city in terms of its space-efficiency, non-pollution, and improved public health (Stockholm: 2014: 5ff; Blekinge; 2017: 7ff). Such problem-formulations was not representative of the SI potential of bicycling and showed that issues related to an attractive city were considered the problem that bicycling should solve. This was representative for the economic and environmental sustainability pillars rather than the social, which contradicts the national goal with bicycling according to Prop. 2008/09:93 of improve accessibility. The objectives mirrored the overall absence of SI and consisted of mainly infrastructure fixes with few considerations for users. The single problem-formulation that touched on the SI potential of bicycling was in the Stockholm plan that vaguely mentioned the differentiated perceptions of safety by women, and certain needs of people with disabilities (Stockholm: 2014: 8, 36).

In these two plans, there were few problem-formulations that related to the SI potential, as most SI themes that were expressed within previous policy were absent. Rather, bicycling was problematized in relation to solving issues related to an attractive city. Publication 2013:137, which serve as a guide for regional bicycle planning, is vague in its guidance on actual content and focuses more on the structure and design of bicycle planning, which could explain the absence of SI themes. These two plans referred to the overarching transport goal (Prop.1997/98:56; Prop.2008/09:93) and to the *national transport policy's* (2008/09:93) *functional goal* of accessibility and *consideration goals* of safety, environment, and health. However, accessibility did not refer to any specific social group, which showed that SI themes were not expressed within the problem-formulations. The underlying discursive premises of previous policy was not to blame for the lack of the SI themes within the plans problem-formulations. The problem was rather the trend of a neglecting the social pillar within the transport sector (Polk 2001; Wittbom 2009; Trivector 2015; Lubitow & Miller 2013).

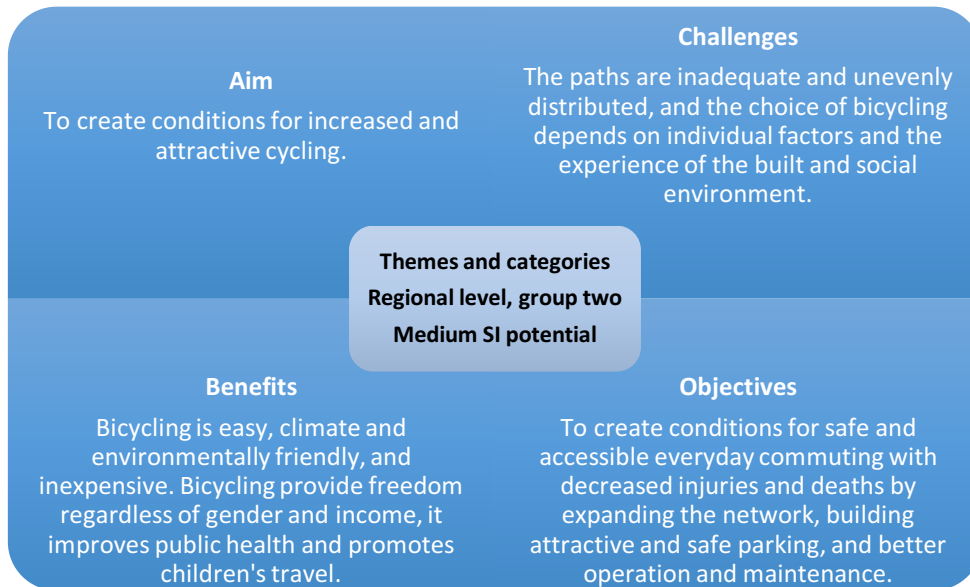
9.2.1.2. *Silences of social inclusion, group one regional level*

The Blekinge and Stockholm plans did not discuss the SI potential of the bicycle. The only example of problem-formulations related to the social exclusion dimensions was the Stockholm plan that touched upon the physical and fear-based dimension when elaborating on the issue of perceived safety of women and the emphasis on people with disabilities. However, the plan did not problematize these issues satisfactorily enough to realize the SI potential, since the plan did not take the analysis further. The SI potential is dependent on how different groups are represented and benefit from investments, which these plans did not display within their problem-formulations (Murphy 2012; Preston and Rajé 2007; Hui and Habib 2014; Lineburg 2016; Jennings undated). The plans problematized issues related to an attractive city and climate friendliness, rather than bicycling's usefulness to the individual or accessibility. This is contradictory since equal accessibility is the main national goal with bicycling according to Prop.2008/09:93. This is highly noteworthy in a Region as Stockholm, comprising the biggest city and capital of Sweden, with a high diversity of people and severe segregation problems. This way of problematizing the challenges and benefits of bicycling gives these regions poor prospects not only to realize bicycling's SI potential but also to reach the goal to increase bicycling, as the plans did not discuss the heterogeneous needs of cyclists. To realize such potential, these regions would have to reexamine the bicycle and its potential to contribute to a more inclusive society, look further into individual incentives for choosing the bicycle, and explicitly consider the needs and preferences of underrepresented groups (Aldred et al. 2016; Schwanen et al. 2015; Neutens et al. 2010; Páez et al. 2012).

9.2.2. Group two, medium potential to realize SI potential: Västra Götaland, Skåne, and Uppsala

9.2.2.1. Themes and underlying premises, group two regional level

Figure 5. Themes and categories, regional level group two, medium potential to realize SI potential



Source: Based on a synthesis of Västra Götaland 2015, Skåne 2017, Uppsala 2017

The regional plans in group two had, to a greater extent, included the themes of SI and addressed the dimensions of social exclusion within their problem-formulations. As Figure 5 shows, the general aim of the three regional bicycle plans was to create conditions for increased and safe bicycling. These plans acknowledged that physical planning was an important tool for achieving sustainability objectives, business development, environmental objectives, gender equality, and public health (Västra Götaland 2015: 3; Skåne 2017: 3, 8; Uppsala 2017: 5). The Skåne and Uppsala plans further recognized the inclusive benefits with bicycling within their problem-formulations: “To learn how to bike is a freedom that is possible for almost everyone regardless of income, background or gender” (Skåne 2017: 7), and “The bicycle is a transport mode available to almost everyone regardless of age, income, background, education or gender” (Uppsala 2017: 8). Those problem-formulations showed an awareness of the SI potential with bicycling, but not the challenges to realizing that potential. The availability of bicycling was taken for granted which neglected the complex social context that influence bicycle use.

The overall expressed objectives of the regional plans in group two included building infrastructure that is designed with different cyclists in mind, taking care of the willingness to bike, behavioral measures to change habitual patterns, targeted actions among low-cycling groups, improved safety, and increasing bicycling among children and adolescents (Västra Götaland 2014: 3, 19ff; Skåne 2017: 19ff; Uppsala 2017: 16). Similar to the other two plans, Skåne recognized the need for safe paths where children travel (Uppsala 2017: 22; Västra Götaland 2014: 4, 12) but the Skåne plan took a step further and recognized the need for adults and children to learn how to bike regardless of background or settlement (Skåne 2017: 3; 19). These problem-formulations included measures related to both the physical and social environment. However, the low-cycling groups were not identified and the willingness to biking was taken for granted, which neglected how needs and barriers differ between social groups. Even though some expressions within the plans problem-formulations related to the SI potential, these were mostly related to the inclusive benefits of bicycling and neglected the challenges to realizing such potential.

Nonetheless, the SI themes expressed in previous policy were observable. The strategies were all influenced by the *national transport policy's* (2008/09:93) reference to the goals of a socio-economically efficient and long-term sustainable transport system. The plans expressed the bicycle as a tool for individual freedom available to almost anyone regardless of income, background, and gender, hence, the plans mentioned several of the relevant SI themes, as of the *functional* and *consideration* goals from 2008/09:93. Also, SI themes could be traced to reports from the Swedish SPHA (2006:14; 2007:3; 2008:31) including the realization of physical activity for health, and the importance of social and physical planning to enable active transportation. However, several SI themes expressed in these reports and policies with regard to social groups, segregation, integration, and anti-discrimination were absent within these plans problem-formulations. This shows that such issues were not part of the prioritized problems of which bicycling could have positive effects on.

9.2.2.2. *Silences of social inclusion, group two regional level*

The three regional plans with a medium potential to realize the SI potential did, to some extent, included problem-formulations beneficial to realizing the SI potential as noted about bicycling. These plans somewhat acknowledged the physical dimension of exclusion by developing the transport system with different cyclists in mind. Individual and environmental factors were acknowledged to influence bicycle use, and groups such as children, the elderly, the disabled,

and men and women were represented within the problem-formulations. However, several groups at risk of experiencing TRSE, such as immigrant women or socio-economic weak groups, were not included within the problem-formulation and would, according to the theoretical framework of Bacchi, not be prioritized (Church et al. 2000; Litman 2003; Chapman & Weir 2008). Bicycling was described as available to all regardless of gender, age, and income, while research shows that the SI potential cannot be realized by simply acknowledging such potential. Goals and objectives must be anticipated through a problematization of the challenges and benefits of bicycling for different groups, which the plans were silent about (Preston and Rajé 2007; Hui and Habib 2014; Lineburg 2016; Jennings undated; Church et al. 2000). This resulted in objectives without targeted actions to improve accessibility for groups at risk of TRSE.

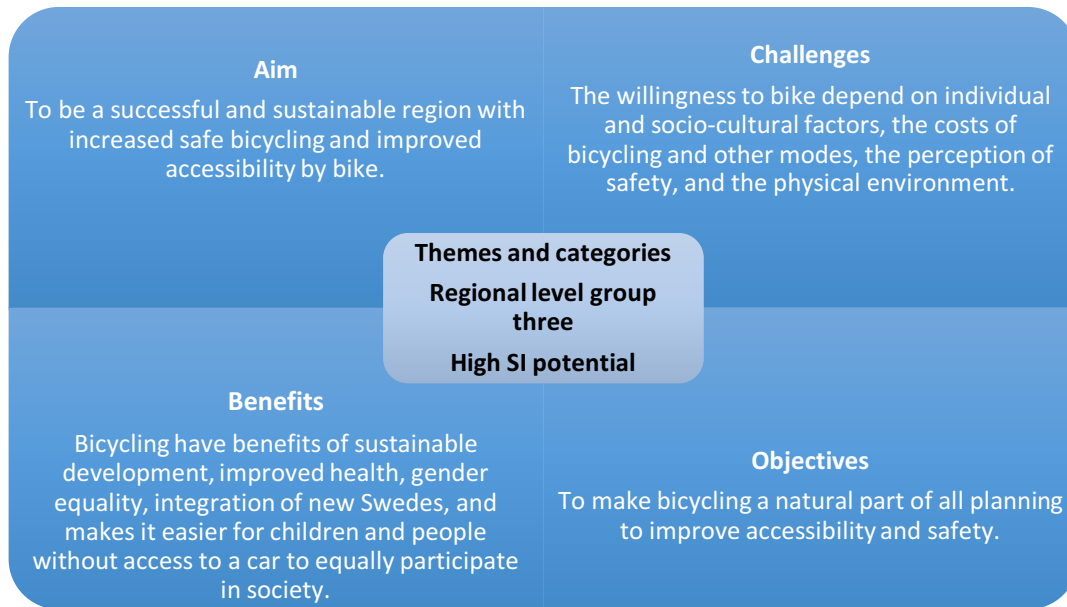
The fear-based dimension of exclusion was silent within the problem-formulations as the issue of perceived safety was absent. This means that the plans did not acknowledge how the differentiated experience of the transport system can impose a barrier to bicycling and lead to TRSE (Emond 2009 a,b; Garrard 2003; Camp 2013; Church et al. 2000). The time-based and ethnic dimensions of exclusion were also absent from the plans problem-formulations. While the time-based dimension was absent within the discursive frame, the ethnic dimension was clearly included in the discursive framework within the national transport policy's functional goal, as per Ordinance 1986:856. Furthermore, the plans were silent regarding the economic dimension of exclusion, as they took for granted that the bicycle was an automatically available transport mode regardless of income. Such assumptions neglect how social characteristics interact and create barriers to bicycle use. As Oosterhuis (2016) stresses, economically disadvantaged groups may have different perceptions of bicycling as a form of transportation for poor persons, which may create a normative barrier to such use.

While these plans included some SI themes and dimensions within their problem-formulations, these problem-formulations were mostly traceable to the inclusive benefits of bicycling and forgot to problematize the challenges to realize such potential. Improving the ability of these regions to realize the SI potential of bicycling could be achieved through a deeper analysis and problematization of barriers to accessibility. This includes how different groups experience the transport system, how socio-economic disadvantaged groups could benefit from bicycling, and the setting of accordingly explicit goals.

9.2.3. Group three high potential to realize SI potential: Kronoberg and Örebro

9.2.3.1. Themes and underlying premises group three regional level

Figure 6. Themes and categories, regional level group three, high potential to realize SI potential



Source: Based on a synthesis of Kronoberg 2017, Örebro 2015

The regions of Kronoberg and Örebro in group three had a more extensive inclusion of SI within their problem-formulations. There were, however, some significant differences between the Kronoberg and Örebro plans. The Kronoberg plan had a more comprehensive problematization of the SI potential with bicycling and how that could be realized. The Örebro plan was in-between group two and three but elaborated to a greater extent the individual challenges to improve accessibility with bicycling (Schwanen 2015; Neutens et al. 2010; Páez et al. 2012).

The Kronoberg plan acknowledged how the choice of bicycling depended on several factors within the problem-formulations, which indicates an awareness of the challenges of increasing bicycling for all. As Figure 6 shows, acknowledged factor that was relevant to the SI potential were: individual and socio-cultural factors including childhood conditions, income, the living context, and the image and acceptance of bicycling; the cost of bicycling and alternative modes; and if bicycling was perceived to be safe (Kronoberg 2017: 17ff). The Kronoberg plan also recognized that women and men had different perceptions of safety and travel patterns where

women had more complex travel patterns with multiple stops often related to domestic responsibilities (Kronoberg 2017: 19). Finally, the Kronoberg plan elaborated on bicycle patterns among the foreign-born and stressed the lack of reliable statistics that depict variations between immigrants and Swedes. This plan recognized how immigrants were a heterogeneous group, and, how foreign-born women were generally less likely to know how to bike (Kronoberg 2017: 21). These problem-formulations showed an awareness that bicycling does not automatically increase universal accessibility and that bicycle patterns and the perception of bicycling differ based on several factors. Such problem-formulations increase the potential to realize the SI potential with bicycling as it recognizes the complex social context that influence bicycle use.

The Örebro plan also acknowledged how the choice of bicycling was dependent on bicycling being an attractive choice for the individual within the problem-formulations (Örebro 2015: 5). Furthermore, the Örebro plan acknowledged the importance for children and the disabled to travel safely, and how bicycling increases the possibilities for equal societal participation (Örebro 2015: 5, 7). It also highlighted bicycling's cost efficiency, individual cost savings, and health benefits, but did not problematize how economically weak groups may benefit from bicycling (Örebro 2015: 5). These formulations touch upon groups that are at risk for experiencing TRSE, such as non-drivers. However, while the SI benefits with bicycling was recognized within the problem-formulations, the challenges to realizing such potential needed further problematization.

The objectives of Örebro and Kronoberg mirrored the expressed benefits and challenges, and respective acknowledgment of SI. These plans, especially Kronoberg, showed a comprehensive problematization that relates to the SI potential of bicycling. Both plans argued that infrastructure measures should make sure that smaller areas are tied together with the special needs of rural areas in mind, and that bicycling needed a strengthened role in planning, with safety, accessibility, and equity in mind. Kronoberg, however, showed a deeper understanding of the prevalent challenges to realize such inclusive potential (Kronoberg 2017: 2, 5, 18; Örebro 2015: 4ff).

The Kronoberg plan touched upon most of the SI themes that were expressed in the discursive frame of previous policy. The plan's design appears to have been guided by publication 2013:137 *Guidance for Regional Bicycle Plans*, while the plan's content seems to have been guided by the national bicycle strategy (2017). The social themes in the national

strategy mirrored the social themes in the Kronoberg plan, which were social sustainability, accessibility, gender equality, equity, social groups, social inclusion, anti-discrimination, health, children, disabled, elderly, and integration. The main documents that previously expressed such themes were the *national transport policy* (2008/09:93) with regard to the *functional goal* of accessibility and consideration goals of safety, environment, and health. The *anti-discrimination* themes in the *functional goal* referable to the anti-discrimination policy (2008:567) were also observable within the Kronoberg plan's elaboration on different group patterns, concerns, and the need to plan accordingly.

The Örebro plan had a slightly different SI emphasis although its planning design was similar both to Publication 2013:137 and to the *national transport policy* (2008/09:93) with regard to the *functional goal* of accessibility of men and women and *consideration goals* of safety, environment, and health (Örebro 2015: 6). The focus on the accessibility of children and non-drivers to society can be traced to the functional goal, while the emphasis on physical activity for health can be traced back to the SPHA reports (2006, 2007, 2008). The Örebro plan did not, however, include the broad inclusion of social groups, which the SPHA reports do.

9.2.3.2. *Silences of social inclusion, group three regional level*

The Kronoberg plan touched upon several of the dimensions of social exclusion within the problem-formulations, namely the ethnic dimension when it elaborated on the different patterns among foreign-born and Swedes, which most other plans neglected. However, the Kronoberg plan stressed that the knowledge of different groups of cyclists such as immigrants was lacking. This may explain the silence regarding the barriers that ethnic minorities may face, such as the inability to bike, norms, and attitudes against bicycling, and racism (Litman 2003: 7; Chapman & Weir 2008; Uteng 2009; Lubitow 2017; Lewin et al. 2006; Pedalista 2017). Even though the lack of reliable research may be a solid explanation for the silence within the problem-formulations, the specific barriers that immigrants face need to be problematized to improve their accessibility with bicycling. Actions to improve the possibilities for immigrants to bike may otherwise fail if they neglects the complex social context that surrounds bicycling that restricts the ability of some people to bike.

The Kronoberg plan also somewhat acknowledged the time-based and fear-based dimension of exclusion when elaborating on how bicycling may improve the complex routes that are taken by women. However, the basis for unequal travel patterns was not problematized further, which undermined the gender equality perspective, as such problematization did not

question the basis of the exclusion (McGuckin & Nakamoto 2005; Polk 2001; Church et al. 2000). Furthermore, the Kronoberg plan touched upon the geographical, physical, and economic dimension (Church et al. 2000). The plan acknowledged how the cost of bicycling could influence the choice of bicycling, but was silent regarding how economically disadvantaged groups may benefit from cycling within the problem-formulations. The accessibility of economically disadvantaged groups was therefore not a priority. However, the plan acknowledged how the choice of bicycling depended on individual and socio-cultural factors such as income or living context, which translated into objectives of enhancing the accessibility of several different groups (Litman 2003; Chapman & Weir 2008). Such problematizations have been an unusual element in Swedish bicycle planning but are a prerequisite to realizing the SI potential with bicycling. Even though certain themes and dimensions of SI could have been problematized further, such as the socio-cultural challenges to realize the SI potential with bicycling, the discursive frame that surrounds this planning area may suggest that such an expectation would be too ambitious. The Kronoberg plan did a decent job of including bicycling's SI potential when expressing benefits, challenges, and objectives, which means that the plan has a higher likelihood of realizing bicycling's SI potential.

The Örebro plan still has work to do to reach the same level of SI potential. It problematized several of the bases for exclusion such as the physical, geographical, and economic dimensions while excluding the time-based, ethnic, and fear-based dimensions (Church et al. 2000; Uteng 2009). The Örebro plan elaborated on the importance of bicycling in improving the societal accessibility and health of non-drivers and children. It also cited the overarching objective of a transport system that pays attention to the different transport needs of men and women within the problem formulation. The plan's problem-formulations was, however, silent regarding how different social groups or men and women differ with regard to factors of perceived safety, barriers to accessibility, and travel patterns. Infrastructure investments do not automatically increase universal accessibility, conditions such as the socio-cultural, socio-economic, geographical, and the physical conditions as well as the experience of security need to be problematized further (Murphy 2012; Oosterhuis 2016). With a developed problematization of such themes, the Örebro plan would be well-placed to realize the SI potential of bicycling.

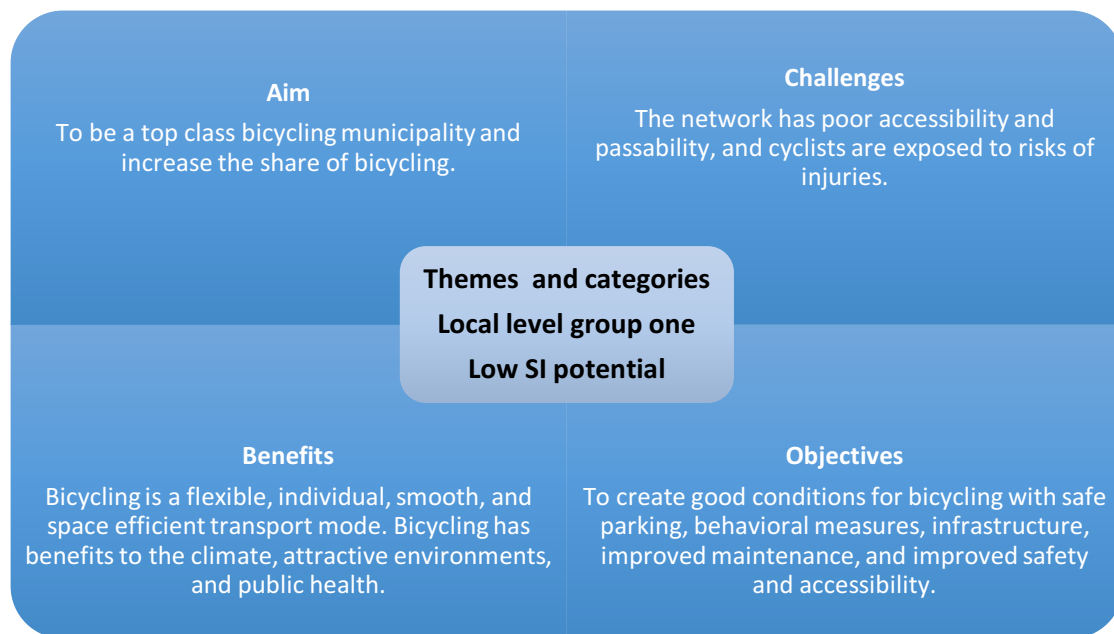
9.3. Local level

On the local level, Hudiksvall, Karlstad, Halmstad, Malmö, Stockholm, Vårgårda, Gällivare, Gnesta, Jönköping, Umeå, Lomma, Falkenberg, Ludvika, Kramfors, and Gothenburg were analyzed and divided into three groups: low, medium, and high, based on their potential to realize bicycling's SI potential. The themes and categories found within the plans were depicted in a figure in each group, summarizing how the aim of the plans, expressed challenges, benefits, and objectives were problematized. This was related to research question one and was followed by research questions two and three.

9.3.1. Group one, low potential to realize SI potential: Hudiksvall, Karlstad, Halmstad, Stockholm, and Malmö

9.3.1.1. Themes and underlying premises, group one local level

Figure 7. Themes and categories, local level group one, low potential to realize SI potential



Source: Based on a synthesis of Halmstad 2017, Karlstad 2014, Malmö 2012, Hudiksvall 2016, Stockholm 2013

Group one on the local level was signified by a general absence of problem-formulations related to SI. There were, however, differences between the municipalities. The Malmö, Stockholm, and Karlstad plans lay between groups one and two as they included some SI themes, whereas the Hudiksvall and Halmstad plan included none. As Figure 7 shows, the overall aim of the

plans in group one was to be a top-class bicycling municipality with an increased bicycle share (Halmstad 2017: 21; Karlstad 2014: 4; Malmö 2012: 2; Hudiksvall 2016; Stockholm 2013: 4). The overall challenges that were problematized were poor passability and accessibility within the bicycle network and the exposure and risk of injuries for cyclists. Similarly, bicycling was described as a flexible, individual, smooth, and space efficient transport mode with benefits to the climate, public health, and an attractive city (Hudiksvall 2016; Halmstad 2017: 1; Malmö 2012: 3, 7; Karlstad 2014: 5; Stockholm 2013: 6, 14). These formulations did not problematize the challenges or the benefits of bicycling in terms of its SI potential, but rather how infrastructure imposes a barrier to bicycling and how increased bicycling benefits an attractive city. While the physical environment is an important factor for increased bicycling, some face social barriers in addition to barriers related to the physical environment, which was neglected in these plans (Oosterhuis 2016; Hoffman 2016; Garrard et al. 2008: 55; Aldred et al. 2016)

The plans' objectives, as Figure 7 show, mirrored this lack of SI with an emphasis on infrastructural and behavioral measures. The Stockholm plan mentioned an aim to reach groups unused to bicycling that could benefit from bicycling within the problem-formulations. However, the plan did not identify these groups, which gives poor prospects for targeted actions toward such groups. The Malmö plan extended such action by carrying out attitudinal reviews on people's thoughts about bicycling and acknowledge the heterogeneity of cyclists, which improves the possibilities for targeted actions (Hudiksvall 2016; Halmstad 2017: 1, 3, 16; Karlstad 2017: 7, 17, 24; Malmö 2012: 3, 12ff; Stockholm 2013: 7, 11). The Karlstad plan alone approached the SI dimension of perceived safety within their problem-formulations and stated that insecurity can be a contributing factor for not biking and limit people's freedom of movement. The Karlstad plan also envisioned bicycle training for groups that could not bike (Karlstad 2017: 8, 17, 22). Such problem-formulations shows an understanding that it is not the actual or physical safety that influences the perception of bicycling, but individual feelings of safety. Yet, the plan did not problematize which groups that feel the most unsafe, which groups that cannot bike, which groups that may benefit from bicycling, and whose freedom of movement that is at stake. This decreases the potential of targeted actions toward groups at risk of TRSE, because of the lack of perceived safety or inability to bike.

In this group, there were few problem-formulations that related to the SI potential, which showed that social exclusion and unequal accessibility were not considered a prioritized problem. Rather, issues related to an attractive city and climate friendliness were problematized

of which bicycling was considered a solution. This contradicts the *national transport policy*, prop 2008/09:93, which stated that improved and equal accessibility was the main goal with increased bicycling. Previous policy content could explain the presence of certain themes, such as the emphasis on infrastructure, an attractive city, health, children, and climate. Nonetheless, previous policy could not explain the absence of SI, as such themes were often expressed as well. The formulations within the plans were traceable to the *consideration* and *functional goals* from the *national transport policy* 2008/09:93. However, the SI themes were absent from the discussion of accessibility, health, and safety and rather focused on how bicycling was beneficial to the physical environment. Rather than blaming the underlying premises of bicycle planning, the explanation for this absence could instead be found in a general failure to operationalize the social pillar within the transport sector. According to Lubitow and Miller (2013), there has been a limited focus on mobility and accessibility gaps between social groups in policy initiatives. Issues related to justice, inclusion, and equality have been overlooked in favor of technological solutions that favor the economic and environmental dimension (Miller 2013). This group exemplifies these research results.

9.3.1.2. *Silences of social inclusion, group one local level*

Within this group, bicycling was not problematized in terms of its SI potential. Successful SI requires that projects and policies problematize whom investments will benefit with an emphasis on the marginalized (Lineburg 2016; Jennings undated; Golub et al. 2016; Hoffman 2013; Godefrooij & Schepel 2010: 29; Murphy 2012: 37ff; Litman 2017; Litman & Burwell 2006). Such problem-formulations were absent within these plans; instead, barriers related to the physical environment were emphasized. However, these plans did address the basis for exclusion to some extent. The emphasis on children and the differentiated infrastructural or environmental needs of different cyclists could be traced to the physical dimension of exclusion (Church et al. 2000). The Karlstad plan (2017: 8) touched upon the fear-based dimension of exclusion when problematizing perceived safety as a barrier to bicycling (Church et al. 2000). Still, the plan was silent about how the perceptions of safety differ between groups. Correspondingly, the objective of traffic training for non-cyclists was silent regarding specific groups that could benefit from bicycling; this is unfortunate as traffic training could have positive effects on the physical dimension of exclusion and mobilize people without access to a car (ibid.) The Malmö plan (2012: 8) recognized that infrastructure should be designed with different cyclists in mind and based on citizen opinions. To embrace the opinions of citizens

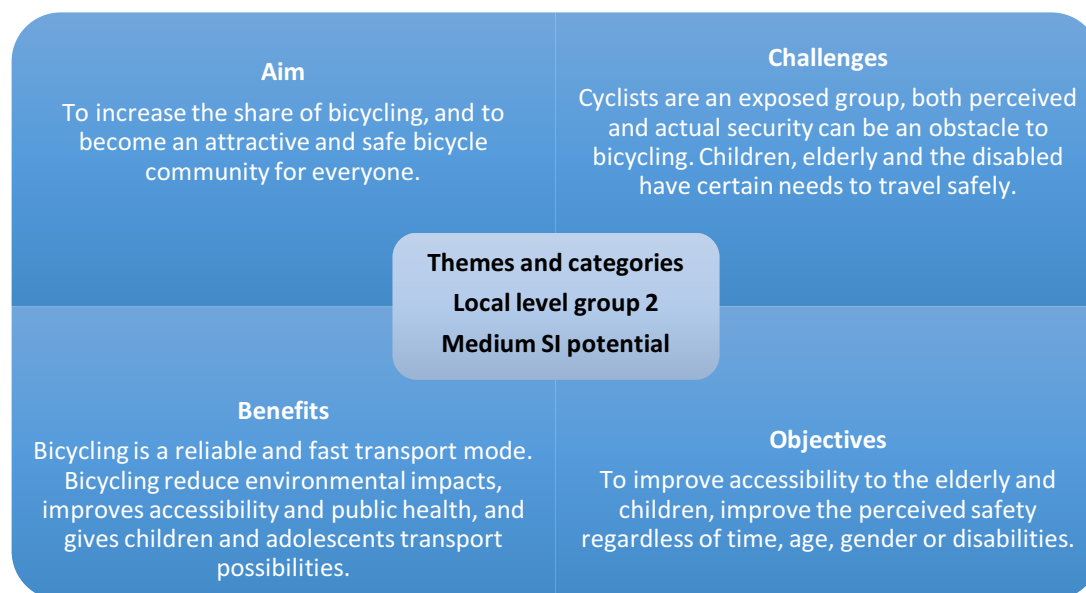
and plan accordingly could improve the chances of realizing the SI potential of bicycling in terms of the physical dimension of exclusion, as that would make the transport system adapted to different people's needs (Farrington and Farrington 2005; Farrington 2007; Church et al. 2000).

The Malmö and Karlstad plan at least touched on the SI potential and challenges of bicycling within their problem-formulations, although this was not translated into explicit objectives that could realize that potential. The Halmstad and Hudiksvall plans did not problematize themes or dimensions of SI other than mentioning traffic safety and public health in general terms. These plans would have to rethink bicycling and its role in order to be able to realize the SI potential of bicycling.

9.3.2. Group two, medium potential to realize SI potential: Vårgårda, Gällivare, and Gnesta

9.3.2.1. Themes and underlying premises, group two local level

Figure 8. *Themes and categories, local level group two, medium potential to realize SI potential*



Source: Based on a synthesis of Vårgårda 2009, Gnesta 2014, Gällivare undated

The municipalities in group two included themes of SI to a greater extent within their problem-formulations. As Figure 8 shows, the overall aim of these plans was to increase the share of bicycling and turn their respective areas into attractive and safe bicycle communities for everyone (Vårgårda 2009: 5; Gnesta 2014: 4). All plans in group two problematized to some degree the challenge of how different perceptions of safety can act as a barrier for bicycling, and how everyone regardless of time, age or gender should feel safe (Vårgårda 2009: 27; Gnesta 2014: 6; Gällivare undated: 5). The Vårgårda plan stresses how improved perceived safety can increase the number of cyclists, which requires work on attitudes and aggressive traffic behavior, and sufficient lighting. Road safety, accessibility, and road design were stressed in all of the plans as especially important in environments where the elderly, people with disabilities, and children travel (Vårgårda 2009: 4, 5; Gnesta 2014: 7; Gällivare undated: 9). This shows a problematization of the challenges of perceived safety through the perspective of different groups. However, *how* different groups differ in perceived safety is not problematized, which shows an absence of prioritizing certain exposed and vulnerable groups. These problem-formulations do, however, show an understanding of how safety may be

enhanced and how groups such as children and the disabled have different needs and conditions to be able to access society.

The benefits of bicycling with relevance to the SI themes were cited to be increased accessibility, positive effects on public health, and the provision of reliable transportation for children and adolescents (Vårgårda 2009: 4; Gnesta 2014: 3). The objectives mirrored the challenges and benefits: More bicycle connections should be built and existing links should be improved in a way that feels safe for everyone regardless of time, age, gender, or disabilities (Vårgårda 2009: 5; Gnesta 2014: 7; Gällivare undated: 9).

Against these problem-formulations, the expressed SI themes within the discursive framework of earlier policy documents were partly expressed in the plans in this group. These themes are children, the elderly and disabled, physical activity, health, and the importance of perceived safety of different social groups. The Vårgårda plan (2009: 7) refers to the guiding documents VGU (2015:087), and TRAST (2015; 2007). However, it did not include the SI themes expressed in TRAST such as social exclusion, segregation, integration, and social groups. Instead, it included the themes within VGU: infrastructure, the disabled, and children. The Gällivare plan (undated: 1) referred to the GCM handbook, another guiding document for local bicycle planning, which displays social themes of accessibility, public health, safety, climate, environment. The handbook also acknowledges different social groups, a theme that was somewhat apparent within the Gällivare plan.

All three plans in group two can be traced to the overarching national *transport policy goal* of a socio-economically efficient and long-term sustainable transport supply for citizens and businesses throughout the country (Prop.1997/98:56; Prop.2008/09:93). The plans followed the structure of the *consideration* and *functional goals* by perceiving the bicycle as a tool to enhance accessibility; designing infrastructure with different people in mind; and paying attention to transport safety, environmental objectives, and health. The emphasis on physical activity, health, as well as physical and social planning to enable active transportation can further be traced to the SPHA reports (2006:14; 2007:3; 2008:31). Overall, the local plans with medium use of SI stayed within the discursive frame of how SI and bicycling were expressed in previous policy. However, the plans omitted several SI themes of segregation, integration, and anti-discrimination.

9.3.2.2. *Silences of social inclusion, group two local level*

The local bicycle plans in group two touched upon some of the dimensions of exclusion but were silent on others. For example, the fear-based dimensions of exclusion were acknowledged as all three plans problematized how the perceptions of safety can create a barrier to bicycling. Within such problem-formulations, the safety concerns of children, elderly, and the disabled were recognized; perceived safety should apply regardless of time, age, or gender (Vårgårda 2009: 4, 5; Gnesta 2014: 7; Gällivare undated: 9; Church et al. 2000). Such problem-formulations show that several groups that are at risk of TRSE are represented, which improves the plans' prospects of realizing bicycling's SI potential. Also, the plans included physical dimensions of exclusion by expressing how the infrastructure should be adapted to different users, and more specifically how children, the elderly and the disabled have certain needs. Lastly, the geographical dimension was recognized within the problem-formulations, as the plans stated that new and improved links could enable bicycling at more locations (Church et al. 2000). However, the economic, ethnic, and time-based dimensions of exclusion were absent from the problem-formulations, even though the first two were visible within the discursive frame. The plans were silent regarding vulnerable social groups and the specific needs and barriers of, for example, socio-economic weak groups or immigrant women. As these plans did not plan for improved accessibility with people at risk of TRSE in mind, the reduction of social exclusion can not be expected (Oosterhus 2016; Lineburg 2016; Golub et al. 2016; Hoffman 2013). Rather, as with many other plans, the Vårgårda, Gällivare, and Gnesta plan presumed that bicycling is and should be beneficial and accessible regardless of age, disabilities, and gender. Even if such formulations include an SI dimension, the plans fail to problematize how to realize such potential (ibid.)

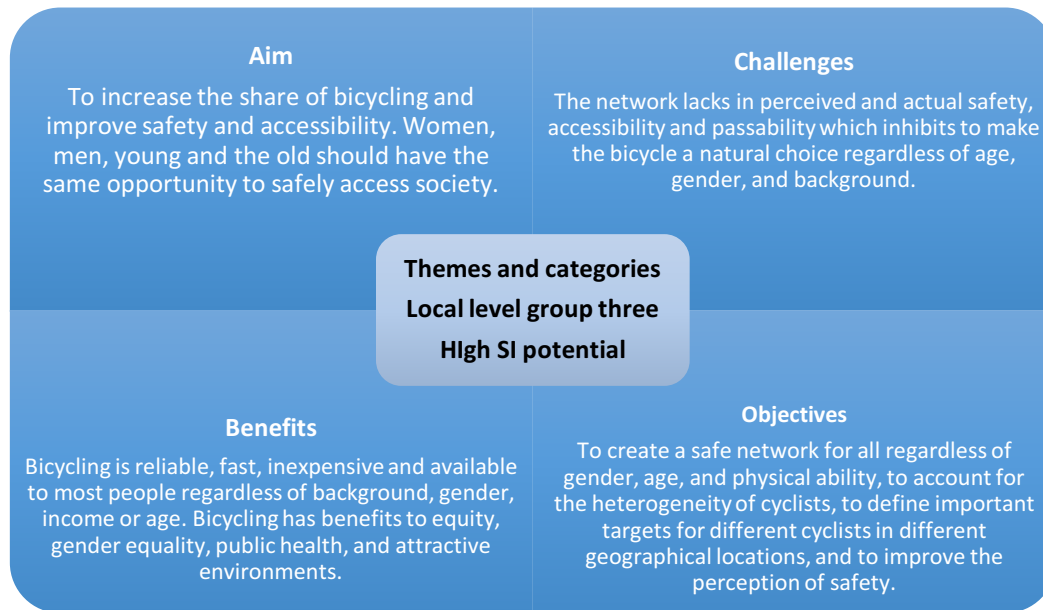
Overall, to improve the potential to realize bicycling's SI potential, the Vårgårda, Gällivare, and Gnesta plan need to conduct a more comprehensive problematization of how bicycling would benefit people that currently lack societal access and what challenges that would imply. As the methodological discussion demonstrates, this method cannot speak to the effects of policy, although silences translate into absence of action. Therefore, problem-formulations that translate into concrete objectives for how economically disadvantaged people, non-drivers, unemployed, immigrants, or other people at higher risk of TRSE to benefit from bicycling, could have positive effects on the economic and physical dimension of exclusion (Litman 2003; Chapman & Weir 2008). A discussion of important transport nodes to different groups within

the problem-formulations and the planning of infrastructure accordingly could have positive effects on the geographical dimension (Church et al. 2000; Aldred et al. 2016). Furthermore, a discussion of how transport patterns and domestic burdens create discrepancies in the abilities of different people to freely travel could translate into objectives of improving infrastructure and tying together roads used by people experiencing time poverty. Such a problematization and its consequent objectives could have positive effects on the time-based dimension (Church et al. 2000; Emond et al. 2009 a,b; Kunieda & Gauthier, 2007). Given that these plans seem to have an SI ambition; with some modifications within their problem-formulations, they could reach a higher potential to realize bicycling's SI potential.

9.3.3. Group three, high potential to realize SI potential:
Jönköping, Umeå, Lomma, Falkenberg, Ludvika, Kramfors,
Gothenburg

9.3.3.1. Themes and underlying premises, group three local
level

Figure 9. Themes and categories, local level group three, high potential to realize SI potential



Source: Based on a synthesis of Jönköping (2017), Umeå (2009), Lomma (2016), Falkenberg (2015), Ludvika (2011), Kramfors (2017), Gothenburg (2015)

The last group consisting of seven municipalities, had in a relatively satisfactory way, problematized bicycling in terms of its SI benefits and challenges, realized in explicit objectives. As Figure 9 shows, the overall aim of the bicycle plans was to increase the share of bicycling and to improve safety and accessibility (Jönköping 2017: 8ff; Umeå 2009: 5; Lomma 2016: 6; Falkenberg 2015: 5; Ludvika 2011: 2ff; Kramfors 2017: 4ff; Gothenburg 2015: 9ff). Several groups were represented and prioritized within the problem-formulations: women, men, the young, and the old should according to the plans have the same opportunities to safely access society, and bicycling should be a natural choice of transportation regardless of age, gender, and background (Jönköping 2017: 14; Ludvika 2011: 1; Kramfors 2017: 6;). Challenges to achieving this state of affairs are stressed and depends on safety, good accessibility, network density, and passability (Gothenburg 2015: 1; Jönköping 2017: 8). The benefits of bicycling in these plans focused on how bicycling could improve an attractive city, equality, gender equality, and accessibility to low-income groups, young people, and those who are not holding

a driver's license or access to a car (Lomma 2016: 24, 27; Falkenberg 2015: 11). The Lomma plan states that “Accessible transport nodes are important to create an equal society where everyone can travel freely to their targets regardless of age, gender, ethnicity and economy” (Lomma 2016: 24). The Falkenberg plan described the bicycle by its inclusive potential: “The bicycle is a democratic vehicle that everyone can use regardless of age. It requires no drivers license or traffic education” (Falkenberg 2015: 11). This shows how the SI benefits with bicycling were acknowledged and included within the problem-formulations while acknowledging the importance of an equal transport system and society.

Bicycling was acknowledged as promoting more equal accessibility. The issue of perceived safety as a barrier to bicycling was also problematized. The gender dimension of perceived safety was part of the problem-formulation within the Umeå, Ludvika and Jönköping plan, while the issue of perceived safety was problematized in more general terms within the Kramfors, Lomma and Gothenburg plan (Umeå 2009: 7, 20; Ludvika 2011: 2, 13; Jönköping 2017: 17, 34; Kramfors 2017: 6, 9; Gothenburg 2015: 37, 57; Lomma 2016: 13, 28; Falkenberg 2015: 10ff). Against such problem-formulations, cyclists were not perceived as a homogenous group; The plans stressed the importance of acknowledging who the network should be adapted for (Jönköping 2017: 17; Gothenburg 2015: 36), and the importance of equality, referring to the needs of both men and women (Lomma 2016: 13; Falkenberg 2015: 11; Jönköping 2017: 8; Kramfors 2017: 6). Such themes are at the core of socially inclusive planning and show an understanding that different groups of people, not only different cyclists, have different needs and concerns (Godefrooij & Schepel 2010: 29; Murphy 2012: 37ff; Litman 2017; Litman & Burwell 2006). Challenges in terms of the physical environment and individual incentives were also problematized. The first was related to issues of urbanization, orientability, accessibility etc., while the latter was related to cost efficiency, time savings, and health benefits (Jönköping 2017 1, 24; Umeå 2009: 2, 4ff, 12; Lomma 2016: 7; Falkenberg 2015: 7, 10ff; Ludvika 2011: 3f; Kramfors 2017: 6; Gothenburg 2015: 9ff, 17). While such problem-formulations show how individual incentives are perceived as contributing to bicycle use, they neglect how individual social characteristics can act as a barrier regardless of positive individual incentives.

The objectives of these local plans mirrored the posed challenges. The plans had explicit goals of a safe and expanded road network within and between cities and municipalities, with defined transport nodes for different cyclists based on surveys among different groups, and low-cycling areas (Jönköping 2017: 12-38; Umeå 2009: 12; Lomma 2016: 24; Falkenberg 2015 5, 14-19; Ludvika 2011: 31ff; Kramfors 2017: 7, 13ff; Gothenburg 2015: 33ff, 63ff, 69ff, 74ff, 81ff). It

was stated that all planning for safety and accessibility should start by accounting for gender, age, physical ability, equality, children, and public health (Lomma 2016: 24; Kramfors 2017: 5; Gothenburg 2015: 17, 36, 37). Such formulations show how the social perspective is widely included within the problem-formulations and shows how issues of SI are a highly prioritized issue. Gothenburg took such requirements further by making it standard in all planning and design to account for the social perspective by using a social consequence analysis. This analysis model enables the identification of and accounting for different life situations, needs, and important social aspects (Gothenburg 2015: 36).

Against these problem-formulations, these plans included most SI themes that were expressed in previous policy within their problem-formulations. The most visible themes were physical activity and health, gender equality, equity, accessibility, perceived safety, social groups, children, elderly, and disabled. These themes were observed in the plans' problem-formulations of benefits, challenges, and explicit goals, which indicated the plans' high potential to realize the SI potential of bicycling. Upon closer examination of the plans' underlying premises, they seem to have been guided in their adaptation to the *national transport goals* by TRAST (2007; 2015). This can be observed from TRAST's emphasis on how the streets should be for everyone and that everyone should be able to participate in society regardless of age, sex, or disability. The Umeå, Lomma, Jönköping, and Ludvika plans explicitly referred to TRAST, but there were reasons to believe that the other plans referred to TRAST in more indirect ways. The TRAST (2007; 2015) document has a stronger focus on social themes than the GCM handbook and road street and design (VGU); this stronger focus was evident in the plans in this third group, and resulted in an overall successful inclusion of the SI themes expressed in the *national transport policy* (2008/09:93). The themes of equal accessibility, a transport system designed with different people in mind, equal treatment of the needs of men and women, and taking different perceptions of safety into account with special attention to children and people with disabilities, were all observable in these plans.

9.3.3.2. *Silences of social inclusion, group three local level*

The bicycle plans in group three successfully expressed the bicycle in terms of its SI potential in accordance with previous policy, which also strengthens their potential to realize such potential. However, examining the different dimensions of exclusion, there were still groups and dimensions that were silent within the problem-formulations. The fear-based dimension of

social exclusion was widely expressed in the seven plans, as they included a problematization of how perceptions of safety differ and set their goals accordingly (Church et al. 2000). The time-based dimension was partly observable, as bicycling was argued for based on the differentiated travel patterns of men and women (Umeå 2009: 7; Lomma 2016: 13; Falkenberg 2015: 10ff; Jönköping 2017: 17; Ludvika 2011: 2; Kramfors 2017: 6). However, to further achieve gender objectives, the plans could also problematize unequal structures; a mere improvement in the ability of women to combine work and domestic responsibilities would not fully compensate for the core issue of the unequal domestic burden (Prop.2005/06:155). Furthermore, the physical dimension of exclusion was observed as the plans noted that the transport system should be accessible to different cyclists based on different social characteristics (Church et al. 2000; Litman 2003; Chapman & Weir 2008). The plans slightly acknowledged the economic dimension of exclusion by perceiving the bicycle as having the possibility of providing accessibility to low-income groups, young people, and people who do not hold a driver's license or have access to a car.

However, the shortcomings in these plans were similar to the other groups, which included silences regarding how social characteristics could create barriers to bicycling. Oosterhuis (2016) notes that people in poor communities may not have a positive reaction to bicycling as the bicycle is perceived to be a poor person's mode of transportation, which means that bicycling may not be perceived as an accessible or suitable mode of transportation. Even though the plans in group three had a high SI potential, the plans could be further improved by acknowledging and problematizing how norms and attitudes affect the choice of bicycling. For instance, the ethnic dimension of exclusion was overlooked in these plans. The plans were silent regarding the fact that many non-western women cannot bike, have different perceptions of bicycling, and face specific barriers of language and racism (Lubitow 2017; Uteng 2009; Litman 2003: 7; Chapman & Weir 2008; Pedalista 2017). Inclusive planning has poor prospects for success if it assumes that bicycling is available to everyone and does not engage in projects to remove accessibility barriers (Godefrooij & Schepel 2010; Litman 2017).

Overall, these plans acknowledged that the transport system should be equal and accessible to everyone. However, a deeper discussion about how that goal should be realized was lacking within the problem-formulations. Making society accessible to immigrant women do not require the same actions needed to make the transport system accessible to, for example, the disabled or children, as different groups face different barriers and challenges. Hence, the plans should more closely examine who is at risk of experiencing TRSE by taking a closer examination of barriers as well as the socio-cultural context and planning accordingly.

10. Conclusions

Despite years of using SI as a planning principle within Swedish transport policy and a discursive context that supports SI, issues of SI have been largely absent within Swedish bicycle planning. This means that the potential of bicycling to promote the national goal of a more equal accessibility and SI was generally neglected. Even in the most inclusive plans, dimensions of social exclusion were absent, including the time-based, economic, and ethnic dimensions. Similarly, a discussion of the barriers that different groups have towards bicycling was lacking. Several groups at higher risk of experiencing TRSE, such as the socio-economic weak and foreign-born women, were generally not included within the problem-formulations. Silences regarding barriers and challenges of groups at higher risk of TRSE decreases the potential to realize the SI potential with bicycling, as these groups according to the WPR approach, would not be prioritized. If SI was factored in at all, bicycling was generally described by its inclusive benefits while the challenges to realize such potential was often neglected and not translated into objectives to promote equal accessibility or SI. The challenges were often described simply as insufficient amounts of infrastructure that is crucial to enable bicycling. Yet, research shows that social factors such as safety concerns and norms that surround bicycling can have a greater impact than good infrastructure on a person's attitude towards bicycling. However, groups of children, the disabled, and the elderly with a higher legal status were frequently included within the problem-formulations. The needs of these groups were commonly referred to as specific infrastructure and safety needs.

As the WPR approach stated, policy does not respond to objective problems but contain silences. While issues of accessibility gaps and SI was largely silent, issues related to infrastructure and an attractive city were widely problematized. Bicycling's positive effects on the environment were stressed rather than the usefulness for the individual. Commonly referred to dimensions was the geographical and physical dimension of exclusion, which was more related to the physical and infrastructural environment than the social environment. Overall, the findings reveal that bicycling was generally framed as being beneficial to economic and environmental issues rather than social. The silence regarding SI follows a general failure to acknowledge the social pillar within the transport sector. This kind of problem-formulations in bicycle planning contradicts the main goal with increased bicycling according to Prop 2008/09:93, which is to improve equal accessibility. The reduction of TRSE and promotion of SI are not to expect from this kind of planning.

Even as Sweden becomes more multicultural and multiethnic, bicycling is planned based on a western and progressive view of bicycling as something that is utility positive, environmentally friendly, and associated with freedom. This “neutral” view on bicycling limits the potential to improve equal accessibility and SI. Even the absolute best cases of inclusive bicycle planning were silent regarding how the bicycle may be different things for different people, while previous research demonstrates that such discussions are key to effective policy. However, the emphasis on SI varied in the different bicycle documents. The national Swedish bicycle strategy included several SI themes and dimensions within their problem-formulations of both challenges and benefits. These themes and dimensions were followed by the regional plan of Kronoberg. Overall, based on the discursive frame and current knowledge of bicycle patterns, these plans can be perceived as socially inclusive. Both the national strategy and Kronoberg’s plan acknowledged that the choice of bicycling differs based on the socio-cultural context that surrounds bicycling and was representative of several groups at risk for TRSE. However, even though this was acknowledged, neither recognized *how* or *for whom* the socio-cultural context influences bicycle use.

Many plans were silent regarding bicycling’s SI potential completely. It is, for instance, highly noteworthy that the region and municipality of Stockholm, the Swedish capital with severe segregation problems and a diverse population, was as silent regarding SI themes and dimensions as small municipalities such as Hudiksvall and Halmstad and regions such as Blekinge. Similarly, Malmö, the third biggest city in Sweden also with segregation problems and a diverse population, had the aim aim of being an internationally recognized bicycling city while being absent of SI within their bicycle planning. It is striking that small municipalities such as Lomma and Falkenberg succeeded in including several SI themes and dimensions while Stockholm and Malmö did not. To reach a more comprehensive recognition of SI in planning, the regulations on the social dimension within transport planning may need to be legally strengthened, similar to the environmental dimension. The municipality of Gothenburg, for example, has given the social dimension the same status by mandating a social consequence analysis, which improves the chances of realizing bicycling’s SI potential.

Against these findings, can bicycling’s SI potential be realized in Swedish bicycle planning? As noted by way of introduction, the method employed in this thesis can only judge the policy level; it cannot mirror the actual effects of bicycle planning. However, one can conclude that silences in policy most likely will translate into absence of actions and priority. Examining the quantitative data analysis, most Swedish bicycle plans have not included SI themes. A

successful realization of the SI potential would require a deeper problematization of the SI benefits and challenges with bicycling. To do so many plans would need to completely rethink the role and potential of bicycling beyond an attractive city. Evidently, this paper examines bicycle planning through a perspective that has not yet gained currency within this policy area. Municipalities with no SI aims to be a bicycling municipality in top-class; as did the municipalities in group one with low SI such as Malmö, Halmstad and Karlstad. This shows that SI as a quality standard has not yet gained currency in bicycle planning circles. This undermines the long Swedish tradition with laws and policies that support equal accessibility. Yet, how bicycling can enhance SI and equal accessibility is a topic that is becoming increasingly important in a world where inequalities growing alongside climate and environmental change. Analyzing bicycle planning based on an SI approach could enable planners to visualize blind spots in planning, and thereby allowing for the realization of the full potential of bicycling. To further strengthen the SI potential of bicycling, future research should more closely examine differentiated accessibility levels and travel patterns, and how the socio-cultural context that surrounds bicycling differs among different groups of people. Future research could also monitor the SI potential of regional and local planning by examining how policy translates into action and how accessibility levels and bicycle rates among different groups develop. Lastly, future research may monitor the SI potential of the national level, examining how bicycle planning develops out of an SI approach. Research may examine if future bicycle planning more extensively include SI themes and dimensions within their problem-formulation, in line with the Swedish national bicycle strategy.

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11. Appendix

Categories in Swedish: kvinnor/kvinna, integration/integrera, mångfald, invandrare/utrikes född(a), etnicitet, jämställdhet/jämlikhet/jämställd/jämlik, social (hållbarhet)

Quantitative data analysis on regional level

Quantitative content analysis of social inclusion in Swedish bicycle planning (word count)								
Landsting/region	Typ av dokument	Women/woman	Integration/integrate	Diversity	Immigrant(s)/foreign born	Equality/equity/equal	Etnicity	Social sustainability
Stockholms läns landsting	Cykelplan	3	0	0	0	0	0	0
Region Uppsala	Cykelstrategi - Remiss	0	0	0	0	0	0	0
Landstinget Sörmland	Cykelstrategi	0	0	0	0	0	0	0
Region Östergötland	Cykelstrategi	4	0	0	0	1	0	1
Region Jönköpings län	Cykelplan - Underlag	0	0	0	0	0	0	0
Region Kronoberg	Cykelstrategi	15	5	0	10	5	0	0
Landstinget Kalmar	Cykelstrategi	1	0	0	0	0	0	0
Region Gotland	Cykelplan	2	0	0	0	5	0	0
Landstinget Blekinge	Cykelstrategi - Remiss	0	0	0	0	0	0	0
Region Skåne	Cykelstrategi	0	0	0	0	0	0	2
Region Halland	Cykelplan - Remiss	1	0	0	0	3	0	1
Västra Götalandsregionen	Cykelplan	1	0	0	0	2	0	0
Landstinget i Värmland	Cykelplan	0	0	0	0	0	0	0
Region Örebro län	Cykelstrategi	1	0	0	0	4	0	2
Region Västmanland	Gång- och cykelstrategi	1	0	0	0	1	0	0

Quantitative data analysis on local and national level

Quantitative content analysis of social inclusion in Swedish bicycle planning (word count)									
County	Document type	Women/woman	Integration/integrate	Diversity	Immigrant(s)/foreign born	Equality/equity/equal	Ethnicity	Social (sustainability)	Total score (categories scored in)
Aneby kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Arvika kommun	Cykelplan	0	0	0	0	0	0	0	0
Borås stad	Cykelplan	0	0	0	0	0	0	1	1
Botkyrka kommun	Cykelplan	2	0	0	1	2	0	0	5 (3)
Båstads kommun	Cykelstrategi	1	0	0	0	0	0	6	7 (2)
Danderyds kommun	Cykelplan	6	0	1	0	0	0	0	7 (2)
Ekerö kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Enköpings kommun	Cykelplan	1	0	0	0	2	0	0	3 (2)
Eskilstuna kommun	Cykelplan	4	0	0	0	3	0	1	8 (3)
Eslövs kommun	Cykelplan	1	0	0	0	0	0	0	1
Essunga kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Falkenbergs kommun	Cykelstrategi	9	0	0	0	1	0	4	14 (3)
Falköpings kommun	Cykelstrategi	0	0	0	0	0	0	0	0
Falu kommun	Cykelplan	0	0	0	0	0	0	0	0
Flens kommun	Cykelplan - Planera	0	0	0	0	0	0	0	0
Gislaveds kommun	Cykelstrategi	1	0	0	0	1	0	0	2 (2)
Gnesta kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Grästorps kommun	Cykelplan - WIP	0	0	0	0	0	0	0	0
Gällivare kommun	Lathund	0	0	0	0	0	0	0	0
Gävle kommun	Cykelplan	2	0	0	0	0	0	0	2
Göteborgs stad	Cykelprogram	1	0	1	0	2	0	7	11 (4)
Hallstahammars kommun	Cykelplan	0	0	0	0	0	0	0	0
Halmstads kommun	Cykelplan	0	0	0	0	0	0	0	0
Haninge kommun	Cykelplan	1	0	0	0	0	0	0	1
Helsingborgs stad	Cykelplan	0	0	0	0	0	0	0	0
Herrljunga kommun	Cykelstrategi	0	0	0	0	0	0	0	0
Huddinge kommun	Cykelplan	0	1	0	0	3	0	0	1
Hudiksvalls kommun	Cykelpolicy - WIP	0	0	0	0	0	0	0	0
Härnösands kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Höors kommun	Cykelplan	0	0	0	0	0	0	0	0
Järfälla kommun	Cykelplan	0	0	0	0	0	0	0	0
Jönköpings kommun	Cykelprogram	10	0	0	0	12	0	1	23 (3)
Kalmar kommun	Cykelstrategi	0	0	0	0	0	0	0	0
Karlskrona kommun	Cykelstrategi	0	0	1	0	0	0	0	1
Karlstads kommun	Cykelplan	0	0	0	0	0	0	0	0
Katrineholms kommun	Gång- och cykelplan	4	4	0	0	0	0	0	8 (2)
Kramfors kommun	Gång- och cykelplan	2	0	0	0	7	0	2	11(3)
Kumla kommun	Cykelplan	3	0	0	0	2	0	0	5 (2)
Kungsbacka kommun	GC-strategi	4	0	0	0	0	0	1	5 (2)
Kävlinge kommun	Cykelvägsplan	0	0	0	0	0	0	0	0
Laholms kommun	Cykelplan	0	0	0	0	1	0	0	1
Landskrona stad	Cykelplan	0	0	0	0	0	1	0	1
Leksands kommun	Cykelplan	0	0	0	0	0	0	0	0
Lindesbergs kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Linköpings kommun	Cykelplan	4	0	0	2	3	0	0	9 (3)
Ljungby kommun	Verksamhetsplan	0	0	0	0	0	0	0	0
Lomma kommun	Cykelplan	7	0	0	0	7	1	0	15 (3)
Ludvika kommun	Cykelplan	4	0	0	0	7	0	1	12 (3)
Luleå kommun	Cykelplan	6	0	0	0	1	0	1	8 (3)
Lunds kommun	Cykelstrategi	0	0	0	0	0	0	0	0
Malmö stad	Cykelprogram	0	0	1	0	0	0	0	1
Mölnåls stad	Cykelstrategi	0	0	0	0	0	0	0	0
Motala kommun	Cykelplan	2	0	0	0	0	0	2	4 (2)
Nacka kommun	Cykelstrategi	1	0	0	0	1	0	0	2 (2)
Norrtälje kommun	Cykelprogram	0	0	0	0	0	0	0	0
Nybro kommun	Gång- och cykelplan	0	0	0	0	4	0	0	4
Nykvarns kommun	Cykelplan	1	0	0	0	1	0	0	2 (2)
Nyköpings kommun	Handlingsplan	0	0	0	0	0	0	0	0
Nynäshamns kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Nässjö kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Orust kommun	Cykelplan	0	0	0	0	0	0	0	0

Perstorps kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Piteå kommun	Gång- och cykelplan	0	0	0	0	2	0	0	2
Salems kommun	Gång- och cykelplan	0	0	0	0	0	0	0	0
Sigtuna kommun	Cykelplan	0	0	0	0	0	0	0	0
Skara kommun	Cykelstrategi	0	0	0	0	0	0	0	0
Skellefteå kommun	Cykelplan	1	0	0	0	1	0	0	2 (2)
Skurups kommun	Cykelplan	0	0	0	0	0	0	0	0
Sollentuna kommun	Cykelplan	0	0	0	0	0	0	0	0
Solna stad	Cykelplan	0	0	0	0	0	0	0	0
Stenungsunds kommun	Cykelplan	0	0	0	0	0	0	0	0
Stockholms stad	Cykelplan + cykelstr	0	0	0	0	0	0	0	0
Strängnäs kommun	Cykelplan	0	0	0	0	0	0	0	0
Sundbybergs stad	Cykelplan	0	0	0	0	0	0	0	0
Sunne kommun	Cykelplan	0	0	0	0	1	0	0	1
Svalövs kommun	Cykelplan	0	0	0	0	0	0	0	0
Svenljunga kommun	cykelstrategi	0	0	0	0	0	0	0	0
Södertälje kommun	Cykelplan	0	0	0	0	0	0	0	0
Tierps kommun	Cykelplan	6	0	0	0	1	0	0	7 (2)
Tranemo kommun	Cykelplan	2	0	0	0	1	0	0	4 (2)
Tranås kommun	Cykelplan	1	0	0	0	5	0	0	6 (2)
Trelleborgs kommun	Cykelplan	0	0	0	0	1	0	0	2 3 (2)
Trollhättans stad	Cykelplan	0	0	0	0	0	0	0	0
Tyresö kommun	Cykelplan	0	0	0	0	0	0	0	0
Täby kommun	Cykelplan	0	0	0	0	0	0	0	0
Uddevalla kommun	Cykelplan	0	0	0	0	0	0	0	0
Umeå kommun	Cykeltrafikprogram	14	0	0	0	2	0	0	16 (2)
Upplands-Bro kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Uppsala kommun	Cykelpolicy	0	0	0	0	0	0	0	0
Vaggeryds kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Vansbro kommun	Cykelplan	0	0	0	0	3	0	0	3
Vallentuna kommun	Cykelplan	0	0	0	0	0	0	0	0
Varbergs kommun	Cykelplan	0	1	0	0	1	0	0	2 (2)
Värgårda kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Vänersborgs kommun	Cykelplan	0	0	0	0	0	0	0	0
Värmdö kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Värnamo kommun	gång- och cykelplan	0	0	0	0	0	0	0	0
Ystads kommun	Cykelstrategi	1	0	0	0	0	0	0	1
Årjängs kommun	Cykelplan	0	0	0	0	0	0	0	0
Ängelholms kommun	Cykelplan	4	0	0	0	5	0	0	9 (2)
Örebro kommun	Cykelnätsplan	5	2	0	0	1	0	0	8 (3)
Örnsköldsviks kommun	Cykelstrategi	0	0	0	0	1	0	0	1
Österåkers kommun	gång- och cykelplan	1	0	0	0	1	0	0	2 (2)
Östhammars kommun	gång- och cykelplan	0	0	0	0	0	0	2	2
Nationell cykelstrategi	Cykelstrategi	8	0	5	12	0		1	