Densification beyond the city centre

*A socioeconomic investigation of the densification process in Lundby, Gothenburg*

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“Those who cannot remember the past are condemned to repeat it”

(Santayana, 1980, p. 284)
ABSTRACT

Contemporary urban planning for the past decades has concentrated on sustainable development, for instance through the promotion of dense development (Echenique et al., 2012). Important components for sustainable urban development concerns increasing residential and building density, as means of counteracting the consequences of urban sprawl (Jenks and Jones, 2008). Because it is argued that high-residential density is more economically, environmentally and socially sustainable than low-density since a higher concentration of people contributes to for instance shorter transportation distances as well as makes services and amenities more economically viable (Frey, 1999; Haughton and Hunter, 2004). However, whether the densification of cities has desirable or undesirable social, economic and ecological impacts is highly contested.

The purpose of this study is to analyze the socioeconomic outcomes of the urban densification process in the Lundby District, Gothenburg, over time. Through a mixed method approach, statistical information for Lundby District, for the years 2008 to 2015 have been processed and two semi-structured interviews with employees in the City Planning Authority and Lundby District Administration were conducted.

The densification in Lundby presents certain strengths, weaknesses, opportunities and threats. As more than 6300 new housing units has been constructed during this time-period, and more is to come in the near future, Lundby experienced a repopulation as the housing construction has facilitate a population increase of more than 11 000 new inhabitants. However, as the favored tenure developed during this time-period been condominiums certain weaknesses exist. Nonetheless, densification and the rapid increase in population has contributed to the number of vehicle per 100 inhabitants decreasing, which presents opportunities for being more environmentally friendly. On the other hand the claim that through densification could diversity and social mixing be achieved is flawed, as seen in Lundby the densification process has brought changes in population structure and socioeconomic characteristics, which suggest some form of gentrification is occurring.

Keywords

Densification, New urbanism, Compact City, Smart Growth, Sustainability, SWOT-Analysis
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1 INTRODUCTION

Cities have throughout human history evolved and continue to develop. The shifting visions on urban planning and practices are contributing to the progression of cities worldwide. Numerous diverse visionaries with their urban plan visions have influenced modern urban planning, which is believed to have emerged as a response to the chaotic urban slums and human misery in nineteenth-century industrialized cities (Hall, 2014). Ebenezer Howard with his notions of ‘the garden city’ imagined a number of small garden cities, which were economically independent, cooperatively owned and surrounded by green areas, could counteract bad living environment. On the contrary, Le Corbusier’s modernistic views proposed the separation of home and work areas as means for improving the living conditions of crowded cities (Bridge and Watson, 2002). The Chicago School meanwhile had a fundamental impact on the urban planning field, as it accomplished to demonstrate how the physical and social structures affects human behaviors. Most noteworthy contribution of the Chicago school was the assumption of urban life influencing people’s behavior through its physical and hectic nature (Park and Burgess, 1984). Nonetheless, the immense progressions human society has experienced over time, improvement in public health, level of education and life expectancy, has influenced contemporary urban planning. As the immense progression has contributed to increased consumption and impact on earth resources (Johansson and Orrskog, 2002). Madlener and Sunak (2011) elucidate that more than half of world’s population now lives in cities, which encompasses 2% of earth surface and are responsible of approximately 75% of world’s consumption. Therefore, contemporary urban planning has, as Echenique et al. (2012) explain concentrated on sustainable development, for instance through promoting dense development as means of reducing traveling distances or private vehicular usage, thus reducing emissions. However, there are strong disagreements of whether the densification of cities has desirable or undesirable social, economic and environmental impact. For instance would open spaces be preserved by focusing on conversion of existing development, thus, minimizing the use of undeveloped land (Guérois and Pumain, 2008). On the other hand minimizing the development on undeveloped land and preserving farmland and open spaces, could contribute to increasing property values (Frey, 1999).

Densification or compaction of urban areas, which entails high-density, mixed used cities, are an ongoing project in Sweden. The Swedish national board of housing, building and planning (Boverket) promotes in their report “Blandstaden” a mixed used city as means for achieving...
sustainable urban development (Bellander, 2005). It is argued that a mixed used development that blends social, economic and environmental functions produces socially and economically favorable objectives, such as diverse living environment and reduces transportation by providing proximity between people and businesses (Bellander, 2005). At the same time, the society for conservation of nature stress for a sound urban planning that produces better accessibility for pedestrian, cyclist and public transportation usages, which illustrates their arguments for denser urban areas (Naturskyddsföreningen, 2013).

In 2015, the city of Gothenburg had a population of 548,280 inhabitants (SCB, 2017a), however the real estate board for Gothenburg proclaimed in 2014 that through restructuring and densifying urban districts a population increase would be feasible. Through densification strategies Gothenburg city aims to grow with at least 150,000 inhabitants, by 2035. Furthermore, the real estate board views densification process as means for achieving a more attractive, environmental and socially sustainable Gothenburg (Fastighetsnämnden, 2014). Nevertheless as Echenique et al. (2012) asserted, whether densification of cities leads to a more sustainable cities in all the aspects of the sustainability concept lack clear evidence. Thus, it is highly important to investigate the outcome of the urban densification process for future developments.

1.1 AIM AND LIMITATIONS

Therefore, this study aims to analyze the socioeconomic outcomes of the urban densification process in the Lundby District, Gothenburg, over time.

As the sustainability concept incorporates social, economic and ecological sustainability, will this thesis not assess the ecological outcomes, due to its complicated nature and interconnection with multitude of factors outside the scope of this thesis. Furthermore, an central objective of various densification strategies is increasing the accessibility of public transportation usage (Bellander, 2005), however reliable data\(^1\) for accessing that public transportation usages could not be obtained.

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\(^1\) Västrafik, which are responsible for the public transportation in Gothenburg, utilizes a multitude of private companies, which made getting access to data problematic. Because not every private company has implemented KRS, which is a customer counting system that tracks the number of trips partaken, Thereby getting access to reliable information were problematic.
1.2 DISPOSITION

The thesis is structured as following, in chapter 2 is the case study explained and motivated. In chapter 3, is the theoretical framework and previous scientific studies presented. The chapter discusses Urban Sprawl, sustainable development, densification strategies such as New Urbanism, Smart Growth and Compact City and key issues in modern Swedish urban planning. In chapter 4, Methods, is the methods used for writing this study presented and explained. Chapter 5, Results, deals with the results, which is mainly shown in figurative form with additional texts, furthermore the interviews is also presented. In chapter 6, Discussion, is the results analyzed together with previous research but also an SWOT analysis of the densification process is presented. In chapter 7, Conclusion, the final remarks is presented. Chapter 8 contains the references used in this study.
2 CASE STUDY

The development of housing units in Sweden has varied over the years, but one of the largest decline of housing constructions occurred in the early 1990s. As the economy experienced a recession due to the financial crises during the early 1990s, the level of construction in Sweden declined. Since the beginning of the 2000s housing development in Sweden has once again increased (Emanuelsson, 2015). Yet, as the Swedish National Board of Housing and Planning points out, the current development rate cannot sustain the forecasted population increase in Sweden (Boverket, 2015).

Gothenburg, a city with a population of 548 280 inhabitants in 2015, is forecasted to exceed 600 000 inhabitants in 2025 (Västra Götalandsregionen, 2016). However, in Gothenburg there is lack of housing units, as the average time for accessing a rental tenure increased by 2.2 years, from 787 days in 2012 to 1602 days in 2016 (Boplats, 2017). Therefore, an increased population in Gothenburg requires more housing units.

![Map of Gothenburg](image)

Figure 1: Area wide objectives for development in Gothenburg. Source: Göteborgs Stad, 2009, p. 9

Gothenburg city council adopted, in 2009, a comprehensive plan. Figure 1 illustrates the proposed expansion plan, which propositions developing from the city center and outwards. The comprehensive plan furthermore planned that a substantial share of the development within Gothenburg would occur in centrally located renewal areas. In fact, within the existing build-areas could up to year 2025 approximately an additional 2500 new housing unit be developed each year (Göteborgs Stad, 2009).
2.1 **Lundby District, Gothenburg**

The chosen case study area for this study is Lundby district, which is one of Gothenburg’s ten districts. Main reasons for selecting Lundby for this thesis is because it is the site of the construction of 6392 new housing units between 2008 and 2015, as well as of multiple urban development projects that is occurring at this moment and are planned to occur within the near future (Göteborgs Stad, 2017a). The current bridge (*Göta Älvbron*) connecting the island of Hisingen, where Lundby district is located, to Gothenburg is in dire shape and needs replacing, thereby a new bridge is planned to be constructed. Furthermore, another important transportation project planned to occur in the near future is the construction of a cable railway between Wieselgrensplatsen in Lundby district to Järntorget on the central city (*Gothenburg*) side. The planned cable railway (Figure 2) could contribute to an increased accessibility for walking and cycling, as a new means of public transportation is available but it could also unburden the over crowdedness in current public transportation (Göteborgs Stad, 2017b). Aside from the transportation development in Lundby, are multiple urban development projects intended to occur in the near future. Backaplan, in Kvillebäcken, which now consist mainly of a commercial area with malls and stores, is planned to be transformed to a denser mix-used environment containing not only commercial functions but also housing units and social services (Göteborgs Stad, 2017c). As of now, the most recognizable planned project that stands out is the Karlavagnsplatsen project in Lindholmen. This project (Figure 3) would generate approximately 1650 new housings units within eight blocks covering less than ten hectares. Not only would this development bring about Northern Europe’s highest residential building but also generate hotels, commerce and services for both residents as well as visitors (Göteborgs Stad, 2017d).

*Figure 2: Planned Cable Railway. Source: Göteborgs Stad, 2017b*

*Figure 3: Planned development in Lundby. Source: Göteborgs Stad, 2017d*
The island of Hisingen has a rich history of transformation and development. During the 18\textsuperscript{th} century, as the city of Gothenburg grew through expanding merchant trade, Hisingen became important. In those days, the island was dominated by agriculture but that changed with the construction of a broad range of factories as well as the introduction of shipyards in the beginning of the 19\textsuperscript{th} century. This further cemented Hisingen’s importance as an industrial area for the city of Gothenburg. At the end of 19\textsuperscript{th} century, vast areas were drained to accommodate new housing and factories (Lindman and Sanja, 2015). The oil crises during the 1973-74 contributed to a rapid transformation in Hisingen, as the shipyard industry experienced crises and eventually many companies closed down or relocated, which contributed to vast amount of abandoned spaces in Hisingen (Lindman and Sanja, 2015).

As can be seen in Figure 4, Lundby district contains seven smaller so-called primary precincts. Gothenburg’s comprehensive plan identifies the centrally located renewal areas, which Lundby is part of, as important for the future development within the city of Gothenburg. Furthermore, as previously mentioned, because the districts has already experienced an construction of 6392 new housing units and is planned to undergo multiple additional urban development projects, makes this district an appropriate and interesting selection for case study.

\[\text{Figure 4: Lundby District, Gothenburg. Data source: Lantmätariet, 2017. Own Design}\]
This chapter presents the theoretical framework and previous scientific research that is fundamental for this study. Contemporary urban planning is, as Goetz (2013) argues, torn between two different paradigms: urban sprawl and sustainable urban development. Therefore, this chapter will initially present the theoretical framework explaining the urban sprawl concept, thereafter sustainable urban development will addressed. Key issues in Swedish urban planning is addressed and explained in the last section of this chapter.

As this study aims to analyze the socioeconomic outcomes of the urban densification process in the Lundby District, Gothenburg, over time, it is important to define and explain what urban form entails, especially urban change. Because as Schwarz (2010) contends the urban form of a city influences the daily life and it’s an important factor for both quality of life and environmental impact. However, multiple ways of measuring and defining urban form exist in various scientific literature, for instance Huang et al. (2007) define urban form by measuring how the land is used while Tsai (2005) makes use of socioeconomic characteristics, such as population density, to explain urban form. As this study aims to investigate the socioeconomic outcomes in Lundby, urban form will encompass the physical structure, such as buildings, as well as the socioeconomic aspects, such as population composition and economic conditions.

### 3.1 Urban Sprawl

The literature and theoretical background about urban sprawl paradigm is extensive and offers a good description to its characteristics, cause and consequence. The nature of urban sprawl could be described as a process where the population expands away from central areas into low-density development, it also known as an extreme form of suburbanization. Ewing et al (2003) contend that the population displacement from central areas into suburban areas, with its vast network of roads, creates certain obstacles that affects the accessibility as it creates separation between residential and commercial areas. Squires (2002) further elucidates that urban sprawl is an pattern of urban and metropolitan growth that reflects low-density and automobile dependency, which is quite similar to Ewing et al (2003) definition of urban sprawl. However, as Galster et al (2001) contend, urban sprawl is an elusive concept which is attributed to a vast number of varying patterns, but also to the shortcomings of the suburbs. Therefore, the definition of urban sprawl varies extensively within the literature (Couch et al., 2007).
Before addressing the cause of urban sprawl, it is important to differentiate between urban sprawl in a North American and European context\(^2\), because as Couch et al (2007) explain even though urban sprawl in Europe contains similar traits as in North American it also has its own characteristics. Many European cities, especially those in Western Europe, have larger inner cities with poor housing conditions and socially excluded residents; however, it is not on the same scale as some US cities. Furthermore, race or racial tensions may be as Couch et al (2007) suggest a more fundamental cause in US then in Europe, where the social classes and not race might play a bigger role. As urban sprawl brought increased social segregation that tended to exclude older and less able population, which instead remained in the urban core. Since, this thesis has a European focus, the causes of urban sprawl in Europe will be addressed. In Europe, a broad range of causes could be attributed to the urban sprawl, for instance in the aftermath of World War II many European governments implemented planned urban sprawl, in an attempt of accommodating population growth. Furthermore, urban sprawl was also influenced by the decentralization of employment to suburban locations as well as the functionalistic views in urban planning, thereby inspiring the relocation to suburban areas (Couch et al, 2007).

By the end of 1980s, urban sprawl was viewed as a concept with unintentional consequences. As the outward migration from inner cities increased, the local tax base began to decline, because affluent citizens moved to the suburbs while old and less able population remained in the urban core. Urban sprawl, is therefore viewed as contributing to deinvestments in urban areas and ultimately to the decline in inner cities (Dieleman and Wegener, 2004). Other consequences of urban sprawl concerns the environmental impact, more specific the reliance on private transportation and loss of open spaces. The advancement in personal mobility, achieved through private vehicles, has shaped and contributed to the population disperse as well as the urban sprawl. Consequently the reliance on private vehicles is contributing to increasing emissions and congestions (Couch et al., 2007; Dieleman and Wegener, 2004). Furthermore, as suburban’s continues to expand it ultimately increases the consumption of undeveloped land (Dieleman and Wegener, 2004).

Even though many argue that urban sprawl contributes to the population expanding away from central areas into low-density development (Couch et al., 2007; Ewing et al., 2003; Squires, 2003).

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\(^2\) A Google scholar search in February 2017 demonstrates that out of the first 50 articles concerning urban sprawl, 36 focused on North America.
2002), it’s important to acknowledge that multiple factors for settling outside city centers beside the housing availability also exist (Kim et al., 2005). Notwithstanding the job accessibility are other characteristics such as environmental amenities, recreation opportunities, access to open space and parks also important causes for settling outside city centers (Colwell et al., 2002; Rouwendal and Meijer, 2001). Moreover, as Kim et al (2005) further elucidate are also life cycles and lifestyle preferences factors for residential location choice. For instance, households with children’s might choose to move out from city centers in means of getting access to natural environment and open spaces, which could be beneficiary for the children’s (Jackson and Cummings, 2001). Nevertheless as the World Commission on Economic development stated back in 1987 the unrestrained urban growth and the enlargement of the cities through development on open spaces or undeveloped land has dire implications on the environment (WCED, 1987).

3.2 SUSTAINABLE DEVELOPMENT

The interest and concern with sustainability has increased over the past decades, and it has become a central component in contemporary urban planning (Bramley and Power, 2009). As Baumgärtner and Quaas (2010) explain, is this concept quite wide ranging and sets out, in a broad sense, the way individuals should behave towards the nature but also how they are responsible for the forthcoming generations. The sustainability concept emerged through environmental discords, which demonstrated the broad range of ways the current development path might degrade and eventually damage the environment in the future. As stated by the famous Brundtland report (WCED, 1987) is the development important for not impeding the future generation’s means of supporting itself. “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 41). Therefore, in other words, contemporary development paths has to achieve todays needs without affecting the future.

The Brundtland report sets out a broad range of goals as means of a achieving sustainability, however as Bramley and Power (2009) explain the original sustainability concept or definition has been broaden to embrace economic and social sustainability, because the original definition in Brundtland report centered around the environmental aspects. Nowadays, the consensus is that the three dimensions of sustainability: economic, environment and social are interrelated. In most scientific literatures are these three dimensions visualized as either three spheres or
pillars, which are mutually dependent. To obtain sustainability then all three dimensions or pillars much be focused on, failure to do so may ultimately weaken the approach and therefore becomes unsustainable (McKenzie, 2004). As the sustainability issues has increased over time, has a broad range of economic, social and environment indicators been developed and implemented to help manage and understand the sustainability concept. (Gallego-Álvarez et al., 2015).

Although each pillar of sustainability are equally important, planning dilemmas of balancing the diverging goals of sustainability exist. As Campbell and Fainstein (2003) explain, planners must bring together three conflicting or sometimes competing causes, growing the economy and distributing the economic development equally without damaging or weakening the environment, a planners triangle.

![Figure 5: Planners triangle of conflicting goals and conflicts. Source: Campbell and Fainstein (2003)](image)

Figure 5 illustrates the three fundamental planning policies and three associated conflicts, while the center of the triangle represent sustainable development. Economic planners view the city as a location where consumption and production take place; furthermore, the city is in competition with other cities for markets and new industries. Environmental developers on the other hand perceive the city as a consumer of resources and a producer of waste, and more importantly, the city is competing against the nature for resources and land. Meanwhile equity planners consider the cities as a location where conflict over resource distribution, services and of opportunities exist. Contrary to economic and environment perspective is the city according to equity planners competing with itself, among different social groups. Therefore, having three
types of priorities ultimately leads to three perspective of the city (Campbell and Fainstein, 2003). The planner's triangle emphases that planning for sustainability is not straightforward and conflicts among economic growth, environmental production and social equity exists. Moreover, the conflicts within the dimension are not only competing against each other but they are dependent on each other. Because as Campbell and Fainstein (2003) elucidate, if the economic growth is equally distributed within the society would the environment protection enhance, as the socially vulnerable group is not competing against the environment.

Considering that the sustainability concept has been broaden to embrace both social and economic sustainability, it is imperative to clarify what they entail (Bramley and Power, 2009). Economic sustainability is quite straightforward, and encompasses the ability to sustain and support economic activities, in other word sustain the present consumption level without affecting the future (Basiago, 1998). However, economic development as Anand and Sen (2000) explain has many different dimensions and different traditions, which is also somewhat competing with other development aspects such as environmental or human development. Throughout centuries financial and material success were the objective, while the human development where neglected. Nonetheless, in order to achieve economic sustainability it is important to consider all competing aspects, such as environment as well the society (Basiago, 1998).

Within the scientific field, a multitude of studies tries to explain and define what social sustainability encompasses, however social sustainability is arguably the least well-defined dimension of the sustainability concept. Because compared to the economic or environmental dimension, is social sustainability harder to measure, which contributes to it being neglected (McKenzie, 2004). As social sustainability concerns both tangible and less tangible requirements related to quality of life makes it much harder to measure than economic output or environmental data (Vallance et al., 2011). At the same time, contrary to the economic or environment dimensions is social sustainability also a relatively new field, which enlightens the focus of trying to define and measure social sustainability. Vallance et al (2011) point out that a fundamental reason behind the difficulties of developing a universal and clear-cut definition of social sustainability relates to Brundtland’s definition of sustainability. As Brundtland’s definition is quite vague and captures broadly, what the needs of the presents actually entails. Therefore, as disagreement of what qualifies as quality of life exist, contributes to social sustainability being a rather messy theoretical field (Vallance et al., 2011).
Nonetheless, the broader scientific literature actually focuses on the overlapping concepts of social capital, social cohesion and social in/exclusion rather than on the social sustainability concept. (Bramley and Power, 2009). Because as noted by Vallance et al (2011) literature with the focus of social sustainability concept has a strong attention on developing countries, while in the context of the developed countries is social sustainability often linked to previous mentioned overlapping social concepts. The general principle within these concepts proclaim that the individuals are important for achieving social sustainability, by working and socially interacting together. More importantly, these concepts recognizes the importance of having equal access to societal benefits (Bramley and Power, 2009).

In light of social sustainability lacking a universal definition and being a quite “messy” theoretical field, this thesis will make use of social equity and social in/exclusion for defining social sustainability. Beginning with social equity, there are many different interpretations of what social equity entails, however a common notion is that people should have equal access to societal resources (Burton, 2000). Dempsey et al (2012) further elucidate that aside the equal access to resources should people also participate in social and political processes. Social in/exclusion concept also centers on equal access to societies resources, however this concept states that nobody based on race, class, religion or income should be excluded (LeGates and Stout, 2000). Thereupon, social sustainability within this thesis concerns having equal access to societal benefits, such as economic opportunities and civil services, regardless of race, class, religion or income.

3.3 DENSIFICATION STRATEGIES
The growth of cities could foremost be attributed to the population growth and urban sprawl, since it’s one of the driving forces behind the most substantial land use changes in Europe (Couch et al., 2007; Nilsson et al., 2014). As previously explained, urban sprawl has contributed to some major environmental consequences, such as development on open space and increased emissions (Couch et al., 2007; Dieleman and Wegener, 2004). Important components for sustainable urban development thereupon concerns residential and building density, as means of counteracting the consequences of urban sprawl (Jenks and Jones, 2008). Because it is argued that high-residential density is more economically, environmentally and socially sustainable than low-density since the concentration of people contributes to shorter transportation distances as well as making services and amenities more economically viable (Frey, 1999;
As Boyko and Cooper (2011) explain, having more people, buildings and services closer to each other would contribute to a greater sharing of certain resources, such as public transportation which would be more efficient and is environmentally friendly. Beside the environmental benefits of high-residential development, advocates of sustainable urban development claim that high-residential density also brings about an increased diversity, as more segments of society are mixing and living together in a dense area. At the same time, they further argue that high-residential density would contribute to making the areas safer. It is argued that higher density would increase the likelihood of people interacting with each other in contrast to low-density area, as those in high-density area live in much closer proximity and are more likely to share built features and facilities. Furthermore, a noteworthy claim of high-residential density is its impact on social equity, as advocates contend increasing the accessibility to key services and facilities is an effective measure of social equity (Boyko and Cooper, 2011; Bramley and Power, 2009; Dempsey, 2008). Consequently, due to the aforementioned benefits of high-density development a vital component within the campaign of repopulating the central districts and the redevelopment of already existing land areas (Dieleman and Wegener, 2004).

Although advocates claim of multiple advantages of densifying and repopulating central districts, some inherent obstacles or problems arise. As Campbell and Fainstein (2003) contend certain inequalities could be attributed to the process of urban development. That increased density would contribute to more diversity is quite contested, because as elucidated uneven development within the cities could manifest into social inequalities, such as polarization between socially resilient groups and socially vulnerable (Campbell and Fainstein, 2003). Furthermore, the repopulation and redevelopment on already existing land-areas could actually contribute to a rapid gentrification, ultimately the opposite of social inclusion and social equity. Because, as Couch et al (2007) state are the rejuvenation of inner cities but also docklands in many European cities contributing to repopulation as well as gentrification. Gentrification as follows is a concept and process within urban planning which addresses the rejuvenation and repopulation of certain districts within the city, by an influx of affluent inhabitants (Thörn and Holgersson, 2014). It’s should be clarified that it’s an process not only limited to densification, but as Couch et al (2007) explained densification strategies could contribute to an increased gentrification through its redevelopment and regeneration of central areas. Furthermore, whether or not a gentrification process is a positive or negative aspect is highly disputed, as
Atkinson and Bridge (2005) elucidate, because some argue it would displace the vulnerable and less affluent population meanwhile others contend it contributes to stabilization of declining areas and increases the local revenues.

Nonetheless, as demonstrated densification strategies incorporates both advantages and disadvantages, yet advocates of New Urbanism, Compact City and Smart Growth consider high residential density highly important for creating more sustainable cities (Dempsey et al., 2012). However, as Cheng (2010) clarifies density is numerical measurement and could be measured in various ways, for instances it could describe the population density or building density, acres or sq.km. It is a quite common and well-used indicator, yet it is also complex and lacks clear consensus on which definition should be used (Forsyth, 2003). Thereby, it is imperative to clarify that within this thesis density encompasses the population density, which is the number of inhabitants per km$^2$.

3.3.1 New Urbanism

New Urbanism could be described as a design-based movement within the architecture and planning field, and refers to strategies which are centered around traditional urban form, old building patterns that occurred before World War II, in an attempt of reducing urban sprawl and inner city decline (Bohl, 2000). Architects and physical planners, who regarded urban sprawl in America as something exceedingly negative, primarily conceived the concept of New Urbanism (Campbell and Fainstein, 2003). New urbanism consist of new ways of thinking about urban form and development, as Katz (1994) explains “new urbanism represents a rediscovery of planning and architecture traditions that have shaped some of the most livable, memorable communities” (Katz, 1994, p. XVI). In other words, by taking inspiration from historical lessons from cities of the past does New Urbanism aspire to reintroduce traditional architecture and planning. New Urbanism therefore aims to provide an alternative to urban sprawl by revitalizing towns and cities in a manner abiding with traditional development (Leccese and McCormick, 2000). However as Kelbaugh (1997) explains is New Urbanism more about reviving earlier traditional urban development, which has occurred over centuries, than about reinventing the design of cities.

New Urbanism furthermore contains some substantial different approaches and strategies for cities. Some New Urbanist opposes development on the edge of the cities until at least all infill land in the city is exhausted (Katz, 1994). While other argues that land on the edge of cities
should be developed first, as the current economic situation of decentralization of employment to suburban locations are favored it’s much better to mold that development into a more sustainable development (Couch et al., 2007; Katz, 1994). Because according to New Urbanistic views would the development in edge of cities be more sustainable by creating walkable and compact areas as well increasing the public transportation usage (Leccese and McCormick, 2000).

Nevertheless, two opposing approaches consist within New Urbanism, development within cities or development on the edge of cities. New Urbanist advocating development within cities, by for instance infill development, proposes neighborhoods which are diverse, mix-used and pedestrian oriented as well public transportation friendly (Bohl, 2000). While those advocating for development on the edge of cities put forward villages or towns with dense urban neighborhoods, which are designed around a five minute walk from the centre to edge (Bohl, 2000; Leccese and McCormick, 2000). Even though two opposing views exist within New Urbanism, does actually the location of the development not matter. Because the New Urbanism it’s not only applicable for either the inner city or at the edge of cities, instead New Urbanist even though they disagree where to start, advocate that it should be applied for the inner city as well at the suburbs (Katz, 1994). New Urbanism furthermore emphasizes on the development of affordable housing, especially creating mixed-income environment. In addition, proponents of New Urbanism consider that the development of walkable neighborhoods contributes to affordability as the dependency on the car for caring out daily activities decreases (Johnson and Talen, 2008).

New Urbanist argue strongly against current development practices of developing on the edge of cities, which they consider produces urban sprawl, instead by facilitating better physical design concepts could more environmentally responsible development occur. Because, by offering better physical design concepts then neighborhoods which are compact, mixed use and pedestrian friendly could be developed, moreover these neighborhoods would also be integrated with nature and more sustainable in contrast to urban sprawl (Katz, 1994; Leccese and McCormick, 2000). Furthermore, New Urbanist proclaim that their concept use land efficiently and preserves the environment but more importantly and contrary to urban sprawl also reduces automobile usage, as walkable neighborhoods are designed (Knaap and Talen, 2005). Advocates of New Urbanism further elucidate that by designing walkable and mix-used cities, with places for shopping and working, opportunities for socializing increases, and
ultimately contributes to diversity (Campbell and Fainstein, 2003; Grant, 2006). Nevertheless, as Ellis (2002) elucidates the concept of New Urbanism has received criticism and skeptical reception. Due to New Urbanism aspires to make use of old building patterns, one common critique centers on it being nostalgic and overlooks the economic and social realities of modern world (Ellis, 2002). Because as Ellis (2002) states in contrast to cities of the past, in today modern cities are people more mobile. Moreover, the economic realities has changed with the introduction of multi-national companies and globalization, as cities are now competing against each other. The notion of affordability in New Urbanism is also a source of criticism. As Campbell and Fainstein (2003) elucidate is the goal or objective of affordable housing quite contested, as New Urbanism depend on private developers for the development of walkable towns. As advocates of New Urbanism claim diversity and social mix could be achieved through New Urbanism, the reliance on private market to provide diversity could be counteractive. Because as Campbell and Fainstein (2003) state “failure of the market to provide diversity in most places means that if planners do not attempt to foster it, the outcome will be increasingly segregated neighborhoods and municipalities”. Which demonstrates the importance of balancing the development between private and public development, because as stated relying on the market to provide diversity and social mix could be problematic (Campbell and Fainstein, 2003, p. 183).

3.3.2 Smart Growth

As a reaction to the above-mentioned consequences of urban sprawl, Smart Growth was conceptualized. When and where the actual term Smart Growth originated is uncertain, however Burchell et al (2000) suggest that three projects in mid-1990s America could be associated to its rapid development. Smart Growth is a concept, based on the belief that through the usage of public and private subsidies urban growth could be refocused to inner metropolitan areas as well as in the suburbs (Burchell et al., 2000). Advocates of Smart Growth contends that old existing neighborhoods could be revitalized by providing mix land usage and creating walkable neighborhoods. Furthermore, by focusing the development on already built up areas, open spaces and farmland could be preserved, which is an major assertion for Smart Growth advocates (Downs and Costa, 2005). For achieving the proclaimed objectives increasing the population density is of utmost importance, as high-density development encourages walking, biking and public transportation usage because it increases the accessibility to services (Goetz, 2013). However, issues arise with the way Smart Growth is defined by various organizations, as the definition of Smart Growth has over time become broad (Knaap and Talen, 2005). Because
as Downs and Costa (2005) elucidate, different groups in society prioritize differently on which Smart Growth principle to focus on. Nonetheless, the consensus among Smart Growth advocates is that this approach would for inner city areas contribute to less consumption of undeveloped land, as the development would focus on infill and mixed-use (Burchell et al., 2000). Furthermore, as Smart Growth concept shares many of the goals of sustainable development initiatives, such as reducing traffic congestion and preserving farmland and open spaces, strengthens the arguments of Smart Growth initiatives (Ingram et al., 2009).

Even though the concept of Smart Growth has risen in popularity, for instances due to the climate change crises and increasing energy costs, is the concept not universally supported (Ingram et al., 2009). Critics of Smart Growth point towards the tendency of rising housing prices. As developing and locating more housing units on smaller land areas in combination of preserving open spaces and farmland leads to increasing housing prices because it removes the least expensive land from being available for development. Furthermore, having different prioritizes and objectives could be problematic. Because, as with the above-mentioned Planner’s triangle, having different priorities might lead different perspectives and ultimately contributes to conflicts between economic growth, environmental protection and social equity (Campbell and Fainstein, 2003; Downs and Costa, 2005).

### 3.3.3 Compact City

The concept of Compact City could be described as the opposite of urban sprawl, and is characterized by high densities and relatively short transportation distances (Schwarz, 2010). Compact City looks to older European cities as inspiration for accommodating urban development while at the same time minimizing the use of undeveloped land (Guérois and Pumain, 2008). Jabareen (2006) suggests that the Compact City concept is incorporated within the field of sustainable urban form, which includes compactness but also sustainable transportation. However, even though there is a strong relationship between urban form and sustainable development, it is not quite straightforward and simple. As above-mentioned, the way urban form is defined varies within the scientific field, which makes assessing the relationship difficult (Jenks et al., 2005)

The definition for Compact City varies but generally, it encompasses relatively high-density, mixed used city and are centers around promoting walking and cycling (Burton, 2000). The process of achieving a Compact City is usually referred as intensification or densification, and
entails redeveloping brownfield land, redevelopment on already built up land and importantly increasing the density of the population in urban areas (Burton, 2000). The main notion behind Compact City is the strive of obtaining sustainable urban form. Furthermore, the interest for Compact City as an urban planning approach centers around three main intents; economic, environmental and social sustainability. Because Jane Jacobs urban observations regarding the safety in the cities gave rise to questions about the quality of life, which connects to the attempts of creating social sustainability (Jenks et al., 2005). Smyth (1994) argues that in a globalized society, the competition between cities on a regional, national and international level to obtain investment influences the Compact City concept. Because, a fundamental argument of Compact City is to increase the population density to make services and amenities more economically viable. As more people living in closer proximity provides an increased customer basis for local businesses (Haughton and Hunter, 2004; Smyth, 1994). The support for Compact City as a sustainable urban planning approach has surged, largely in response to the concerns about the consequences of dispersed patterns of development on both the environment and society such as development on undeveloped land through urban sprawl which contributes to inner city decline (Couch et al., 2007; Jenks et al., 2005),

Proponents of Compact City strategies claim this approach will offer a higher quality of life for its citizens, because the alleged diversity created by this approach will have a positive outcome. As more segments of society are living and mixing in a dense area, could diversity and social mixing could be achieved (Boyko and Cooper, 2011; Jenks et al., 2005). Furthermore, increased population density could make services and amenities more accessible (Haughton and Hunter, 2004). Another potential benefit with the Compact City approach is that through densification could transportation distances be reduced which would bring down the level of emission and traffic congestions, which would be environmentally friendly and sustainable (Jenks et al., 2005).

However, on the downside critics to Compact City concept argue that this approach also contain a vast number of shortcomings, but they also contend that the potential benefits are exaggerated. As Thomas and Cousins (2005) state “there is evidence which suggests that these claims are at the least romantic and dangerous and do not reflect the hard reality of economic demands, environmental sustainability and social expectations. The overriding problem with the compact city is that it requires us to ignore the causes and effects of decentralization, and benefits it may bring” (Thomas and Cousins, 2005, p. 46). Which illustrates that the success and desirability of
Compact City is unclear, and lacks clear evidence for its alleged benefits. Furthermore, as Compact city centers around redevelopment on already built up land could it manifest in loss of green areas, therefore critics against Compact city claim it is an unsustainable approach that would produce unacceptable losses to the economic, natural and social environment (Jenks et al., 2005). In addition, advocates of Compact City insinuate that social equity could be achieved through densification. However, a fundamental issue with that claim is that scientific research, which addresses social equity, tends to center around an overall quality of life rather than on the effects of densification on the less resilient social groups or across different groups. Furthermore, the claim of social equity is often ascribed to Compact City, with little or no verification at all (Burton, 2000). Lastly, critics to the Compact City approach argue that the concern about energy issues and pollution has to be balanced with social, economic and environment objectives. Because the pressure of reducing transportation distances tends to be a central objective. As previously stated, to obtain sustainable than all three dimensions or pillars much be focused on, failure to do so may ultimately weaken the approach and therefore becomes unsustainable. Therefore any improvements of one aspect must be weighed against other benefits or losses (Frey, 1999; McKenzie, 2004).

### 3.3.4 Summary

As Bramley and Power (2009) stated, high-residential density is favored by advocates of urban form concepts such as New Urbanism, Smart Growth and Compact City. A recurring aspect within these densification strategies regards the disdain for urban sprawl and its alleged consequences for cities and regions (Bramley and Power, 2009). Advocates for densification strategies aim to reduce automobile usages as well as to create social mixing and ultimately diversity (Grant, 2006; Knaap and Talen, 2005). Furthermore, fundamental objectives for these densification strategies regard creating walkable neighborhoods, revitalizing central districts and enhancing residents life quality (Burchell et al., 2000; Grant, 2006; Jenks et al., 2005). Both New Urbanism and Smart Growth view the historically dense and older cities and small towns as an influence for achieving sustainability (Jenks et al., 2005; Katz, 1994). Lastly, the above-mentioned densification strategies share many of the sustainable development objectives such as preserving open spaces or farmland (Burton, 2000; Garde, 2004; Ingram et al., 2009).

However, even though these three densification strategies are quite similar, there are also some substantial differences between them. As Knaap and Talen (2005) elucidate Smart Growth and
New Urbanism differ in origin. Contrarily to architects and physical planners, which conceived New Urbanism, environmentalist have made Smart Growth well known. While New Urbanism and Smart Growth both put forward cities and small towns which are walkable and contain a diverse range of housing, New Urbanists focus more on the physical form than Smart Growth (Knaap and Talen, 2005). Additionally, advocates for New Urbanism and Compact City consider the private market as an important facilitator for development, while Smart Growth proponents consider the public subsidies as equally important (Downs and Costa, 2005; Jenks et al., 2005; Knaap and Talen, 2005).

Advocates of densification strategies propose a multitude of potential benefits with their approaches. Firstly, the alleged benefits with New Urbanism, Smart Growth and Compact City is that they would preserve open spaces by focusing on the conversion of existing development, thus, minimizing the use of undeveloped land (Guérois and Pumain, 2008). By also shifting the focus from the urban sprawl paradigm does advocates for densification argue that de-investment in urban core and inner-city decline could be addressed (Burchell et al., 2000). Additionally, a recurring aspect within the above-mentioned strategies is walkable neighborhood that are diverse, mixed used and pedestrian oriented. As they contend through the increased population density the likelihood of social mixing increases, as more segments of society would be living together and could ultimately mix. At the same time, advocates contend that an increased population density could revitalize the inner city areas, as more people are concentrated would increase the customer basis that ultimately contributes to services and amenities being more economically viable (Frey, 1999; Haughton and Hunter, 2004).

To conclude, some potential benefits of above-mentioned densification strategies could contribute to social and economic sustainability through: revitalizing inner city districts, minimizing the use of undeveloped land, enhance the quality of life, creating walkable and pedestrian friendly environment thus reducing the usage of automobiles, mixed-used land would contribute to a more vibrant community, enhance diversity.

On the downside, critics against above-mentioned densification strategies argue that these approaches would contain a vast number of undesirable outcomes. Firstly, the notion that these school of thought are more environmentally friendly and sustainable compared to urban sprawl is highly debatable (Frey, 1999). Limiting the development on open spaces and farmlands, the least expansive land is unavailable for development, which could contribute to increasing
property values. Moreover, as inner cities are advocated for redevelopment it could ultimately lead to development on green areas within the cities, thus resulting in environmental harm (Downs and Costa, 2005; Jenks et al., 2005). Furthermore, critics against above-mentioned densification strategies contend that while advocates for densification strategies argue for social equity they do not actually specify how that is achieved. Instead, the main assumption is that an increase population density would lead to an increased likelihood of social mix as more segments of society would be living together. Which, there are no or little verification for actually occurring (Burton, 2000). Moreover, the reliance on private developers to provide diversity could ultimately contribute to less social equity (Burton, 2000).

To conclude, some potential shortcomings of the above-mentioned densification strategies would be effects on several indicators of social and economic sustainability; increased housing prices, development on green areas within the cities, ignores segregation.

3.4 KEY ISSUES IN MODERN SWEDISH PLANNING

The Swedish society for the past century has experienced a vast progression, from a poor agricultural nation in the late 19th century to a rich industrialized nation in 20th century. Sweden is a sparsely populated country. Nonetheless, the pressure increased urbanization mounts on world’s cities could is also be felt in Sweden, as an increasing population requires more housing units (Björk et al., 2012). In just 100 years, the population of urban areas in Sweden has increased from 15% to 80% (SCB, 2015a). Nowadays, the population in urban areas are continuing to increase, however not primarily by the depopulation of rural areas, instead through immigation and increased birth rates (SCB, 2015b). The urbanization process, therefore is a fundamental element for to the rapid progression and transformation of Swedish cities (Björk et al., 2012).

Nonetheless, the modern times evolution of Swedish cities could be traced back to mainly three important historical phases. As the technological process in the industrial sectors, which the industrial revolution brought about, required a massive workforce did the population increase in the Swedish cities. During this time-period was vast land areas outside the city centers being developed to accommodate the rising population (Johansson and Orrskog, 2002). However, the establishment of the welfare state between 1950-70s, which is acknowledged as the second important phases, contributed to an immense transformation of the historical appearance of Swedish cities (Johansson and Orrskog, 2002). The expansion that occurred in previously
mentioned phases increased rapidly due to the growing vehicular accessibility. Moreover, as the accessibility of motoring increased was older cities adapted with new means of transportation, railway and vehicular traffic (Björk et al., 2012). Central districts experienced rejuvenation process, which aimed for accomplishing city centers with street life, shops and restaurants, as older residential housing were torn down. The third historical phase that shaped the Swedish cities occurred from 1980s and is still ongoing (Johansson and Orrskog, 2002). As the traditional industrial sector, which stimulated the urbanization process, were now due to a more globalized world having difficulties competing. The Swedish cities during this period therefore experienced an economic restructuring, the employment within the industrial sector diminished while the service and knowledge based sector grew. As industrial sector within cities declined and relocated was vast amount of land abandoned, has now contributed to central districts within the Swedish cities being redeveloped (Johansson and Orrskog, 2002).
4 Method

The methodological chapter initially presents mixed methods, beginning with the qualitative approach and ends with the quantitative approach. From there on, is SWOT-analysis and Geoprocessing introduced, which has been used as a tool rather than a method. Because the SWOT-analysis is made use of as an overbridging interpretation framework, which the discussion and analysis of the findings will be built around. Furthermore, due to simple maps to visualize the spatial patterns been constructed through ArcMap, has this also been utilized more as an tool rather than method, for instance by geoprocessing which entails matching and giving an old map geographical coordinates so it can be viewed with other geographical data. Lastly, the method is discussed and ethical considerations is addressed.

4.1 Mixed Methods

Commonly three method approaches could be operated when conducting a scientific study; qualitative, quantitative or mixed methods. Esaiasson et al (2007) contend a qualitative approach entails understanding and identifying phenomena's in depth, by way of exploring the meaning individuals and groups assign to a social or human problem. Furthermore, qualitative data has a tendency to be open data without predetermined responses. Quantitative approach on the other hand entails organizing, describing and analyzing data through for instance statistical methods (Burt et al., 2009). Quantitative data inclines, contrary to qualitative data, to be absolute with predetermined answers such as for example questionnaires. This study has ultimately opted to make use of a mixed method, because this approach involves collecting both quantitative and qualitative data. A quantitative approach is useful for understanding the best predictors of densification process, while qualitative information is best for exploring meaning individuals and groups assign to a social or human problem. Moreover, the qualitative approach is also helpful for identifying which important variables to examine in the quantitative approach. Therefore, mixed methods were used, as merging and integrating both approaches provides a more complete understanding of the research problem (Creswell, 2014).

Within the field of mixed methods, multiple research design options exist. This thesis has made use of convergent parallel-mixed methods, because in contrast to other design, which first conducts either a qualitative or quantitative analysis and then builds on it, convergent parallel-mixed methods combines and includes both approaches in the overall results (Creswell, 2014).
4.1.1 Qualitative Approach

Qualitative approach contains a broad variety of methodological approaches, from interviews to case studies as well as divergent interpretation and analyzing paths (Bryman, 2011). This study makes use of interviews as the base for the qualitative research approach because through interviews it might be possible ascertain what agents such as planners within the city and the case area thought of the densification process and in due course ascertain their thoughts on the possible outcomes. However, the interview field encompasses a broad range of different techniques, for instance structured interviews where the interviewee responds to already prepared questions. Semi structured interviews on the other hand is characterized by flexible probing questions that ultimately narrows of and becomes detailed (Kvale, 1997). This thesis decided to make use of semi-structured interviews because contrary to structured interviews does this approach allow one to ask potential follow up questions where the informants could expand their answers. Moreover, in contrast with structured interviews does semi-structured interviews also allow one to modify and adapt the questions based on the informant’s background and position. Which in this case meant probing questions regarding the densification strategies could be asked the informant in the City Planning Authority while the informant in the Lundby District Administration could be asked about the development within the district.

Selection of informants

An essential component within interviews is the sampling, that is the goal of including people with the most understanding of the current topic (Esaiasson et al., 2007). Therefore, the intention was not to choose a representative sample, rather to select those who are relevant for the research, so called goal oriented sampling (Bryman, 2011). Thereby, two interview requests were sent out to the City Planning Authority and Lundby District Administration for obtaining officials handling these issues and topic. Ultimately, for the City Planning Authority an Architect was recommended and for Lundby District Administration a Development Manager in Urban Planning was recommended.

Furthermore, where an interview is held is also an essential component, because as Flowerdew and Martin (2005) explain, holding interviews on their territory could facilitate a more relaxed environment and ultimately contribute to a more natural dialog, which could enhance the
interview. On that ground, both interviews took place in their respective offices at the City Planning Authority and Lundby District Administration on the 16th and 20th of March 2017.

**Interview Guide**

One “correct” way of conducting interviews does not exist because each informant is an individual and therefore each interview will be different. However, an essential approach for conducting a successful interview is by educating yourself beforehand on the topic as well constructing an interview guide. Because asking questions might be the easy part while listening and responding tends to be harder, therefore by using an interview guide it is easier to monitor which questions to ask as well as preparing in advance (Flowerdew and Martin, 2005). As Bryman (2011) further elucidates, with an interview guide listening and following the informant’s train of thoughts is easier because one don’t need to pause and look at the questions. In this study, two interview guides have been assembled, one for each informants, on the account of their position and background. The differences is that the questions for the Architect at City Planning Authority centered on the densification strategies, whereas the questions for the Development Manager in Lundby were more district (locally) related. Furthermore, as the research problem explores a specific district within Gothenburg, sending the interview questions was perceived more beneficial than not sending in advances, as both informants could prepare material about the case area.

**Recording and transcribing**

When conducting interviews, it is important to be alert and engage in proper conversation with the informants therefore using a tape recorder is beneficiary. Because using a recording equipment allows one to concentrate on the interview without the pressure of writing down the information (Bryman, 2011). However, downside with using a tape recorder is that it’s time consuming to process the information (Patel and Davidsson, 2003). Nevertheless, this thesis decided to make use of recording device, with the consent of the informants, because it allowed one to be fully focused on the interviews rather than taking notes and possibly missing specific phrases or in worst case misunderstand.

Since both interviews was recorded, they needed to be transcribed in order to collect the information. In order to avoid losing valuable information, both interviews were transcribed as quickly as possible while they were fresh in my mind. Furthermore, a benefit of transcribing
quickly is that the interviews could also be processed and analyzed quicker (Flowerdew and Martin, 2005).

**Data Analysis**

Due to the complexity in text analysis, no standard method or approach for analyzing text exist, at least not in the same way there are a number of established techniques for statistical analysis. However, Kvale (1997) advises that five approaches of analyzing text is usually conducted. This thesis has decided to make use of a *concentration* analysis, which entails compressing sentences expressed by the informants into shorter statements. This approach was perceived more beneficiary, because the essential meaning of what has been said is reworded in a few sentences, than of reducing the statements by coding them into categories and eventually presenting them in figures and tables with a *categorization* analysis (Kvale, 1997). As the reasons behind conducting the interviews was to obtain a better understanding of what agents such as planners within the city and the district thought of the densification process, therefore presenting the information in tables and figures is not suitable, especially when only two interviews was conducted. Before the analysis, as Kvale (1997) suggested, the information was processed, in other words essential and irrelevant information such as repetition was structured and organized. Since the research scope in this study concerns densification strategies and its potential outcomes, information deviating from the research scope is deemed irrelevant information and will not be presented. Thereafter, the transcription of the interviews were processed and analyzed by firstly translating it from Swedish to English and then organized and structured around three themes: *densification, sustainability and obstacles*.

### 4.1.2 Quantitative Approach

As previously stated, quantitative methodology entails organizing, describing and analyzing data through statistical methods. However, quantitative methodology is further divided between descriptive and inferential statistics (Burt et al., 2009). The difference is that with descriptive statistics the data is described in manageable forms such as graphs and summaries while with inferential approach generalizations are made with sample data. Nonetheless, both approach contains data collections and data analysis (Burt et al., 2009).

This thesis makes uses of a descriptive statistics as the quantitative approach, because it enable one to present the statistical data in a meaningful and simple way. Furthermore, this approach in combination with the qualitative approach (interviews) is a feasible method.
**Data Collection and Sources**

A crucial feature in statistical methodology is the data collection because to derive conclusions from the data relies on understanding how and where the data was collected (Bryman, 2011). This study is entirely based on secondary data, i.e. data that already has been collected by somebody else for a different purpose because making use of primary data, that is collecting the data yourself (Flowerdew and Martin, 2005), is inconceivable as this thesis aims to investigate the densification process over time.

Aside the collection of data from one private real estate agency (Booli), all the data has been collected from the city of Gothenburg's statistical database. Gothenburg's statistical database derives from Statistics Sweden population register and concerns the registered population in Gothenburg, consequently people who is not registered in Gothenburg such as asylum seekers, are not included in the statistical information. Subsequently, the statistical information is disaggregated on the base areas, number of properties that are located next to each other where the boundaries is drawn in streets or other natural borders. Thereupon, obtaining statistical information on smaller areas, such as district levels, is achievable, which was a major reason for why statistical information were retrieved from the city of Gothenburg's statistical database instead of Statistics Sweden (SCB) even though the data itself derives from Statistics Sweden population register. In addition to the official governmental data has data concerning purchase prices for properties been collected from Booli, a private real estate agency. It is important to acknowledge that the data from Booli is also a secondary data, however contrary to official data that are highly reliable; this information is not as reliable. Firstly, the data relies on both private real estate brokers and private individuals to share the information with Booli; secondly, Booli is also a search engine for people to find properties for sale (Booli, 2017). Nevertheless, due to the information collected contains a high amount of sold properties, about 2400 objects for Lundby, during the studied time-period is this data perceived appropriate as a proxy representation for understanding the housing prices in Lundby.

**Indicators and Variables**

The next important step when utilizing a statistical methodology, particularly when using secondary data is choosing and utilizing indicators as means of operationalizing the study. Indicators are measurable variables used as an proxy representation of an associated factor or quantity (Bryman, 2011). The variables, which is divided in three groups; housing supply and
property values, population composition and economic conditions, has, based on the theoretical framework, been chosen to represent the social and economic development prior and after the development during 2008-2015. However, it is important to remember that some inherent shortcomings do exist by using proxy representations, for instance it could mask the relationship between the proxy and what it represents (Burt et al., 2009). Nevertheless, for investigating the densification outcome in Lundby, proxy variables is useful for achieving the aim of this thesis.

Proponents of densification strategies stress the importance of converting already existing development as means of preserving open spaces and land, which would be environmentally friendly and sustainable (Guérois and Pumain, 2008). However, by removing the least expansive land and minimizing the outward expansion and focusing the development on a smaller and existing land could not only contribute to an increase in housing prices but also eventually loss of open spaces within cities (Downs and Costa, 2005; Frey, 1999). Because of these claims, multiple ArcMap figures will illustrate and visualize the land use in Lundby during the investigated time-period. Secondly, for investigating whether the densification process has contributed to increasing property values is two variables used, housing construction and purchase price for housing unit. The housing construction variable not only contain information of the number of new housing units and location but more importantly the form of tenure. The variable purchase price contains data about the purchase price for properties: condominiums, small houses, semi-detached houses, town houses and linked-houses, in Lundby between 2008 and 2015. To account for extreme values within the property prices the purchase prices is not illustrated as the mean but as the median, because as Flowerdew and Martin (2005) argue, extreme values could distort the mean value. Furthermore, the variable purchase prices has been adjusted to match the inflation of 2015, for making a proper comparison between the years (SCB, 2017b).

A recurring claim within various densification strategies is the increased likelihood of social mix, of neighborhoods that are diverse (Frey, 1999). Proponents of densification strategies further contend that an increased population density would not only contribute to making amenities and social services more economically viable but it would also enhance the social mix (Haughton and Hunter, 2004). However, as Burton (2000) explains, proponents of densification tends to exaggerate the potential social benefits of the densification process. With that in mind, for assessing and investigating these claims various variables will represent the socio development in Lundby. The variable population contains information about the number of inhabitants, as
well as the gender and age of said population. The variable *population background* regards whether the population has a Swedish or foreign background. To have a Swedish background one has to be born in Sweden or abroad with at least one Swedish born parent while foreign background involves being born abroad or in Sweden with two parents born abroad (Göteborg Stad, 2017i). Furthermore, the educational standing is based on those aged 18-64, although the working force age normally in statistics Sweden's data, also contains those aged 16 and 17 so are they not represented in this thesis due to Gothenburg’s database not containing that information. Therefore, the working force throughout this thesis is defined as those aged 18-64. Last variable, within the subgroup population composition, regards the *population density* is quite straightforward and contains information regarding the number of inhabitants/km².

Assessing the economic development is imperative for deriving to conclusions regarding the outcomes of the densification process in Lundby. According to densification proponents, this approach offers means for addressing the inner city decline and de-investments by for instance increasing the population density, which would make amenities more economically viable (Haughton and Hunter, 2004). However, Campbell and Fainstein (2003) contends that densification strategies ignores the economic reality of modern world, such as increased competition due to the globalization. Therefore, for investigating these assertions various variables will explore and represent the economic development in Lundby over time. Firstly, as Hedin et al (2012) argue, for understanding the socioeconomic change then average income is useful because it’s an adequate and precise measurement. The income variable has been price adjusted to match the inflation of 2015, so a proper comparison between the years could be made (SCB, 2017b). Lastly, an important claim for densification is that by creating walkable neighborhoods then the transportation distances could be reduced, which is environmentally friendly (Frey, 1999). However, economic development has historically been associated with vehicle ownership because as Dargay et al (2007) explain vehicle ownership increases with higher income level. With that in mind, the number of registered vehicles will also infer and represent the economic development. Table 1 shows all the variables used for investigating the socioeconomic as well as its attributes, spatial level, time-period and source.
Table 1: The variables for investigating the socioeconomic development in Lundby, 2008-2015

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Spatial Level</th>
<th>Year</th>
<th>Source</th>
</tr>
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<tbody>
<tr>
<td><strong>Housing Supply and Property values</strong></td>
<td></td>
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</tr>
<tr>
<td>Construction</td>
<td>Number of constructed housing units and form of tenure</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
</tr>
<tr>
<td>Purchase price</td>
<td>Purchase price for a property: condominiums, small houses, semi-detached houses, town houses and linked-houses</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Booli</td>
</tr>
<tr>
<td><strong>Population Composition</strong></td>
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<tr>
<td>Population</td>
<td>Number of inhabitants, gender and age</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
</tr>
<tr>
<td>Population background</td>
<td>Swedish or Foreign</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
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<tr>
<td>Education</td>
<td>Population (18-64) with primary, secondary or tertiary education</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
</tr>
<tr>
<td>Population density</td>
<td>Inhabitants/km²</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
</tr>
<tr>
<td><strong>Economic Conditions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>Income from employment and income from business activities</td>
<td>District</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
</tr>
<tr>
<td>Income</td>
<td>Income from employment and income from business activities</td>
<td>Precinct</td>
<td>2011-2014</td>
<td>Göteborgs Stad</td>
</tr>
<tr>
<td>Vehicle ownership</td>
<td>Number of registered vehicles</td>
<td>District, Precinct</td>
<td>2008-2015</td>
<td>Göteborgs Stad</td>
</tr>
</tbody>
</table>

**Data processing**

The raw data based on the selected indicators underwent various steps of processing, mainly using Microsoft Excel. Firstly, in consideration of the multitude of indicators, the data was initially organized and assembled based on which subgroup they related to, for example housing construction in the housing supply subgroup. Furthermore, as the variable *purchase price* contained more than 2200 observations it was therefore necessary to sort the information, by for instances year (Patel and Davidsson, 2003). Due to the chosen methodology is descriptive statistics the information was processed to be presented and visualized in form of numerous graphs and figures. For instance, measuring the population change by comparing the number of inhabitants in 2008 with 2015, at the same time an annual growth rate could be calculated by
comparing each year. Percentage (relative) change was calculated to show the changes over time.

4.2 SWOT-Analysis

SWOT-analysis originated as an approach within the business management field, but it has in recent developed to be a planning tool, which attempts to analyze the strength, weaknesses, opportunities and threats of the targeted objective. Nowadays is SWOT-analysis a widely used tool in multiple fields, for instance within urban planning (Karppi et al., 2001). As an example, Halla (2007) analyzed the urban management field in Dar es Salaam, Tanzania, with SWOT-analysis, especially their procedural or master-planning. Through a SWOT-analysis, it is possible to identify what strengths: resources that can help one to achieve its objectives, weaknesses: obstacles that could impede the objective, opportunities: the opportunities the situation provides which can be beneficiary, and threats: the disadvantages that situation provides that can be hurtful for achieving its objectives (Karppi et al., 2001). In this thesis, as mentioned earlier a SWOT-analysis will be used to interpret the findings, therefore the discussion and analysis chapter will be built on a SWOT-analysis. That is the strengths, weaknesses, opportunities and threats of the densification process in Lundby, Gothenburg will be visualized and discussed.

4.3 Geoprocessing

Geographical information system, GIS, is a useful tool in many different research projects, to process geographically referenced data (Flowerdew and Martin, 2005). With GIS it is possible to do multiple different types of analyses, for instance by combing many data layers or constructing simple maps to explain the spatial patterns that could be observed (Mitchell, 1999). In this study has GIS been made use of more as a tool for visualizing the spatial patterns. That is, the indicators has been mapped in various categories for visualizing their spatial patterns on the precinct level. Furthermore, a major reason for making use of ArcMap was to visualize the land use in Lundby 2008 and 2015. For achieving the stated objective, firstly an older map, see Appendix 1, is georeferenced to match a new map. As Mitchell (1999) explains, georeferencing entails matching and giving an old map geographical coordinates so it can be viewed with other geographical data. In this thesis, a map from 2008, which has been obtained through city of Gothenburg³, has been matched and given the same geographical coordinates as a map from 2016, from Lantmätariet.

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³ Göteborgs Stadbyggnadskontor Arkiv, 2017, personal communication
However, due to the 2008 map not being in same format as the 2016 map, could no building layers be obtained. Therefore, to be able to visualize the land use, the building layers from the new map has been layered above the 2008 map, which is used as a background. In other words, if the building layers from the 2016 map matched the 2008 map this means that the buildings existed in 2008, if not then it is either new development or has been demolished. Ultimately, the constructed maps demonstrates the land use in 2008 and 2015.

4.4 Method Discussion

In conducting statistical analysis, causality is an important feature. Since this thesis has mainly utilized univariate and bivariate analysis, which entails analyzing variables one or two at a time in order to show how they are related, it is important to be aware that it does not show cause and effect but the relationship between variables. However, as Bryman (2011) states, all methods of analyzing relationships between variables show the relationship and not cause and effects. Nonetheless, a vital reason for making use of a mixed method is that when neither quantitative nor qualitative approaches is in itself adequate for understanding the research problem then, as Creswell (2014) stated, mixed method is more useful. Therefore, since in this study no multivariate analysis has been conducted, the qualitative approach, with its theoretical framework, will certainly be vital for explaining the relationships that can be observed in the findings.

4.5 Ethical Considerations

As two semi-structured interviews were conducted in this study, essential research ethics issues regarding for instance confidentiality and recording has to be addressed. A crucial feature in interviews concerns whether informants approve appearing with their name or wants anonymity and confidentiality. Because as argued by Patel and Davidsson (2003) the informants might alter their answers if they know that they are being recorded and are appearing with their name. Which could impede the natural dialog but also lead to having difficulties with securing their cooperation. Nonetheless, both informants were told of the research aim and goals but more importantly also given the option of being confidential. Furthermore, the interviews were conducted in their respective offices for facilitating a more relaxed environment. Ultimately both informants gave their consent of appearing with their name and title as well as being recorded.
As a substantial share of the statistical data used in this study derives from Statistics Sweden population register, thereby some ethical issues has to be addressed as well. As this study focused on Lundby district, has the statistical information gathered been on disaggregated to district level, which has produced certain ethical issues. When the number of observations were too few, for instances by age, then the data became classified because it is important to make sure no individual can be traced, therefore the age groups in this study is more broader and has been reduced to four. Furthermore, the indicators for study this has been based on the theoretical framework but the accessibility of reliable data also influenced the indicators. Thereby, it is important to acknowledge the limitations within the statistical data as well as the chosen quantitative approach. The obtained statistical information produced limitations for one to be able to conduct a multivariate analysis; thereby the cause and effect could not be addressed.
5 RESULTS

This chapter will present the findings from the statistical analysis as well as the interviews. As vast amount of information will be presented, has this chapter been divided into two sections: the statistical findings, which will be presented first, and the quantitative findings, which will be presented lastly.

5.1 HOUSING SUPPLY AND PROPERTY VALUES

Over the investigated time-period has Lundby district experienced a development of 6392 new housing units. The overall housing construction in Lundby encompassed 48% of all the new housing development in Gothenburg, while for instance Majorna-Linné district experienced a construction of 386 new housings, 3%, during the same time-period. Figure 6 show that the prevailing form of tenure developed was condominiums, as it constituted more than 60% of the constructed housing units in Lundby. In fact, the number of condominiums developed in Lundby surpasses rental dwellings almost every year, between 2008 and 2015.

![NEW HOUSING IN LUNDBY, 2008-2015](image)

*Figure 6: Housing units form of tenure, 2008-2015. Source: Göteborgs Stad, 2017f*

However, not every primary precincts in Lundby has experienced the same degree of development. Because further analysis of the data show that, a majority of the development took place in Eriksberg, Kvillebäcken and Lindholmen primary precincts. In fact, out of the 6392 new housing units, more than 80% has been concentrated in above-mentioned precincts, while
Kärrdalen on the other hand only experienced 0.4% of the overall housing development in Lundby.

As condominiums showed to constitute more than 60% of the constructed housing units in Lundby during this time-period, does Figure 7 illustrate that the distribution of new condominiums within Lundby are uneven. As can be seen, certain precincts in Lundby experienced a higher concentration of newly developed condominiums than others. In Eriksberg, a precinct where 45% of the overall housing development occurred during the investigated time-period, a substantial share of the new housing units are condominiums. Meanwhile in Rambergsstaden all newly developed housing units, were condominiums. Contrary to the development in above-mentioned precincts has Kyrkbyn experienced a substantial increase of rental dwellings, as rentals constituted more than 80% of the newly constructed units. Consequently, Figure 6 and Figure 7, show that condominiums has been the dominating form of tenure, but also that various primary precincts within Lundby has experienced different degrees of development.

**Table 1: Development of Condominiums, 2008-2015**

<table>
<thead>
<tr>
<th>Precincts</th>
<th>Condominiums</th>
<th>Renting</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eriksberg</td>
<td>2136 (73%)</td>
<td>783 (27%)</td>
<td>2919</td>
<td>45.7%</td>
</tr>
<tr>
<td>Kvilebäcken</td>
<td>675 (46%)</td>
<td>796 (54%)</td>
<td>1471</td>
<td>23.0%</td>
</tr>
<tr>
<td>Kyrkbyn</td>
<td>54 (17%)</td>
<td>265 (83%)</td>
<td>319</td>
<td>5.0%</td>
</tr>
<tr>
<td>Kärrdalen</td>
<td>14 (54%)</td>
<td>12 (46%)</td>
<td>26</td>
<td>0.4%</td>
</tr>
<tr>
<td>Lindholmen</td>
<td>436 (55%)</td>
<td>524 (45%)</td>
<td>960</td>
<td>15.0%</td>
</tr>
<tr>
<td>Rambergsstaden</td>
<td>535 (100%)</td>
<td>0 (0%)</td>
<td>535</td>
<td>8.4%</td>
</tr>
<tr>
<td>Slätta Damm</td>
<td>103 (64%)</td>
<td>59 (36%)</td>
<td>162</td>
<td>2.5%</td>
</tr>
<tr>
<td>Overall</td>
<td>3953 (62%)</td>
<td>2439 (38%)</td>
<td>6392</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Figure 7: The share of condominiums out of all new housing units, 2008-2015. Source: Göteborgs Stad, 2017f**
Following maps, Figure 8-12, explores and visualizes the land use in Lundby, especially the land use changes between 2008 and 2015. Figure 8 displays Eriksberg primary precinct, as above mentioned a precinct where more than 45% of the new housing units in Lundby took place. As can be seen in the map, a vast proportion of the new housing units has focused on multi-dwelling residential buildings, though some small residential houses have also been built during the investigated time-period. Furthermore, the highlighted red circles in Figure 3 points out that some the new development in Eriksberg took place on already built up area, suggesting that buildings were demolished to make room for new development. Aside from the redevelopment on existing land, the blue circles point out that during the investigated time-period, two more buildings have been demolished; however, nothing has been built on that land (yet). In addition to the development of new housing units, development related to civic and commercial functions has also been developed in Eriksberg.

![Figure 8: Land use in Eriksberg precinct, 2008 and 2015. Data source: Lantmäteriet, 2017. Own Design](image_url)
The development in Kvillebäcken amounts to about 23% of the overall housing development in Lundby. As can be seen in Figure 9, does the development in Kvillebäcken follow same patterns as seen Eriksberg, namely multi-dwelling buildings being the prevailing type of house developed. As Eriksberg, Kvillebäcken has also experienced development on built up area, indicating that buildings were demolished to make room for new development (see red circle). However, unlike Eriksberg precinct has Kvillebäcken seen development of new housing units on a football pitch, which shows loss of recreation area (see the small red circle). At the same time, the blue circle show that multiple buildings has been demolished between 2008-2015, however no development has occurred on that land (yet). Aside from the development of residential buildings has also school been built but also some commercial function has been developed.

Figure 9: Land use in Kvillebäcken precinct, 2008 and 2015. Data source: Lantmätariet, 2017. Own Design
Even though 15% of Lundby’s housing development during the investigated time-period has occurred in Lindholmen, Figure 10 displays that in fact not much has happened in Lindholmen, at least when it regards the development of housing units. However, as pointed out in the red circle, Lindholmen has also experienced redevelopment on existing built up area, indicating that buildings were demolished. Furthermore, as above-mentioned precincts Lindholmen has also experienced the demolition of multiple buildings, which land has not been development on (yet). Nevertheless, contrarily to Kvillebäcken and Eriksberg, Lindholmen has undergone the development of multiple commercial buildings.

*Figure 10: Land use in Lindholmen, 2008 and 2015. Source: Data source: Lantmätariet, 2017. Own Design*
In contrast to Eriksberg, Kvillebäcken and Lindholmen, Kyrkbyn has not experienced the same degree of development during the investigated time-period; in fact, only 5% of the overall housing development in Lundby occurred in Kyrkbyn. On the other hand, similarly to above-mentioned precincts multi-dwelling housing has once more been the dominating type of housing building. Yet, as seen in Figure 11, in comparison with previously mentioned precincts the development in Kyrkbyn has been dispersed across the area, some development has been concentrated in a certain area but overall the development in Kyrkbyn displays a more dispersed pattern. Furthermore, in Kyrkbyn has multiple commercial functions such as schools, been developed during the investigated time-period. However, as can be seen in the highlighted red circle, one of the civic function buildings has been developed on the site of a football pitch, contributing to loss of recreation area.

Figure 11: Land use in Kyrkbyn, 2008 and 2015. Data source: Lantmätariet, 2017. Own Design
Lastly, Figure 12 depicts the land use in Rambergsstaden precinct, which is a precinct that experienced 8% of the overall housing development in Lundby during the investigated time-period. Not much development has occurred in this precinct. As in every other precinct shown previously, the new housing is of multi-dwelling type. Nevertheless, what stands out compared to other precincts is the development of a new football stadium, as highlighted in the red circle. However, it is important to acknowledge that the new football stadium is developed on the same land as an old football stadium, which has now been demolished and substituted by the new stadium.

![Figure 12: Land use in Rambergsstaden, 2008 and 2015. Data source: Lantmäteriet, 2017. Own Design](image)

As shown in Figure 8-12 the land use has changed over time in Lundby. In multiple precincts has development occurred on existing built up land, following the demolishment of older buildings. However most importantly the development in Kyrkbyn and Kvillebäcken has contributed in some extent to loss of recreational land as development occurred on football fields.
Whether the increased development seen in Lundby had an impact on the purchase price for housing is explored in following Figure 13. As can be seen, the median purchase price for a property in Lundby has during the investigated time-period increased. As of fact, every housing type in Lundby have increased in median purchase price. Condominiums, which begins in 2012 because unfortunately no data could be retrieved for previous years, show that the median purchase prices increased from below 1.5 million SEK in 2012 to almost 2.5 million SEK in 2015. It is a substantial increase of 70% percentage units during this time-period. Correspondingly, the median purchase price for houses has seen a similar percentage of 70%, from a median purchase price of 2.3 million SEK in 2008 to 4.1 million SEK in 2015. During the studied time-period had the property values in Lundby increased by 18%, from 2.3 million SEK in 2008 to 2.76 million SEK in 2015. Furthermore, compared to the overall purchase price in Gothenburg, a property in Lundby, 2015, is more expansive than in Gothenburg 2.76 million SEK respectively 2.1 million SEK.

However, in contrast to Majorna-Linné district, which experienced only 3% of the overall housing development, Lundby has seen a smaller property value increase. As of fact, between 2012 and 2015 did the property values in Lundby increase by 10% while it increased by 34% in Majorna-Linné, from 2.3 million SEK to 3.1 million SEK.

\[\text{Figure 13: Median purchase price for a housing unit in Lundby, 2008-2015 (2015 price level): Source: Booli, 2017}\]
The median purchase price in Lundby during the investigated time-period showed to have increased over time, but then on the other hand did Figure 2 show that the development of housing units varied within the district. For that reason does, Figure 14 explore the median purchase price for a housing unit on finer scale, precinct level instead of the aggregated level of the entire district. As previously stated, the median purchase price for a property in Lundby was 2.76 million SEK in 2015, Figure 14 show that median purchase price within the district varies. Eriksberg, Kärrdalen and Lindholmen, shows to have the highest median purchase price within the district. While Slätta Damm and Rambergsstaden had the lowest median purchase price of 1.73 respectively 1.78 million SEK.

![Purchase price, 2008-2015](image)

*Figure 14: Median purchase price in Lundby, 2008-2015 (2015 price level). Source: Booli, 2017*

### 5.2 Population Composition

Lundby is by far the district in Gothenburg which has experienced the fastest population growth during the studied time-period, as the population grew from 38 304 inhabitants in 2008 to 49 875 inhabitants in 2015. In fact, more than 30% of the overall population growth in Gothenburg occurred in Lundby during this period. However, further analysis show that various precincts in Lundby has not experienced the same degree of population growth. The fastest population increase within Lundby could be found in Eriksberg, which had a population growth of more
than 100%, from 4184 inhabitants in 2008 to 8858 in 2015. At the same, Kärrdalens population only grew with 4% during the same time-period, from 4894 inhabitants in 2008 to 5198 in 2015. More often than not, population growth coincides with an increase in the population density. The population density in Lundby has experienced an upsurge of 30 percentage units during the investigated time-period, from a density of 2337 inhabitants’ per km² in 2008 to 3042 in 2015. Even though the rapid rise in population density during the studied-period, is Lundby only the third densest district in Gothenburg. Following Figure 15 show the population density within Lundby’s seven precincts. As can be seen, some precincts has experienced a more dramatic increase than others. Contrary to Kärrdalen, which only experienced an population density increase of 6%, from 3101 in 2008 to 3507 in 2015 does Eriksberg however stands out as the population density increased by 112%, from 3546 inhabitants per km² in 2008 to 7507 in 2015. In overall, the population density in Lundby has increased during the studied time-period.

![Population Density in Lundby, 2008 and 2015](image)

*Figure 15: Population density in Lundby, 2008 and 2015. Source: Göteborgs Stad, 2017g*

As Lundby is Gothenburg's fastest growing district during the investigated time-period, further analyzing of what this brings about for the population structure is appropriate. Therefore, this section explores the population structure, in terms of gender, age, education and ethnical background. The statistical data shows that over the studied time-period, has actually nothing changed when it comes to the gender distribution. In fact, the gender distribution is evenly distributed in Lundby, with 51% men and 49% women.
When it comes to the age distribution, does the data show that those aged 20-44 year is the dominating age group, as they constituted more than 45% of the overall population in Lundby in 2015. Exploring the percentage changes in the overall age distribution during the investigated time-period in Lundby, show that the age distribution has changed slightly over time. For instance the age group 65+ has decreased with 0.9%, from constituting 14.6% of the overall population in 2008 to 13.7% in 2015, while those aged 20-44 years increased by 1.2% during the investigated time-period, from 45.8% of the overall population in 2008 to 47% in 2015.

Nevertheless, the changes in age groups showed to be rather miniscule, therefore the age distribution will be further analyze on finer scale, precinct level, to explore whether the age distribution within the precincts show different outcome. As can be seen, various precincts in Lundby has a variance in the age structure but they also experienced different changes during the studied time-period. Figure 16 shows that, the age group 65+ has decreased in almost every precincts. Contrary to Lindholmen, which experienced an increase of 5%, did those aged 65+ decrease the most in Slätta Damm, by 7% during the studied time-period. Lindholmen however experienced a decrease in every other age group between 2008-2015. Nonetheless, Figure 16 shows that no clear consistent pattern within the district, in fact certain precincts had a substantial increase while other experienced a decline.

Figure 16: Changes in age structure, 2008-2015. Source: Göteborgs Stad, 2017h
Another characteristic of the population configuration regards the inhabitants' background, which is whether they have a Swedish or a foreign background. The data show that about 73% of the population in 2008 were of Swedish background, however as of 2015 had the number of inhabitants with a Swedish background slightly declined, to 70%. Hence illustrating that share of inhabitants with foreign background has during the studied time-period increased with 3%.

Lundby’s population composition, in terms of inhabitant’s background, showed that 70% of the population were of Swedish background in 2015. However, when the data is explored at a precinct level it demonstrates that within Lundby’s seven primary precincts does the background structure vary. Figure 17 show that aside from Kvillebäcken has the population with foreign background increased in all precincts. Thus, those with Swedish background has decreased between 2008 and 2015. Even though Kvillebäcken did not experience an increase of foreign born, is this precinct the most evenly distributed as the population consisted in 2015 of 60% Swedish born and 40% foreign born. Eriksberg and Lindholmen in contrast had the highest share of Swedish background, 78% respectively 79% in 2015.

![Figure 17: The inhabitant’s background at a precinct level, 2008 and 2015. Source: Göteborgs Stad, 2017](image)

Examination of the inhabitant’s background in Lundby, this time with consideration of age further clarifies that even though the share of people with foreign background increased with 3% during the investigated time-period, does further examination show certain age groups with foreign background increased while other decreased. As of fact, those aged 19-44 has increased, from constituting 49% of those with foreign background in 2008 to 51% in 2015. Meanwhile the
age group 45-64 decreased by 1% during the investigated time-period, from 25% in 2008 to 24% of the overall population with foreign background in 2015. For the inhabitants with Swedish background, has the age group 0-19 increased the most during the investigated time-period, from 15.5% in 2008 to 16.7% in 2015, while those aged 65+ has contrarily decreased by 1.2% during the investigated time-period, from constituting 16.2% of the population with Swedish background in 2008 to 15% in 2015.

Another socioeconomic feature of the population, involves the level of education. During the investigated time-period has on the one hand the share of people with secondary education dropped from 43% to 38%. On the other hand has the share of those with tertiary education increased substantially, 39% in 2008 to 48% in 2015. Nevertheless, the level of education in Lundby has overall increased during the studied time-period.

As those with tertiary education showed to be the largest education group in Lundby, has their spatial distribution within Lundby’s seven precincts been mapped. As can be seen in Figure 18, certain precincts in Lundby has a higher concentration of highly educated people. In fact, Eriksberg and Lindholmen are two precincts, where the highly educated, in 2008, were in the majority, with 54% and 55% of the population, At the other hand of the scale, Kyrkbyn had the smallest share of highly educated people in Lundby, in 2008 as well as in 2015, 34% respectively 41%. Highest share of highly educated people in 2015, could be found in Lindholmen, with 67% of its population had a tertiary education. Nevertheless, in general has the level of education in all precincts increased in Lundby, although some much more than others.

Figure 18: Share the population in working age with tertiary education in Lundby, 2008 and 2015. Source: Göteborgs Stad, 2017]
5.3 Economic Conditions

The average income for working age in Lundby increased during the investigated time-period, from an average of 250 554 SEK in 2008 to 304 538 SEK in 2015. As of fact, Lundby’s income increase of 22% is higher compared to overall average income on Gothenburg or Majorna-Linné district which during the same time-period experienced an increase of 17%, from an average of 266 992 SEK in 2008 to 312 041 kr SEK in 2015 for Majorna-Linné. Nevertheless, the average income is higher in Majorna-Linné than in Lundby.

Further examination of the data, show that the average income in Lundby varies with the level of education, as those with primary education earned an average of 186 065 SEK in 2008 while those with tertiary education averaged an income 286 888 SEK in 2008. However, regardless of the educational status, the average income has increased in Lundby during the studied time-period. As of fact, the averaged income increased the most for those with secondary education, 21%, from an average 242 424 SEK in 2008 to 293 679 SEK in 2015, while those with primary and tertiary education experienced an 11% respectively 18% increase.

![Average Income, Depending on Age, 2008-2015](image)

*Figure 19: Average income, depending on age, 2008-2015 (2015 price level). Source: Göteborgs Stad, 2017k*

When age is taken into consideration, the average income varies within the age groups. In Lundby had 18-24 year olds the lowest average income 116 490 SEK in 2008, while those aged 45-64 earned average of 304 171 SEK in 2008. Figure 19, show that during the investigated time-period, the income increased for every age group, in fact compared to 2008 it increase by 21% for 18-24 year olds and 25% for 45-64 year olds in 2015. Meanwhile the age group 25-44 obtained the lowest income increase during the same time-period, 17%, from an average 261
012 SEK in 2008 to 304 540 SEK in 2015. Furthermore, as can be seen, the age group 18-24 is the only age group, which earns way below the average income for Lundby, while the other age groups earns more.

The average income has increased for every age and education groups in Lundby during the investigated time-period. Figure 20 demonstrates that some variation exist within Lundby's seven precincts. As can be seen, certain precincts has a higher average income than others. However, even though it is hard to notice, has Kvillebäcken and Rambergsstaden also experienced an increase, in fact both precincts has experienced an average income increase of 13% and 11% during this time-period, from an average of 180 818 SEK respective 188 767 SEK in 2011 to 205 090 SEK and 209 183 SEK in 2011. Nevertheless, as could be seen, highest average income in 2014 is in Eriksberg and the lowest average income in Kvillebäcken and Rambergsstaden.

![Average Income in Lundby, 2011 and 2014](image)

*Figure 20: Average income for the working age population, 2011 and 2014. (2015 price level). Source: Göteborgs Stad, 2017k*

Lastly, because advocates of densification claim that a denser city would contribute to fewer private vehicles transportation and a broad usage of public transportation, the number of registered vehicles is analyzed as a socioeconomic development aspect. Overall, in Lundby the number of registered vehicles increased from 11655 in 2008 to 14056 registered vehicles in 2015, which show an increase of 21 percentage units. However, when the rapid population
growth in Lundby is taken into consideration, does the data show that the number of vehicles per 100 inhabitants has in fact decreased during the studied time-period, from 30.4 vehicles in 2008 to 28.2 vehicles in 2015. However, as seen in Figure 21, the distribution of vehicle ownership varies within Lundby's seven district. In general, the number of registered vehicles per 100 inhabitants has declined in every precinct. However, some precincts have a higher number of vehicles than others, for instance Kärrdalen contains the highest number with 41.2 vehicles per 100 inhabitants in 2015 while Rambergsstaden had the lowest, 22 vehicles per 100 inhabitants.

Figure 21: Registered private vehicles per 100 inhabitants in Lundby, 2008 and 2015. Source: Göteborgs Stad, 2017

5.4 INTERVIEWS

Following section divulges the information gained through the interviews, and it is structured to follow specific themes: densification, sustainability and obstacles.

As both informants elucidated is Gothenburg, as in every Swedish city, politically ruled, which sets outs political directions. However, as the Architect⁴ argues “you could rank the different factors behind the densification process, depending on ideology, but overall the most fundamental reason behind densification process in Gothenburg is the lack of housing units”. Thereby, stating that the lack of housing units are a fundamental element behind the densification process in Gothenburg. Furthermore, when it comes to densification as a planning ideal, both informants

⁴ Architect, City Planning Authority, 2017-03-16.
express that clearly some benefits as well as shortcomings does exist, and is not clear-cut. Densification could be beneficiary as development could occur within already existing infrastructure and create areas that are more attractive. However, on the other hand it could also produce strains on natural areas. Densification strategies is playing a bigger role in the planning due to the political ambition of sustainable development and avoiding an urban sprawl, especially repeating “miljonprogrammet” (Million Dwelling Program”, where countless housing units where developed on the outskirts of the metropolitan areas. Which the architect argues makes densification more of an ideological than scientifically ground motive, which is no fault in itself, After all, as both informants express there is a lack of housing in Gothenburg so more housing units is needed.

As densification is playing a bigger role in the planning field, the lingering questions is where to develop. Lundby contains certain traits, which makes it ideal for a densification. Because as both informants elucidated is Lundby centrally located but also, due to the shipyard industry crises in the 1970s, contains plenty of abandoned spaces as companies relocated or shut down. Thereby, as the architect states “its central location and empty spaces is why Lundby was chosen”. According to both informants is all the sustainability dimensions equally prioritized in the planning process, however contrary to ecological and economic sustainability, which are well regulated and defined, is social sustainability quite flexible in its interpretations. Furthermore, when it comes to Lundby, the development manager elucidates that social sustainability is more prioritized, as the district is somewhat restricted in their scope of actions since it do not own land, which however the city of Gothenburg do. As further stated, Lundby introduced a new regulation in 2011, which asserts that the district should participate in the community planning as well as contribute to a good living environment. Thereby, as the development manager explains, Lundby has expanded its development department, which role is to participate in the planning process and is a consultative body. In other words, they are able to comment on proposal in the detailed plan during the consultative phase or later in the review phase. Nonetheless, as both informants point out, social sustainability is something every organization within Gothenburg should focus on and not only the districts. Although, as expressed by the architect, the flexibility in the interpretation of social sustainability could contribute to it being caught in the middle. Therefore, theoretically the three dimensions of sustainability is equally

5 Development Manager Urban Planning, Lundby District Administration, 2017-03-20
prioritized, but in reality as the ecological aspects are well regulated, that is how to build etc., is the economic a driving force.

That social sustainability is lacking a clear definition and is quite flexible in its interpretation means for Lundby that as of now the 30 different ongoing projects has to be defined separately. As the development manager states “The district is responsible for creating adequate living environment for its future population, therefore the district works a lot on the social sustainability issues and how various plans meets our goals of social sustainability”. A way for the district to meet its goal is as the development manager explains conducting a social consequence analysis, which entails identifying important social aspects, such as schools, that has to be considered in the planning and development. Moreover, through its consultative body, the district can express its opinions and comments on various plans and projects.

The densification in Lundby, as expressed by both informants has certain obstacles. Physical barriers such as Lundbyleden and Hamnbanan present certain obstacles for the development in Lundby. Since the transportation routes is of a national interest, means the state and not Gothenburg owns it, and making alterations that could impede the traffic flow is not allowed. However as both informants express, the overbridging of this obstacle is important for connecting primary precincts with each other, and as of now there are a lot of ideas of achieving it such as building bridges over Lundbyleden or redeveloping Hamnbanan by having it under surfaces and freeing up land for development. Because as of now Eriksberg, which has experienced a substantial development over the years, is physically disconnected by the physical barriers and ultimately socially disconnected. Nonetheless as both informants enlighten will the overbridging of the physical barriers take time.

Both informants further argue that the development in Lundby itself is an obstacle. As development is occurring in a centrally located district and on old industrial land, which must undergo decontamination, inclines to produce costly development. Thereby development as the architect elucidates is occurring on “the worst and most expensive land in Gothenburg”. Furthermore, as expressed by both informants are costly development a problem for achieving social sustainability, as it could increase the social exclusion. Yet, as the architect suggest “even if rental units is built, it would not automatically mean cheap housing, as the district is so central [...] so the rents will not be low either”. Thereby as argued is the central location an essential obstacle. However, both informants has pointed out that Frihamnen is an experimental project
to circumvent costly development, as more rental units with varying price levels are being developed. Contrary to Lundby district, which don't own any land, does Gothenburg, which as in Frihamnen an experimental projects could be partaken for attempting more social mixing in newly developed areas.

Furthermore, the architect debates that with social sustainability being flexible in its interpretation presents certain obstacles as well. As the city of Gothenburg is celebrating 400 years, in 2021, is multiple development projects planned to be completed by then. Karlavagnsplatsen a project, where more than 1500 new housing units is planned to be constructed, to some extent has experienced shortsighted planning. Thereby soft social traits such as school and parks were neglected and has to be rectified gradually in other precincts. However, as clarified by the development manager in Lundby, the political administration has advised against the plans, and new plans for including soft traits was developed. Consequently, the planning authority has reversed the process, by surveying the space and assessing whether the number of housing units could sustain the social aspects. Therefore, the flexibility of social sustainability produces certain obstacles.

Nevertheless, that any development is overall occurring as both informants express is positive. As there is, a lack of housing in Gothenburg so more housing units is needed. Although as both informants contend the development in Lundby so far has contributed to socially resilient groups moving into newly developed areas. Which Eriksberg is a good example of, as the average income increased substantially and is now one of top 15 richest areas in Gothenburg. Therefore, as the development manager expressed it is important to connect old areas with the newly developed areas to create good living environment.
6 DISCUSSION

That Lundby district experienced a densification during the investigated time-period is evident, as the increased housing construction has facilitated a repopulation of more than 11 000 inhabitants. More importantly, as an important objective of the abovementioned densification strategies centers around increasing the building and population density in means of counteracting the earlier mentioned consequences of urban sprawl, has the densification in Lundby succeeded. After all, during the studied time-period the population density in Lundby increased by 30%, which as advocates of densification strategies argue could contribute not only to better sharing of certain resources such as public transportation but also contribute to shorter transportation distances as more people live closer to the city centers (Boyko and Cooper, 2011; Haughton and Hunter, 2004). Furthermore, both informants argued that Lundby contains a vast amount of abandoned spaces mainly due to the shipyard industry crises in 1970s, which shows that by utilizing a densification strategy is repopulating and rejuvenating an inner city district possible. Because the densification process facilitated an increasing amount of new inhabitants in Lundby during the studied time-period, which also contributes to an increased customer basis and ultimately makes to services and amenities being economically viable. Densification strategies thereby as argued contributes to addressing the de-investments and inner city decline in Lundby (Burchell et al., 2000).

However, the notion that by increasing the population density could the likelihood of social mixing and diversity increase sounds great theoretically but in reality, it is doubtful. In one hand, the densification of Lundby had indeed contributed to an increased population density, which advocates of various densification strategies argued is important for achieving better social mixing (Frey, 1999; Haughton and Hunter, 2004). But on the other hand, the changes in educational status, where the tertiary educated increased by 9% and constitutes about 47% of the working age population, and changes in the age structures even though they were quite minuscule indicates that social mixing not being the case. Instead, these changes in combination with increasing average income suggest in fact some form of intensification of socially resilient groups rather than social mixing. Which, sort of fits perfectly with Campbell and Fainstein (2003) statement that increased population density would lead to increased diversity is highly dubious, because these densification strategies do not actually specify how diversity and social equity would occur, aside from increasing the population density.
Furthermore, that social sustainability is quite multifaceted and the densification strategies lacking clear specification of how diversity and social mixing could occur is not certainly helpful for the densification process in Lundby. Because as explained by both informants is, social sustainability theoretically prioritized but in reality as a clear definition do not exist is the economic a driving force. In that sense, the densification process in Lundby point towards a planner’s dilemma, as both the economic and ecological sustainability is well defined and regulated contributes to them being the driving force while social sustainability being derelict. In Lundby’s case, the prevailing housing tenure developed showed to be condominiums, constituted more than 60% of the constructed housing units, indicate that the economic aspect is more prioritized. Which demonstrates that as Campbell and Fainstein (2003) argued relying on the market to provide diversity and social mix could be problematic. As both informants stated is Lundby centrally located and contains arguably the worst and most expensive land in Gothenburg, therefore it is of utmost importance to balance the development between private and public development. Otherwise, the costly development in Lundby could hinder the attempt of obtaining social sustainability or social mixing. So in overall the lack of social sustainability definition and description of how diversity could be obtain is contributing to the changes seen in the educational status, average income, minuscule changes in age structure, which indicate some form of gentrification, contrarily to social inclusion and social equity is occurring in Lundby.

An interesting claim from critics against various densification strategies concerns the focus of development in inner city district and the minimizing of development on the least expensive lands which would contribute to increasing property values (Downs and Costa, 2005; Jenks et al., 2005). In some sense, as critics argued the property values during the investigated time-period had increased by 18% in Lundby. However, in reality, comparing the property values with Majorna-Linné, which contrarily to Lundby’s 48% had only experienced 3% of the overall housing constructing in Gothenburg, showed that in fact the median purchase price had increased more in Majorna-Linné than in Lundby. Thereby, showing that the property values is increasing regardless of the degree of densification. However, it is my view that increasing property values seen in Lundby is not contributing to a better social mix or social equity; instead contributing to social polarization and social exclusion between socially resilient groups and the socially vulnerable. Because as more condominiums is being developed than rental units in Lundby means that for people to move to Lundby they had to spend an median of 2.7 million SEK
in 2015 for a property. Which of course it is not easy for the socially vulnerable. Furthermore, as Campbell and Fainstein (2003) noted it is important to balance the development between private and public development in order of obtaining a better social mix and to provide the opportunity of diversity. In that sense, the experimental development in Frihamnen is quite welcomed and exceptional because it tries to circumvent the costly development and tries to introduce more rental units with varying price levels in order to obtain a better social mixing in newly developed areas.

6.1 SWOT-ANALYSIS

Following section, as mentioned the methods section make use of an SWOT-analysis as an overbridging interpretation framework for assessing what strengths, weaknesses, opportunities and threats could be observed of the densification process in Lundby.

6.1.1 Strengths

Certain strengths of the densification process is detectable in Lundby. Firstly, as the city of Gothenburg plans and aims for increasing their population with an additional 150 000 by 2035, does an increased population require more housing units to be developed (Göteborgs Stad, 2009). The densification process in Lundby thereby present itself as a solution for accommodating future population, as more than 6300 new housing units has been constructed during this time-period, and more is to come in the near future (Göteborgs Stad, 2017f).

Secondly, as Lundby contained vast amount of abandoned spaces could the development within already built up areas contribute to an repopulation and rejuvenation of inner city districts (Burchell et al., 2000). Which the densification of Lundby shows has occurred, as the housing construction in Lundby has facilitated a population growth of more than 11 000 inhabitants during this time-period (Göteborgs Stad, 2017h). Furthermore, as of 2015 had the average income in Lundby increased by 22%, which further supports the notion of repopulation and rejuvenation could occur through densification strategies (Atkinson and Bridge, 2005; Burchell et al., 2000). Thereupon the repopulation and rejuvenation of Lundby presents itself as beneficiary, for the city of Gothenburg because it could increase the local revenues (Atkinson and Bridge, 2005).

Thirdly, the aforementioned population growth has contributed to Lundby population density increasing by 30% over time, which is an objective for procuring sustainability, since more people being concentrated in high density areas increases the likelihood of social mixing but also
reduces transportation distanced (Boyko and Cooper, 2011; Frey, 1999; Haughton and Hunter, 2004; Göteborgs Stad, 2017g).

6.1.2 Weaknesses

However, the development in Lundby contains several obstacles for achieving sustainability. As seen in Figure 6 had the favored tenure developed during this time-period been condominiums, which it not an issue by itself. However, considering that the property values in Lundby has increased by 18% during the studied time-period, further supports the notions that refocusing on urban areas and limiting the development on undeveloped land contributed to an increasing property values. Therefore, as Burton (2000) argued does the reliance on private developers to provide diversity not work, as an increasing property value and condominiums being the favored tenure constructed could thereby contribute to social polarization and social exclusion between socially resilient groups and the socially vulnerable (Frey, 1999).

The densification process in Lundby further demonstrates obstacles to the objective of being environmentally sustainable. Because as advocates of densification claim is densification environmentally sustainable since it reduces the development on farmland and open spaces. However, just as elucidated by (Downs and Costa, 2005; Jenks et al., 2005) the densification process in Lundby has contributed to loss of green areas, especially recreation areas. Figures 9 and 11 clearly shows that the densification process in Lundby brought about the development on recreation areas. Which ultimately, is impeding the objective of being environmentally friendly.

6.1.3 Opportunities

Nevertheless, the densification process has brought about an increase share of foreign-born inhabitants in Lundby, which provides the district the opportunity of procuring diversity. Therefore, the increase of foreign born in Lundby, helps the city of Gothenburg and advocates of densification to reach their objective of diversity, social mix and integration. Furthermore, during the investigated time-period has the number of vehicles per 100 inhabitants declined substantially in Lundby. Clearly indicating that, as Downs and Costa (2005) stated, by developing high-residential development could private transportation usage be reduces, as it encourages walking, biking and the usage of public transportation. The decline in number of vehicles per 100 inhabitants shows that the densification in Lundby is to some extent environmentally friendly.
The housing experiment, which both informants pointed out, further presents opportunities. As explained is the City of Gothenburg experimenting with the construction of more rental units with varying price levels in Frihamnen. Because as stated by both informants, there is no easy way of building cheaper units, but this project is an appropriate experiment for attempting to achieve a higher social mixing in newly developed areas. Thus, the experiment presents opportunities, which could increase the social mixing.

6.1.4 Threats

The claim that through densification could diversity and social mixing be achieved is flawed, as seen in Lundby the densification process has brought about changes in population structure and socioeconomic characteristics, which suggest a gentrification is occurring. After all, the share of highly educated has increased, while at the same time the elderly age group had declined, which indicates an influx of affluent inhabitants (Thörn and Holgersson, 2014). Thereby supporting Burton (2000) notions that there are no verification of social equity occurring through densification. Furthermore, the development in Lundby, which as explained could arguably be on Gothenburg worst land, as it contains vast amount of drained land as well as decontaminated land due to the industrial usage, highlights that private developers could not be relied upon for providing diversity as suggested by advocates of densification (Burton, 2000). Because as seen in Lundby the favored form of tenure constructed during this time-period has been condominiums, which further contributes to the gentrification process and social exclusion instead of inclusion.

However, during this study, it became quite apparent that a major source and threat to the densification process in Lundby is the vagueness of social sustainability, which is an essential objective for various densification strategies. In contrast to economic and environmental sustainability, is social sustainability neither regulated nor defined. Consequently, as various densification strategies, as Burton (2000) enlightened, don’t specify how this could be achieved contributes to social sustainability being a rather messy concept. Thereby as explained by both informants every development project in Lundby has to be defined separately, and eventually could end up with different results or as the architect at City Planning Authority stated, contribute to shortsighted development.
Lastly, as clarified by both informants, the important transportation routes, such as Hamnbanan and Lundbyleden, are of natural interest. Which is a threat for procuring sustainability, as it composes physical barriers and disconnects the newly developed areas with the older areas.

<table>
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<tr>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td>• Repopulation of Lundby</td>
<td>• Uneven development</td>
</tr>
<tr>
<td>• Rejuvenation</td>
<td>• Loss of recreation areas</td>
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<td></td>
<td>• Increasing property values</td>
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<tr>
<th>Opportunities</th>
<th>Threats</th>
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<tr>
<td>• Increase in foreign born</td>
<td>• Uneven development</td>
</tr>
<tr>
<td>• Decrease in number of private vehicles</td>
<td>• Reliance on private developers</td>
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<tr>
<td>• Increase in local revenues</td>
<td>• Social sustainability lacking definition</td>
</tr>
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<td></td>
<td>• Physical barriers</td>
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### 6.2 Limitations and Further Studies

It is important to acknowledge the limitations of this study and the inherent obstacles that arisen during this study. Firstly, due to the limitations and restrictions in gathering suitable data has this study been restricted to making use of descriptive statistics. Because, as the socioeconomic outcomes of the densification has been investigated it would have been much more suitable to do inferential analysis. However, the combination of descriptive statistics and qualitative data has produced, in my books, interesting information. Lastly, the constructed maps visualizing the land use has been constructed by matching the buildings layers from 2016 map with the old 2008 map, and unfortunately certain random errors might exist, as the matching has not been performed by machine and instead by the author.

Nevertheless, further studies of the outcomes of the densification process should be partaken, especially by using Lundby as a reference point and comparing Lundby against another district in Gothenburg, which has not experienced the same degree of development. Because, as could be seen in this study, the outcomes of the densification process in Lundby is not straightforward and clear cut, instead there are certain desirable but also undesirable outcomes. Furthermore, an interesting aspect would be compare the development in Lundby by going further back in time, as the effects take time to occur. In addition, a broader study, which also incorporates more of the economic and environmental aspects, should be partaken, as the densification strategies do not only focus on the residential density or housing construction.
7 Conclusion

It is quite evident that Lundby has experienced a densification process, as the population density increased with 30% during the studied time-period, which of course is an important objective of various densification strategies. However, as critics against aforementioned densification strategies claimed the densification process in Lundby show that social equity and social sustainability does not occur automatically by increasing the population density. Because, the socioeconomic changes that the development in Lundby brought about, rising educational status, increasing income, changes in age structure suggest the intensification of socially resilient groups is occurring ultimately the opposite of social inclusion and social equity.

The densification process in Lundby furthermore show that a rejuvenation and repopulation is possible through the densification strategies, as the massive increase in housing construction facilitated an population increase of more than 11 000 new inhabitants in Lundby. Thereby, that any development is occurring in Lundby is in general quite positive because the district contains a vast amount of abandon spaces but the city of Gothenburg is also aiming for increasing their population. Thus, the densification in Lundby facilitates the opportunity of obtaining more citizens for the city of Gothenburg while also rejuvenating and repopulating an inner city district.

However, certain issues has to be dealt with for the densification process in Lundby to be considered sustainable in every regard, economically, socially and environmentally. Because as some critics against densification strategies warned has densification process in Lundby contributed to development in recreation areas, which of course has not been the political orientation nor is environmentally sustainable.

Therefore, as multiple development is planned to occur in the near future within Lundby, a recommendation would be to retain the private markets development of condominiums as it contributes to Lundby being socially excluding less resilient social groups. Furthermore, the development on green areas within Lundby must be retained as it could lessen the citizen's quality of life.
8 References

8.1 Literature


8.2 STATISTICS


Bostäder-Arbeite-Inkomster-Utbildning/?rxid=a6c524c8-efd9-4659-b352-2956a8c719b1


Appendix 1: 2008 pdf map illustrating one section of Lundby. Source: Göteborg Stad
### Appendix 2: Interview guide Architect at City Planning Authority, Gothenburg

1. How and why is densification proposed and planned to occur in Gothenburg?

2. What problems can arise with an urban densification?
   a. What does this mean for the planning process?

3. Sustainable development is a concept mentioned in the masterplan for Gothenburg. Is social, economic and environmental sustainability equally prioritized?

4. How does the division of roles between the City and the various urban district look?
   a. Who is responsible for what?

5. The comprehensive plan for Gothenburg identifies Lundby as an district which would undergo a densification process. Why Lundby?
   a. How is this planned to occur?

6. How are the different aspects of sustainability issue handled, with the context of Lundby transformation?

7. Can urban densification contribute to socio-economic development of Lundby?

8. In the comprehensive plan it states that segregation shall be converted to integration, how does the densification process of Lundby fit into that ambition?
   a. How is that planned to materialize?
Appendix 3: Interview Guide for Development Manager Urban Planning at Lundby District Administration, Gothenburg

1) Which role has Lundby district Administration had in the development of the comprehensive plan?

2) Lundby is a district undergoing a densification process. What do you think of this process?

3) How are the different aspects of sustainability issue handled, with the context of Lundby transformation?

4) Can a densification process contribute to a socio-economic development in Lundby?

5) In the comprehensive plan it states that segregation shall be converted to integration, how does the densification process of Lundby fit into that ambition?
   a. How is that planned to materialize?

6) Is there something within the comprehensive plan, the district deem missing for Lundby?