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	Project: A broad literature review on driver's licence holding		
Author: Åsa Aretun, VTI and Susanne Nordbakke, TØI	Sponsor: Bisek		
Title: Developments in driver's licence holding among young people. Potential explanations, implications and trends.			
Abstract <p>This literature review examines the factors that influence the development in the driver's licence rate among young people in different age groups, socioeconomic groups and geographical contexts, as well as the impact on the welfare of young people of holding or not holding a driver's licence. The review also includes research on trends, prognoses and evaluations of developments in driver's licence holding, and knowledge on any links between changes in driver licensing and falling car usage among young people.</p> <p>The review shows that several factors appear to explain and influence the driver licensing trend among young people, while, at the same time, there is a great difference in driver's licence holding among different groups. More research is needed to investigate the extent to which the declining driver licensing rates is a general trend and/or opposite trends between different groups of young people, and with different welfare impacts.</p>			
Keywords: driver's licence holding, young people, trends, explanations, welfare			
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<p>Titel: Utvecklingen av körkortsinnahav bland unga. Möjliga förklaringar, konsekvenser och trender.</p>	<p>Dnr: 2013/0650-7.3</p>	
<p>Projektamn: En bred kunskapsöversikt om körkortsinnahav</p> <p>Uppdragsgivare: Bisek</p> <p>Referat</p> <p>Denna litteraturöversikt redogör för kunskapsläget kring vad som förklarar och påverkar utvecklingen av körkortsinnahavet bland unga i olika åldersgrupper, socioekonomiska grupper och geografiska kontexter. Översikten behandlar även kunskapsläget vad gäller förhållandet mellan körkortsinnahav och ungas välfärd, samt mellan minskat körkortsinnahav och minskad bilanvändning bland unga.</p> <p>Som framgår av litteraturgenomgångarna i de olika kapitlen är det flera faktorer som förklarar och påverkar utvecklingen av körkortsinnahavet bland unga samtidigt som det råder stora skillnader i körkortsinnahav mellan olika grupper. I likhet med fenomenet om minskad bilanvändning bland unga finns ett behov av ytterligare forskning som tittar närmare på i vilken utsträckning minskat körkortsinnahav är ett generellt mönster och/eller ett resultat av olika trender bland olika grupper av unga, och med olika välfärdskonsekvenser, samt hur storleken på dessa grupper av unga förändras över tid.</p>		
<p>Nyckelord: Körkortsinnahav, unga, trender, förklaringar, välfärd</p>		
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Foreword

VTI and TØI have been commissioned by Bisek to carry out a literature review of current knowledge on what factors explain and influence driver licensing trends among young people of different ages, different geographical locations and from different socioeconomic backgrounds, as well as the impact on the welfare of young people of holding or not holding a driver's licence. The knowledge review also examines trends for future driver licensing among those who are young today, links between changes in driver's licence holding, car-ownership and use, as well as any disengagement between driver's licence holding and car usage among young people.

Bisek has concluded that current decline in driver licensing rates among young people is an interesting and significant factor in understanding and explaining the future role of the car in a sustainable transport system. Bisek is a partnership set up by Trafikverket in Sweden (the Swedish Road Administration), Statens Vegvesen in Norway (the Norwegian Public Roads Administration), VINNOVA (Sweden's Innovation Agency), Transportstyrelsen (the Swedish Transport Agency), Trafikanalys (Transport Analysis), Motororganisationernas Samarbetskommitté i Sverige (The Cooperation Committee of Motoring Associations in Sweden), MOSK, (OK Bilisterna, Motormännen M, FMK, Kungliga Automobilklubben KAK, and Motorförarnas Helnykterhetsförbund MHF), as well as Norges Automobil-Forbund NAF (the Norwegian Automobile Association) for the purpose of researching the social and financial significance of cars to households and individuals in the modern society.

Åsa Aretun, VTI, has been responsible for chapters one, three, four and five of the report. Susanne Nordbakke, TØI, has been responsible for chapter two. Åsa Aretun has had principal responsibility for the rest of the report.

We would like to thank Joanna Dickinson, VTI who has been responsible for reviewing the report and contributed with many valuable comments. We would also like to thank Henrik Swahn, who has acted as our contact at Bisek.

Linköping, June 2014

Åsa Aretun

Process for quality review

Internal peer review was performed on 28 April 2014 by Joanna Dickinson. Åsa Aretun has made alterations to the final manuscript of the report 28 May 2014. The research director Nils Petter Gregersen examined and approved the report for publication on 12 June 2014. The conclusions and recommendations expressed are the authors' and do not necessarily reflect VTI's opinion as an authority.

Process för kvalitetsgranskning

Intern peer review har genomförts 28 april 2014 av Joanna Dickinson. Åsa Aretun har genomfört justeringar av slutligt rapportmanus 28 maj 2014. Forskningschef Nils Petter Gregersen har därefter granskat och godkänt publikationen för publicering 12 juni 2014. De slutsatser och rekommendationer som uttrycks är författarnas egna och speglar inte nödvändigtvis myndigheten VTI:s uppfattning.

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Developments in driver's licence holding among young people. Potential explanations, implications and trends.

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Summary

This literature review aims to examine factors that influence the development in the driver's licence rate among young people in different age groups, socioeconomic groups and regional contexts. The aim is also to review the research on trends, prognoses and evaluations of future developments in driver's licence holding in these groups. The literature review also covers the international knowledge of what driver's licence holding may mean for young people in different geographical and socioeconomic contexts, with respect to its impact on welfare. International knowledge on any links between changes in driver licensing and falling car usage among young people is another topic covered.

The review suggests that the decline in the driver's licence rate among young people observed in many industrialised countries, can be traced back to several factors: extended youth, increased urbanization among young people, improvements in the public transport supply, poorer financial ability among young people, changes in the population/increase in the immigrant population (lower income group), changes in the driver's licence education/more complicated, changes in access to accompanied driving, changes in perceptions of and interests in the car/driver's licence, and in priorities, increased use of ICT (Information and communications technology). As most knowledge on driver's licence holding among young people stems from bivariate analysis there is a need for multivariate studies on the relative importance of various factors. There is a lack of research that measures both licensing and the hypothesized causes in the same study and we have found no studies that have calculated the effect of the hypothesized causes. In order to make prognoses of future driver's licence trends, there is a need for more country-specific research on the importance of the different factors in explaining the decline in driver's licence holding among young people.

Concerning welfare impacts, the research reviewed shows a clear link between driver's licence holding, access to cars and gainful employment. This particularly relates to young people who do not go on to higher education. A driver's licence acts both as a qualification which makes the holder more employable, and also facilitates (formally) the use of a car in applying for work and remaining employed. Research indicates that the labour market for young people has changed in a way which has increased this group's dependence on driver's licences and access to cars in applying for jobs and remaining employed. One exposed group is young people from households without the financial resources to allow them to obtain a driver's licence and use a car. They live in geographical locations (suburban, peri-urban and rural areas) with limited local job opportunities and limited public transport services to a geographically larger labour market.

A small number of studies has been identified which have looked in some detail at links between falling levels of driver licensing and car usage among young people. Findings

from these studies indicate that driver licensing, like car ownership/car usage, appears to be declining among young people on low incomes, and among young people living in urban areas with high density, land use mix and access to good public transport services. More studies are, however, necessary to confirm this pattern.

On the basis of current research results and level of knowledge, it is difficult to reach any conclusions regarding how the current trends of declining licensing rates, car ownership and car usage among young people will develop in the long term. The research does, however, suggest that changing urban land use and transport infrastructure planning, which reduce car reliance for all groups of young people, may result in these trends continuing and possibly becoming stronger, even if the economy picks up and youth unemployment falls.

Utvecklingen av körkortsinnehav bland unga. Möjliga förklaringar, konsekvenser och trender.

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Sammanfattning

Denna kunskapsöversikt syftar till att undersöka vad som påverkar utvecklingen i körkortsinnehav bland unga i olika åldersgrupper, socioekonomiska grupper och regionala kontexter. Trender, prognoser och bedömningar om framtida utveckling av körkortsinnehav i dessa grupper utforskas också. I kunskapsöversikten undersöks även det internationella kunskapsläget kring vilken påverkan på välfärd ett körkort har för olika grupper av ungdomar samt eventuella kopplingar mellan minskat körkortsinnehav och minskad bilanvändning bland unga.

Genomgången av litteraturen visar att det är många faktorer som påverkar den nedgång i körkortstagande bland unga som har observerats i många industrialiserade länder. Dessa är: längre ungdomsperiod, ökad urbanisering, förbättringar i utbud av kollektivtrafik, sämre ekonomi, populationsförändringar/ fler med utländsk bakgrund (lägre inkomstgrupp), förändringar i körkortsutbildningen/svårare utbildning, minskad tillgång till handledare för övningskörning, ökad användning av IKT (informations- och kommunikationsteknologi), samt förändringar i föreställningar om och intresse för bil. De flesta studier är bivariata och det finns ett behov av fler multivariata studier för att ta reda på vilken relativ betydelse olika faktorer har. Det saknas även forskning som både mäter körkortsinnehav och hypotetiska orsaker i samma studie. Studier som beräknar effekter av hypotetiska orsaker har inte gått att finna. För att kunna göra prognoser av framtida trender kring körkortsinnehav, behövs fler nationella studier om vilken betydelse de olika orsakerna har.

När det gäller välfärd så visar de studier som har gått igenom på tydliga samband mellan körkortsinnehav, tillgång till bil och förvärvsarbete. Resultaten rör unga som inte går vidare till högre utbildning. Körkortsinnehav fungerar både som en kvalifikation som ökar anställningsbarheten, samt möjliggör (formellt) användandet av bil för att söka, få och upprätthålla ett arbete. Forskningen pekar på att arbetsmarknaden för dessa unga har förändrats på sätt som gör dem mer beroende av körkort och tillgång till bil för att kunna söka och upprätthålla ett arbete. Utsatta grupper av unga tillhör hushåll där det saknas ekonomiska resurser för att de ska kunna ta körkort och använda bil. De bor i geografiska kontexter (sub- och peri-urbana områden, småorter och landsbygd), med begränsade arbetstillfällen lokalt, och med begränsad kollektivtrafikförsörjning till en geografiskt större arbetsmarknad.

Idag finns endast ett fåtal studier som har utforskat kopplingar mellan minskat körkortsinnehav och minskad bilanvändning bland unga. Dessa visar att körkortsinnehav, i likhet med bilanvändning, minskar bland unga med lägre inkomster, och bland unga som bor i stadsområden med hög densitet, funktionsblandning och gott kollektivtrafikutbud. Fler studier behövs dock för att belägga dessa mönster.

Sammantaget visar översikten att det är svårt att på basis av nuvarande forskningsresultat och kunskapsläge dra några slutsatser kring hur pågående trender

kring minskat körkortsinnehav och bilanvändning bland unga kommer att utvecklas på längre sikt. Forskningen pekar dock på att förändrad markanvändning och transportinfrastruktur som minskar bilberoendet, kan leda till att dessa trender håller i sig, och kanske också förstärks, även om ungas ekonomi förbättras.

1 Introduction

There is established evidence of a decline in driver licensing rates among young people in average, in many industrialised countries. This phenomenon is receiving increasing attention in research into the parallel and age related trends of stagnating and/or declining car use and ownership. Within this research there is an ongoing discussion on the driving forces behind these trends, and whether they are a general dynamic pattern and/or if it is the result of opposite trends between different socio-economic and socio-demographic groups or residential locations (Grimal et al., 2013).

The discussion is linked to the relatively large difference in driver licensing between different groups of young people seen in many countries. These differences include for example the age of young people, gender, education, socioeconomic background, foreign links and geographical location; in addition, differences are often due to a combination of these factors. In Sweden, around 70% of young people aged 20-29 hold driver's licences, but only around 35% of these with only compulsory education. 80% of women with post-upper secondary high school education and who were born in Sweden hold driver's licences, while the figure for women with the same level of education but who were born abroad is around 35% (Karlsson, 2012). Difference in driver licensing between different groups of young people is a central theme in this review.

Another theme is what the consequences of holding or not holding a licence are for the welfare of young people. By welfare, we mean the opportunity for young people to achieve a good living standard and to control their own lives in a number of different areas, such as education, work, participation in leisure activities, social networking etc. In this context, too, the differences between young people represent an important starting point. How significant are low levels of driver licensing at an early age to young people who leave school after completing their compulsory education or upper secondary school education and start looking for work compared with those who go on to higher education? How significant are driver's licences (and access to cars) to young people in small towns and rural areas compared with young people in larger towns and cities? By asking these questions, our initial aim is to draw attention to the fact that holding a driver's licence can mean something very different in different contexts and to different groups of young people.

1.1 Aim

The literature review aims to:

- Examine the factors that influence the development in the driver's licence rate among young people in different age groups, in different socioeconomic groups and in different regional contexts. The aim is also to review the research on trends, prognoses and evaluations of future developments in driver's licence holding – in the same groups.
- Examine the international knowledge of what driver's licence holding may mean for young people in different geographical and socioeconomic contexts, and with regard to age, gender, immigrant background and disability, with respect to its impact on welfare.
- Examine the international knowledge on any links between changes in driver licensing and falling car usage among young people.

1.2 Outline of report

Chapter 2 contains a review of the literature covering issues which explain/influence driver licensing among young people in different age and socio-economic groups, as well as in different geographical areas. The review also looks at trends and forecasts. Chapter 3 examines the level of international knowledge with respect to the impact of driver's licence holding on welfare among different groups of young people, focusing primarily on the opportunity for young people to apply for jobs, find work and remain employed. Chapter 4 looks at the state of international knowledge on any links/interplay between changes in driver licensing, car ownership and use among young people. The report ends with a concluding discussion aimed at identifying the need for continuing research.

2 Developments in driver's licence rates – potential explanations

2.1 Introduction

Is the love affair with the car ending? Several scholars have in the last few years talked about the “peak car”, with reference to the stagnation and even a decrease in car use in the 1990s in several countries, such as the UK, France, Germany and the USA (see e.g. Goodwin & Dander, 2013; Kuhnimhof et al., 2013; Metz, 2013). In Norway, stagnation in car travels is observed from the late 1990 (TØI- Fact sheet, 2013). In Sweden, the kilometres travelled per car have decreased since 2008, even if car fleet is growing (Trafikanalys, 2014).

At the same time, the driver licence rate among young people is decreasing in several western countries (Delbosc & Currie, 2013a; Sivak & Schoettle, 2012). These two trends might signify that the role of car in people's lives has changed in the last couple of decades.

The primary objective of this chapter is to understand the factors that influence the development in the driver's licence rate among young people in different age groups, in different socioeconomic groups and in different regional contexts. The second objective is to review the research on trends, prognoses and evaluations of future developments in driver's licence holding – in the same groups.

In order to attain these objectives the chapter responds to the following research question:

- How can the choice to get a driver's licence be explained?
- What is the status of knowledge of factors that influence the choice to get a driver's licence or not?
- What trends can be identified among different age groups, socioeconomic groups and in different regional contexts?
- How can the different trends be explained?
- What prognoses and evaluations have been made in the international literature on the development in the driver's licence rate in different age groups, socioeconomic groups and in different regional contexts?

2.1.1 Limitation of study focus

This review is limited to young people as this group is the most interesting age-group in order to understand future trends in driver's licence holding and car use. This is also reflected in the literature on the development in the driver's licence holding which mostly focuses on young people. In this review, young people are understood as persons aged between 18 and 34.¹

2.2 Data and method

The studies reviewed in this chapter have been identified using the authors' prior knowledge, references in articles and reports, and search in several databases; Google Scholar, ISI web base and the VTI and TØI libraries. In the search a combination of the

¹ Many of the studies treating young people, driver's licence holding and the decline in licence holding among young people have used an upper age limit of 34 years.

following search terms were used: driving licence, driver's licence, driver licence, rate, development, statistics, socioeconomic, young, immigrant, trends, and prognoses. The studies have been systematized and analysed according to the given research questions above.

2.3 Theoretical approach

In order to understand changes in driver's licence rate, we first have to understand the mechanisms that explain the choice to obtain a driver's licence or not. In this chapter we will apply a classical understanding of action, as proposed by Jon Elster (1989) to understand these mechanisms. To put it simply, Elster perceives action is the result of the choices made – according to an individual's desires – within a given set of opportunities for action. In the context of getting a driver's licence or not, the following questions have to be posed: What influences people's desire to get a driver's licence and how can the opportunities to get one be understood?

In a qualitative study among young people aged 18.5 years, Andersson and Warmark (1999) applied a grounded approach to identify categories of factors that influence the likelihood of getting a driver's licence among young people. Three categories were identified in this study:

- (1) *Perceptions* (“värderingar” senere brukt “values”, (see Berg, Andersson and Warmark, 2001) of the car and the driver's licence, of holding a driver's licence and being able to drive a car. These perceptions are found to be influenced by social norms (e.g. parental norms regarding their child holding a driver's licence) and an individual's values and attitudes (such as the prestige/status attached to holding a driver's licence, the value of the freedom a car might give and/or environmental concerns).
- (2) The *need* for a driver's licence and a car; Andersson and Warmark (1999) suggest that the need for the car varies with travel patterns, transport options and interests (e.g. interest in motor vehicles, motivation)
- (3) *An individual's resources* for getting a driver's licence, such as available time (how much time an individual has for driver's licence education depends, among other things, on how much time spent on work, studies and other interests), financial ability (e.g. parents' financial ability, individual financial ability), access to driving lessons and perceived individual ability (e.g. self-confidence).

Inspired by this categorization of factors we will apply the following definitions to the three categories to understand the choice to get a driver's licence:

- 1) *Perceptions* of the driver's licence/the car and *interests* in general (it is assumed that perceptions and interests are influenced by social norms and by individual values and attitudes).
- 2) *The need* for a driver's licence is assumed to be related both to an individual's activity and travel patterns (often summarized as a lifestyle), and to their transport options/residential location.
- 3) *Individual opportunities* for getting a driver's licence will be understood as the interplay between an individual's resources and abilities and their beliefs about the opportunities and constraints given in contextual conditions for action. It is well established in the literature on travel behaviour (Chapin, 1974; Hägerstrand,

1970), sociology (Elster, 1989) and welfare research (Sen, 1989) that an individual's opportunities depend on the interplay between individual resources and the contextual conditions a person is situated in. For example, there is no use being financially well off if one gets sick in the desert and there are no hospitals around or any transport options. Contextual conditions influencing an individual's opportunity to get a driver's licence are for example access to a driver's licence school, costs of acquiring a driver's license, time requirement for going through a driver's licence education, and access to someone to do rehearsal driving with.

These three categories – together with Elster's approach to action – will be applied to understand the choice to get a driver's licence in this chapter. In the following section, the choice to get a driver's licence or not will be understood as a result of two filtering processes. The first filter is whether a person has a desire or not to get a driver's licence. It is assumed that both an individual's *needs* for a driver's licence/car and their *perceptions and interests* in getting a driver's licence influence a young adult's desire to get a driving license. If an individual desires a driver's licence, the next filter is the opportunity set, which defines which actions are possible. It is likely that it is the second filtering process that creates inequalities as to whether young people get a driver's licence and that this inequality is related to differences in individual resources, such as financial ability of both the individual themselves and that of their parents. Moreover, an individual's opportunity to get a driver's licence might even be smaller for a young person who has both poor financial ability and lives in an area (e.g. a rural area or a suburb with poor connectivity to central areas) where the need for a driver's licence is a prerequisite for e.g. being able to participate in important welfare arenas, such as education and work.

In order to explain trends in driver's licence holding among young people, we have to identify changes at societal level that can influence their *perceptions and interests*, *needs* and *individual opportunities* to get a driver's licence. At a superior level, one can make a distinction between two different kinds of explanations: structural and cultural. While structural explanations seek to explain changes in human behaviour with references to changes in external conditions (e.g. changes in the economic situation of a country, changes in driver's licence education, changes in the price of acquiring a driving license, changes in fuel prices), cultural explanations seek to explain such changes with reference to changes in people's motives for an action (needs and desires) as a result of changes in values and attitudes, interests and general lifestyles.

2.4 The driver's licence in different groups – observed trends

The decline in the driver's licence rate among young people was first recognized in Sweden (Krantz, 1999) and Norway (Nordbakke, 2002), where the licensing rate among young people dropped by more than 10% between the late 1980s and the late 1990s. A decline in young people's driver's licence holding was also recognized in the UK in 2005 (Noble, 2005). It was not until around 2010 that the decline in the driver's licence rate among young people came to worldwide attention, when this trend was recognized in several other western countries.

Based on the observed decline in driver's licences among young people from 1983 to 2008 in the US, Michael Sivak and Brandon Schoettle started to collect data on the development in the driver's licence rate in different age groups from several countries. They succeeded in getting this information from 14 other countries (Sivak & Schoettle,

2012) and based on this data they explored whether the trend observed in the US was present in other countries. The result of this analysis shows that there are two patterns of change over time: (1) in eight countries there was a decrease in the percentage of young people holding a driver's licence while there was an increase in the percentage of older people holding a driver's licence; (2) in seven countries there was an increase in the driver's licence rate in all age groups. Table 1 gives an overview of which pattern is observed in a specific country in the last decades. The observed years vary from country to country.

Table 1 Trends observed in 15 countries (Sivak & Schoettle, 2013) in the last decade, last two decades or the last three decades.

Decrease in driver's licence among young people and increase in driver's licence rate among old people	Increase in driver's licence in all age groups
USA	Finland
Sweden	Israel
Norway	The Netherlands
Great Britain	Switzerland
Canada	Spain
Japan	Latvia
South Korea	Poland
Germany	

One explanation for the increase in the driver's licence rate among older people is that more women hold a driver's licence than previous generations, in both Europe and in the other western countries. Even though there is still a gender gap in terms of driving licensure, the gap is constantly being reduced as younger women hold a driver's licence (Hjorthol et al., 2010; Rosenbloom, 2000).

Why there is an increase in the driver's licence rate in all age groups in some countries has barely been discussed in the literature, perhaps due to the novelty of this knowledge. However, as noted by Delbosc and Currie (2013a) the increase in driver's licence holding has generally occurred in countries where generally licensing rates were at the lower end of the scale (compared to those countries that have experienced an decrease in the driver's licence rate). In addition, Delbosc and Currie (2013a) note that, in each of the countries with an observed increase, only two survey years of data are available and in some cases they are 20 years apart. Delbosc and Currie suggest that with the lack of the information between the two survey points, there might be a chance that the driver's licence rate peaked in the 1990s as in many other countries and that it has begun to decline, but not to levels below those in the 1980s.

Table 2 Trends in driver licensing of young people in nine developed countries (Delbosc & Currie, 2013a).

Location	Years	Age group (years)	Licensing change (%)	Change per year (%)	Source
Victoria, Australia	2000/01-2010/11	18-23	75-65	-1,0	Delbosc and Currie (2013a)
		24-30	93-84	-0,9	
NSW, Australia	1998-2009	25	84-74	-0,9	Raimond and Milthorpe (2010)
USA	1983-2010	18	80-61	-0,7	Sivak and Schoettle (2012b)
		19	87-70	-0,6	
		20-24	92-81	-0,4	
		25-29	96-87	-0,3	
	1995-2010	<20	63-45*	-1,2	Kuhnimhof et al (2012a)
		20-29	91-82	-0,6	
Norway	1991-2009	18	58-40	-1,0	Sivak and Schoettle (2012b)
		19	74-56	-1,0	
		20-24	85-68	-0,9	
		25-34	89-76	-0,7	
	1998-2009	18-24	73-72*	-0,1	Kuhnimhof et al (2012a)
		25-34	94-89*	-0,5	
Sweden	1983-2008	18	50-28	-0,9	Sivak and Schoettle (2012b)
		19	70-49	-0,8	
		20-24	78-64	-0,6	
		25-29	83-71	-0,5	
Great Britain	1995/97-2008	17-20	43-36	-0,5	Sivak and Schoettle (2012b)
		21-29	74-64	-0,8	
	1995/97-2009	17-20	44-35*	-0,7	Kuhnimhof et al (2012a)
		21-29	73-64*	-0,7	
Japan	2001-2009	16-19	19-17	-0,3	Sivak and Schoettle (2012b)
		20-24	79-76	-0,4	
		25-29	90-90	-0,0	
	1995-2010	16-19	29-23*	-0,4	Kuhnimhof et al (2012a)
		20-29	85-83*	-0,1	
Germany	2002-2008	18-24	85-84	-0,2	Sivak and Schoettle (2012b)
	2002-2008	18-29	97-96*	-0,2	Kuhnimhof et al (2012a)
France	1994-2008	20-29	80-79*	-0,1	Kuhnimhof et al (2012a)
Canada	1983-2008	16-19	61-60	-0,1	Sivak and Schoettle (2012b)
		20-24	83-82	-0,1	
		25-34	92-87	-0,5	

* Percentages are taken from graphs and should be taken as approximate

In a more recent paper by Delbosc and Currie (2013a), an overview is given of the changes in the licensing rate among young people in each country that has experienced a decline and the years of observation (see Table 2). In addition to the countries explored by Sivak and Schoettle, Delbosc and Currie (2013a), in their review, also include findings from Australia, France and Germany (see Table 2). In Germany and France, the driver's licence rate among young people has remained more or less stable during the observed period, although a minor decrease has been observed (2002-2008 and 1994-2008, respectively).

The early studies in Sweden and Norway (Krantz, 1999; and Nordbakke, 2002, respectively) also showed that the decline in the driver's licence rate among young people during the 1990s was larger in the bigger cities and counties with bigger cities than in more rural areas and counties without larger cities, but both studies show a clear reduction in all counties. Both studies show that while the decline was largest among 18 and 19 year-old young persons, there was also a decline among the "older" young people (20-24 years old) during the 1990s. Krantz (1999) also found that the decline in the driver's licence rate was different among young people according to their employment/student status; while the driver's licence rate declined only marginally among young people (18-24 year-old) who were employed during the 1990s, the decline in the driver's licence rate among young people (18-24 years old) who were students was large – it fell from 50% in 1989 to 35% in 1998.

Moreover, a decline was observed for both young men and young women in both countries. An analysis based on the national travel survey in Sweden (Vilhelmson, 2004) shows that while 79.1% of men aged 18-24 held a driver's licence in 1978, the proportion of the same group was 56.8% in 2001. For young women aged 18-24 years the proportion holding a driver's licence in 1978 was 57.9% while it was 50.3% in 2001. In Norway, the decrease (measured in per cent, not percentage points) in the driver's licence holding was more or less the same for young men and young women aged 18-24 years old during the 1990s (Nordbakke, 2002).

We have not been able to identify any studies on future prognoses and evaluations of future trends on the driver's license development among young people. However, in Sweden, a model is constructed that can be used make prognoses about the driver's license rate among young people in Sweden (Cedersund & Henriksson 2006). In this model, the cost of acquiring a driver's license and the share of young people with a higher education (above college education) is used as explanatory variables for the licensing rate within a given age group. The model proves to be good in explaining the historical driver's license rate in Sweden. Based on this model, Cedersund and Henriksson (2006), calculate the driver's license rate among young people aged 18-24 years old (a calculation is done for each year of birth in this age group) in 2009 to 2015 within nine different future scenarios. The scenarios are built up from three different future scenarios for the cost of acquiring a driving license rate (no change, small change, large change) and from three scenarios of future share of 24 years old holding a higher education (no change, small change, large change). The model seems useful to make predictions about future driving license rate among young people in Sweden, although as pointed out by the authors themselves, future prognoses needs to take account of ethical background as well, especially if prognoses are to be made for different regions. However, the model does not increase our understanding of why there has been a decline in the driving license rate among young adults. From the model, one can easily draw the conclusion that the decline in Sweden relates to economic aspects (more students, lesser financial ability, together with increased costs for acquiring a

driver's license); the model cannot rule out whether the decline also relate to reduced needs for a driving license (e.g. due to urbanization) and/or to decline in the preference of and interest for the driver's license/car. Moreover, there is a need for more research on whether the model also applies for other countries.

2.5 Getting a driver's licence at a young age – current status

In order to increase our understanding of why young people hold a driver's license or not, this section describes the results from two different reviews: 1) a review of cross-sectional studies on the association between objective characteristics of a young person and driver's licence holding, and 2) a review of studies on subjective reasons for not holding a driver's licence.

2.5.1 Who among young people are more likely to hold a driver's licence?

Young women are less likely than young men to hold a driver's licence in two countries; in Sweden (Cedersund & Henriksson, 2006; Forward et al., 2010) and in Norway (Hjorthol, 2012; Nordbakke & Ruud, 2006). The likelihood of holding a driver's licence also increases with age (Cedersund & Henriksson, 2006; Forward et al., 2010; Nordbakke & Ruud, 2006).

The costs related to getting a driver's licence and learning how to drive are high in many countries. Hence, having driving lessons often requires some financial ability, either personally or within the family. Moreover, getting a car, and not least maintaining it (fuel, road taxes, insurance), requires a certain degree of financial ability. Research has shown that whether a person holds a driver's licence varies according to their income, also when controlling for other factors (Delbosc & Currie, 2012a; Licaj et al., 2012). Other indicators of financial ability are educational level (as those who have higher education are likely to have higher incomes) and employment status; several studies have shown that driver's licence holding among young people varies with these indicators:

- In an analysis of the annual national travel survey (1994/95/96) in Sweden, Krantz (1999) found that young people aged 18-24 years who were full-time or part-time employed were more likely to hold a driver's licence than those who were not employed. Krantz (1999) found that students are less likely to hold a driver's licence than those who are unemployed.
- In a more recent analysis based on national statistics on young people aged 20-29 years from Sweden suggests that young people who have primary and secondary education are less likely to hold a driver's licence than those who have higher education – 35% versus 70% (Karlsson, 2012).²
- Similar results can be found in a study among 200 young people aged 17-25 in Melbourne (Delbosc & Currie, 2012a) and in a study among people aged 17-20 years living in the UK (Noble, 2005).

The study by Delbosc and Currie (2012a) also suggests that those who live alone or are living with roommates are less likely to hold a driver's licence than those who live with their parents or a spouse/partner. One can expect that those who are living with parents often will have greater access to a car in the household and/or a lower level of living costs. Living with a spouse/partner will increase the financial strength of a person, both as a consequence of shared living costs and shared costs related to maintaining a car in

² The numbers are read out from a figure and might not be 100% per cent accurate.

the household. The Australian study also shows that holding a driver's licence varies with the extent to which a person lives in a household with a car or not, where the former is more likely to hold a driver's licence (Delbosc & Currie, 2012a).

Immigrants (defined as a person with two parents born abroad), especially those who come from the less developed parts of the world, are often reported to have a lower degree of personal income (see e.g. SSB, 2013a; SCB, 2007). In 2005, the economic standard (defined as the adjusted personal income) of people born in non-western countries was 25% lower than that of people born in Sweden (SCB, 2007). An analysis based on the national household survey in Sweden shows that young people who are born in Sweden are more likely to hold a driver's licence than those who are born abroad (Karlsson, 2012). This might indicate that there are differences between people born in Sweden and those born abroad in terms of financial ability for both getting a driver's licence and for having a car in the household.

The study from Melbourne by Delbosc and Currie (2012a) also suggests that young people with children are more likely to have a car than those without children, which might indicate a greater *need* for a car when having children.

Research from both Sweden and Norway shows that young people who live in less densely populated counties are more likely to hold a driver's licence than those who live in more densely populated counties (Krantz, 1999; Nordbakke, 2002).³ For example, in the county of Stockholm the driver's licence rate among 18 year-old young persons was 10% but it was 42% in the county of Norrbotten in 1996/97 (Krantz, 1999: 95). This indicates that there is a lesser need for a driver's licence in more densely populated areas/cities where public transport supply is better and the distances are shorter.

Only a few studies have estimated the effect of socioeconomic status, life stage factors and residential location on driver's licence holding when other factors are controlled for. In a multivariate analysis based on the national travel survey in Australia, Delbosc and Currie (2012a) found that living with parents and having children do not have significant impacts on driver's licence holding among 18-23 year-old young persons, when controlling for age, gender, education, employment status, cars in the household, living with parents, having children and year of the study. Rather, this study suggests that having a car in the household, gender, age and employment are more important for holding a driver's licence among 18-23 year-olds (Delbosc & Currie, 2012a). However, the same study suggests that living with parents has a negative effect on driver's licence holding, while having children have a positive effect on driver's licence holding among people aged 24-30, when all other factors are controlled for (Delbosc & Currie, 2012a).

In a study based on national household transportation in the USA, McDonald and Trowbridge (2009) focus explicitly on the effect of residential density on driver's licence holding, when controlling for other factors. They found that when controlling for demographic characteristics (age, gender, teen has a job, income, household size, education of householder) young people aged 16-19 years old living in less dense and more sprawling communities are more likely to hold a driver's licence than those living in more dense communities.

Another multivariate study based on the Household Travel Survey in France focuses on the role of social inequalities in terms of holding a driver's licence among young people

³ Both of these studies are based on data from the national statistics on driving licence holding and population statistics in Sweden and Norway, respectively.

aged 18-24 years (Licaj et al., 2012). The findings in this study suggest that being less privileged (living in a deprived area or having a low income), living with parents, or living in a household with no car has a negative effect on driver's licence holding, while being a male and age has a positive effect on holding a driver's licence, when all other factors are controlled for. In addition, this study indicates that young people living in the inner suburbs are less likely to hold a driver's licence than young people living in the centre, when all other factors are controlled for. The authors suggest that living in a household with a car is an intermediate variable and when they remove this from their model, they find that living in a rural area has a positive effect on driver's licence holding, when other factors are controlled for (Licaj et al., 2012).

In conclusion, the review shows that holding a driver's licence is likely to be related to socioeconomic background, life stage (e.g. living with parents, having children), and residential location. These findings suggests that driver's licence holding at a young age varies with both differences in young people's *needs* and differences in *individual opportunities* to get a driver's licence. The latter suggests that there are social inequalities in the opportunity to get a driver's licence, especially those with a lower level of financial ability even when they have a need for it. More knowledge is needed on the potential consequences of the lack of opportunity to get a driver's licence, and whether the lack of one can make already socially excluded groups even more socially excluded, e.g. if they have to decline a work position because they cannot get to work without a car/being able to drive. The review also shows that driver's licence holding varies according to whether they have an immigrant or non-immigrant background. There is a need for more knowledge on whether the lower licensing rate among immigrants is primarily related to lower incomes in this group (and hence, poorer *opportunities* to get a driver's licence) or to other factors. In addition, the multivariate studies on factors that influence driver's licence holding among young people stem from other countries (Australia, USA, France) rather than the Scandinavian ones. There is a need for more knowledge on the relative importance of factors (e.g. income, employment/student status, immigrant background, residential area, perceptions and interests for the car), by the use of multivariate analysis techniques, on driver's licence holding in Sweden and Norway.

2.5.2 Reasons for getting or not getting a driver's licence

Recently, several quantitative studies on the reasons for not getting a driver's licence have been conducted among young people, in Sweden (Forward et al., 2010)⁴, in Norway (Hjorthol, 2012), in the UK (Noble, 2005), in the USA (Williams, 2011; Schoettle & Sivak, 2014), and in Australia (Delbosc and Currie, 2013b). They are difficult to compare and synthesize because the given reasons in the questionnaires vary and, in addition, the studied age groups often vary. However, some common features can be deduced from these studies. One of the main reasons in all of the studies relates to the economic aspects of getting a driver's licence and/or buying/maintaining a car:

⁴ In the study by Forward et al. (2010), the options were as follows (our translation from Swedish to English): "I cannot afford it", "I don't have the time for it", "Public transport covers my needs", "I'd like to buy something else", "the car is damaging to the environment", "my friends don't have a driver license", "my parents do not like me to take a driving license", "I do not think I will pass the theory test", "I do not think I will pass the practical test". ,

- Young people state that “they cannot afford it” (referring to getting a driver’s licence) (Forward et al., 2010; Hjorthol, 2012) or it “costs too much” (Williams 2011);
- “Owning and maintaining a vehicle is too expensive” (Schoettle & Sivak, 014);
- “Petrol, insurance etc. costs too much”, “buying a car costs too much” and “getting a licence costs too much” (Delbosc & Currie, 2013b);
- “Cost of learning”, “cost of insurance” and “cost of buying a car” (Noble, 2005).

In Williams’ study from the US (Williams, 2011), the most important reason among 18 year-olds people was “no car available”, which might be an indirect measure of a person’s financial ability, but it might also indicate that those living without a car in the household have a higher threshold to start driver’s licence training.

In all of the studies that asked whether lack of time/busy with other things was a reason for not getting a driver’s licence, this reason was also given a high rate, next to the economic aspects relating to getting a driver’s licence/maintaining a car (Delbosc & Currie, 2013b; Forward et al., 2010; Schoettle & Sivak, 2014). It is likely that also time requirement for going through the driver’s license education might be perceived as part of the general costs related to acquiring a driving license.

The finding that both economic aspects and available time are among the major reasons for not getting a driver’s licence indicates that *individual opportunities*, especially individual resources (economical and temporal), for getting a driver’s licence are important.

However, to what extent young people *need* a driver’s licence is also suggested as an important reason for not having a driver’s licence in several studies. An analysis based on the national travel survey in Norway suggests that not needing a driver’s licence was the most important reason, in addition to financial ability, for not getting one among young people aged 18-35 years (Hjorthol, 2012). This reason was more important for those living in big cities than those living in other parts of the country. Young people living in big cities also are more likely to state “a good public transport supply” as a reason for not getting a driver’s licence than those who live in other parts of the country. That young people do not need a driver’s licence because they have other forms of transportation available is also reported to be one of the major reasons in several of the studies:

- “Public transport covers my needs” (Forward et al., 2010);
- “Other forms of transport available” (Noble, 2005);
- “Able to get transportation from others” (Schoettle & Sivak, 2014);
- “Can get where I want without driving” (Delbosc & Currie, 2013b, Williams, 2011);
- “Family and friends can drive me when necessary” (Delbosc & Currie, 2013b).

There is also an indication in several of the studies that young people have *other priorities*. In the study from Australia, Delbosc and Currie (2013b) find that “rather spend my money on other things” is the most important reason for not having a driver’s licence. This is also the fourth most important reason in the Swedish study (Forward et al., 2010). These results suggest that a person’s interests are important in their choice to get a driver’s licence or not. None of the other reviewed studies included questions regarding interests and priorities.

In his study, Williams (2011) found that almost a third of the 18 year-olds rates “parents too busy to supervise” as a reason for not starting the driver’s licence process yet, after reasons related to costs and available time.

In most of the studies that included *environmental concerns* as a reason not to get a driver’s licence, this reason had a relatively low score compared to other reasons (Delbosc & Currie, 2013b; Forward et al., 2010; Noble, 2005; Schoettle & Sivak, 2014). In the Swedish study, however, environmental concerns was rated as the fifth most important reason out of ten options (Forward et al., 2010).

Reasons related to the following topics got a relatively low score in the studies:

- Parents are against their children obtaining a driver’s licence (Forward et al., 2010; Williams, 2011);
- They think they will not pass the driver’s licence education (theory and/or practice driving exam, or enough supervised driving training) (Delbosc & Currie, 2013b; Forward et al., 2010; Noble, 2005);
- Safety concerns, e.g. “driving is dangerous” (Delbosc & Currie, 2013b; Noble, 2005; Williams, 2011);
- Friends do not drive (Delbosc & Currie, 2013b; Forward et al., 2010; Williams, 2011);
- Afraid to drive (Schoettle & Sivak, 2014);
- Disability/medical problem (Noble, 2005; Schoettle & Sivak, 2014);
- Just no interest in getting a driver’s licence/in driving (Delbosc & Currie, 2013b; Noble, 2005; Williams, 2011).

The possibility to communicate/connect with others via social media instead got a relatively low score compared to other reasons in two of the studies that asked about this (Schoettle & Sivak, 2014; Williams, 2011), but it was the seventh most important reason out of 15 in the study by Delbosc and Currie (2013b).

Only two studies have been found that explore reasons for not holding a driver’s licence, when controlling for other reasons and background factors (gender and residential location), respectively Berg, Andersson and Warmark (2001) and Andersson and Warmark (1999). Both studies are based on the same data from Sweden among 1,408 young people (18.5 years old). The study by Berg et al. (2001) suggests that, when all factors are controlled for, the perceived financial situation is the dominant factor for holding a driver’s licence. The second most influential factor is available time left over from schoolwork and leisure time, when all factors are controlled for. These findings suggest that an individual’s opportunity to get a driver’s licence not only depends on financial ability, but also available time. However, in our view “available time” might also be a question of priorities, that young people prioritize other interests and activities over getting a driver’s licence.

The study by Berg et al (2001) finds several indications for the role of perceptions and norms for getting a driver’s licence. They find that parents’ and friends’ attitudes to holding a driver’s licence also have a significant effect: The more positive attitude to obtaining a driver’s licence among parents and friends, the more likely a person is to hold a driver’s licence, when other factors are controlled for. Moreover, the study finds parents’ and brothers’ or sisters’ perceptions of the car can have a positive effect. Young people with a family member who perceives a car to be a symbol of independence and a step towards the adult world, are more likely to hold a driver’s licence.

Moreover, the study finds that the (perceived) opportunity to travel by public transport and living in an urban area decreases the likelihood of having a car, when all factors are controlled for. These results suggest that the need for a driver's licence varies among young people.

Finally, the study by Berg et al. (2001) suggests that those who believe that they have greater access to an instructor/driving school are more likely to hold a driver's licence than those who believe they have poor access to a driving instructor/school. This finding suggests that access to a driving instructor/school might be an indicator of an individual's opportunity to get a driver's licence. The study by Andersson and Warmark (1999) finds similar results.

In conclusion, this review suggests that the explanation for why a young person holds a driver's licence or not cannot be traced back to one singular factor but is rather the result of both *perceptions of and interest* in a driver's licence/car, *needs* and *individual opportunities*, as also suggested in the review of the factors that influence driver's license holding in section 2.5.1. Both these reviews suggest that we have to search for potential changes in young people's perceptions and interests, in their needs and/or in their individual opportunities to obtain a driver's license in order to explain the development in the driver's licence rate observed among young people the last decades.

2.6 Changes in the driver's licence rate among young people – hypotheses and explanations

Although several attempts have been made to find explanations for the observed trend, most of these explanations rely on “trend evidence”, that is, evidence of long-term change in a potential cause and do not measure both licensing and the hypothesized cause in the same study (Delbosc & Currie, 2013a).

Some explanations are also sought with evidence in the cross-sectional studies that measure driver's licence holding and potential causes at one specific point in time, such as those discussed in section 2.5. In addition, there are several qualitative studies that have been conducted on young persons' perceptions of the car and driver's licence and their reasons for or against getting a driver's licence in order to generate a hypothesis for potential explanations for the observed decline in the driver's licence rate, although these as well only rely on data from one specific point in time. One of these is also discussed in the theoretical introduction to this chapter (see section 2.3).

Only a few repeated cross-sectional studies have directly explored the causes for the decline in the observed driver's licence rate.

The most comprehensive literature review to date on potential explanations for the decline in the driver's licence rate is the one by Delbosc and Currie (2013a), which synthesizes available evidence on causal factors based on both cross-sectional and longitudinal studies (including “trend evidence”). In their study, they explore and assess the evidence related to changes in life stage and living arrangements, changes in motoring affordability, changes in location and transport options, attitudinal changes, and the role of e-communication.

Here, we will review previous hypotheses and explanations for the decline in the driver's licence rate. The review is structured according to societal trends and evidence that relate to changes in, respectively, “*perceptions and interests*”, “*needs*” and “*individual opportunities*”, as suggested in section 2.3 and 2.5. The review will

primarily be based on “trend evidence” and, when available, evidence from repeated cross-sectional studies.

2.6.1 Changes in needs

Several qualitative studies in the late 1990s in Sweden suggested that young people have a pragmatic approach to the driver’s licence; that it is something they will acquire when they have a need for it (Andréasson & Sjöberg, 1996; Bäcke et al., 1999; Jensen, 2000; Sjöberg, 2000). Changes in how young people live, their geographical location and their activity and travel patterns in daily life are likely to influence their *needs* for a driver’s licence. In the literature, four different explanations are suggested, which are here assumed to influence the need for a driver’s licence: “extended youth”, urbanization, changes in the public transport supply and the use of e-communication.

Extended youth

Within youth research it has been noted that the gap between childhood and adulthood has increased considerably since World War II. This has led to an extension in the period of youth – a phenomenon which is called “extended youth” (Blasco et al., 2004; Øia, 1996). Several countries have witnessed a delay in the traditional markers of adulthood (e.g. age of marriage, age of giving birth the first time, age when moving out of parental home) and within transport studies this delay has been suggested as one of the explanations for the decline in the driver’s licence rate (Delbosc & Currie, 2013a; Forward et al., 2010; Nordbakke & Ruud, 2006). In Norway, the age of women giving birth for the first time rose from 25.1 years in 1985 to 30.4 years in 2012 (SSB 2014). In Sweden, people are likely to be between 30-40 years old by the time they have a stable position in the employment market and when they establish a family (Salonen, 2003; SCB, 2005). The same tendencies are experienced in Australia (Australian Bureau of Statistics 2012 in Delbosc & Currie, 2013a; Mitchell 2006), where the median ages of both first marriage and of first-time mothers have increased since 1990 and young Australians today are less likely to live with a spouse or partner than they were in the 1980s (Australian Bureau of Statistics 2012a in Delbosc & Currie, 2013a). The USA, France, UK and Germany have also experienced an increase in the age at which people are choosing to start a family (see respectively US Census Bureau, 2010; INSEE, 2009; Destatis, 2010b in Kuhnimhof et al., 2013). In addition, the proportion of young people who live at home with their parents has increased significantly during the last decade in countries such as Japan (Japan Ministry of Internal Affairs and Communications 2010 in Kuhnimhof et al., 2013) and Australia (Delbosc & Currie, 2012a).

The later transition to adulthood is likely to be related to the large increase in the student population and to the decrease in the employment rate among young people in recent decades in several countries. For example, in Sweden the proportion of students doubled from 1985 to 1996, from 22% to 44% (Krantz, 1999) and in Norway the student population grew from 100,000 in 1985 to 180,000 in 1996 (Try & Amodt, 2000), which corresponded with the decline in licence holding among young people in both countries (Krantz, 1999; Nordbakke, 2002). In the case of Norway, it has also been noted that students even study longer than before (Nordbakke & Ruud, 2006), which can contribute to an even later life stage transition. An increase among young people in higher educational enrolment has also been observed in the USA since 1990 (Taylor et al., 2012), in Australia since 1991 (Delbosc & Currie, 2013), in the UK since 1992 (Office for National Statistics, 2011) and in the Netherlands since 2001 (van der Waard et al., 2013).

Based on the national travel survey in Sweden, Krantz (1999) also found that the proportion of young people who were employed decreased between 1985 and 1996, while those who were unemployed (not students) rose in the same period. Overall, there is a decrease in workforce participation among young people (World Bank, 2010). For example, in the USA the employment-population ratio for young people decreased from 67% in 1990 to 49% in 2010 (Bureau of Labor Statistics, 2011).

Taken together, many of these delays in the traditional markers to adulthood may have resulted in a lesser need for a driver's licence among young people. Without children, the need for a car is probably less and young people may focus more on their own needs. Even though young people who study may have less financial ability, they are freer in terms of time and space compared to those who work and/or have children. One hypothesis is that the more a person has fixed structures in their life, the greater the need for a car – and a driver's licence. With the “extended youth” the structures are fewer and hence the need for a driver's licence has been reduced.

On the other hand, “extended youth” may also have reduced young people's financial ability to get a driver's licence and hence their opportunity to obtain a driver's licence. The latter will be discussed further later in this section.

Urbanization among young people

In both Sweden and Norway the decline in driver's licence holding during the 1990s was greater for young people living in urban areas than for those living in other areas, which in both cases was assumed to be associated with the increase in the student population in both countries (Krantz, 1999; Nordbakke, 2002). Universities and colleges are often located in cities and larger towns where the transport alternatives to the car are greater and the distances are shorter than in other parts of a country (Krantz, 1999; Nordbakke, 2002; Nordbakke & Ruud, 2006). An increase in the proportion of the population that is urban – especially among the young – is also observed in the other developed countries (Destatis, 2010; World Bank, 2010). There is also a clear trend towards increased residential development in inner cities in Europe, the USA and Australia (see respectively van der Waard et al., 2013; Raimond & Milthorpe, 2010; and Delbosc & Currie, 2013a), and many young people prefer to live in mixed-use and walkable “smart growth” suburbs and inner cities that support a lifestyle without a car (Belden Russonello & Stewart, 2011; Davis et al., 2012; Lackman & Brett, 2011 in Delbosc & Currie 2013a). It is likely that the urbanization trend among young people has contributed to a lesser *need* for a driver's licence. However, the nature of urbanization of the young population is likely to influence the effect on driver's licence holding among young people. Although many developed countries experience an urbanization characterized by condensed settlement structure, some countries still experience urban sprawl settlements, such as in the case of Australia, where most of the population live in suburban car-based sprawl. Hence, the effect of urbanization on driver's licence holding among young people in Australia is likely to be of minor significance (email from Professor Graham Currie, Monash University, Australia).

Changes in the quality of the public transport supply?

Norway experienced a huge increase in the use of public transport during the 1990s, especially among young people (Ruud & Nordbakke, 2002; Stangeby, 2000). Stangeby argued that this increase was the result of great efforts to build up and improve the public transport system during the 1990s. In addition, Stangeby (2000) argued that the introduction of the “youth travel card” made the public transport system more attractive

for young people. Together with increased urbanization among young people, the improved public transport supply in the bigger cities in Norway could have contributed to a lesser *need* for a driver's licence among young people.

The increased use of information and communication technology (ICT)

There is still little knowledge on the impact of the rising use of ICT on travel behaviour. The discussions have evolved around whether ICT substitutes for physical journeys, whether it generates an increase in physical travel, whether it modifies the way one travels in physical space (e.g. the choice of a route or timing of travel in physical space), or whether ICT has no effect on travel behaviour (Mokhtarian et al., 2006). Studies that have explicitly explored the link between ICT and driver's licence holding among young people have only recently emerged. Some studies have suggested that the use of ICT has reduced young people's need to travel (the substitution effect). In an online questionnaire by Zipcar in the United States, 50% of young people reported that they sometimes spend time with friends online instead of in person (KRC Research, 2010, in Delbosc & Currie, 2013a). Moreover, Sivak & Schoettle (2012) found that a higher proportion of internet users in a country (15 countries were included in their study) was associated with lower licensure rates among young people (20-24 years of age), when other factors were controlled for.⁵ Sivak and Schoettle (2012) claim that this finding is consistent with the hypothesis that access to virtual contact reduces the need for actual contact among young people. Le Vine and colleagues have questioned the validity of the analysis used to establish a relationship between national internet penetration rates and youth licensing (Le Vine et al., 2013). Moreover, other studies suggest that ICT supplements rather than replaces face-to-face contact (Delbosc & Currie, 2013a) and even generates more face-to-face contact (van der Berg et al. 2009). Against this background, Delbosc and Currie (2012) have noted that although reduced face-to-face contact may reduce the need for travel, it is likely that it reduces all travel, not only the need to drive. In sum, there is no general agreement among researchers on the effect of the increased use of ICT on the driver's licence rate among young people.

The opportunity to use smartphones and social media while in transit can make public transport more attractive to young people as compared to driving (talking on the phone and texting is banned in many countries), although this does not necessarily imply that young people prefer to use public transit for that reason. However, new technology such as websites and smartphone applications have made public transportation easier to use. None of the reviewed studies have explored how new communication technologies might facilitate a lifestyle evolved around the use of public transport and to what extent these have had an effect on the need for a driver's licence.

There is a need for longitudinal studies in order to test whether increased use of ICT (and to what extent) has an impact on the driver's licence rate among young people. In the case of Sweden and Norway, the decline in driving licensure rate among young people started before the widespread use of ICT in the population in general, which indicates that there are other more important explanatory factors for the decline in these two countries.

⁵ The factors that were included in the regression analysis were: gross national income purchasing power parity (GNI PPP), vehicles per 1,000 people, passenger cars per 1,000 people, vehicles per kilometer of road, percentage of unemployed, percentage of population in megacities, median age of the population, mean year of schooling (Sivak & Schoettle, 2012).

2.6.2 Changes in individual opportunities

In the reviewed literature, two kinds of *individual opportunities* have mainly been discussed as possible explanatory factors for the decline in the driver's licence rate among young people: changes in young people's financial ability and changes in driving training education. We will add another hypothetical explanation: increase in the proportion of immigrants in the population.

Changes in young people's financial ability

It is likely that economic recessions might influence young people's financial ability through fewer job options and hence their opportunity to get a driver's licence. Both Sweden and Norway experienced an economic recession in the late 1980s and the beginning of the 1990s. From this point in time, these two countries also saw a rise in the student population and a decrease in the employment rate among young people. According to Krantz (1999), the economic recession is likely to be one of the major explanatory factors for the decline in the driver's licence rate in Sweden during the 1990s. Other researchers have questioned this assumption, at least for the case of Sweden and Norway (Andersson & Warmark, 1999; Nordbakke & Ruud, 2006). Andersson and Warmark (1999) argued that the decline in the driver's licence rate in Sweden started before the economic recession and that it even continued to decline after the recovery of the economy. In Norway, the decline continued even with a boost in the economy during the 1990s (Nordbakke & Ruud, 2006). These facts might suggest that the reduced employment rate and increase in the student population – and the decline in the driver's licence rate among young people in Sweden and Norway – can be traced back to changes in young people's interests, tastes and lifestyles, that is, changes in their choices, and not only to economic recession.

As noted by Delbosc and Currie (2013), research from other countries also suggests that the relation between economic recession and decline in the driver's licence rate among young people is not clear. A study by Davis and colleagues (2012) in the USA suggests that young people with jobs or in high-income households are less likely to drive and more likely to use public transport than a decade ago, before the global financial crises. Moreover, the same study shows that vehicle miles travelled began to drop several years before the financial crises. In addition, in a study in the UK, Stokes (2012 in Delbosc & Currie, 2013a) found that the largest drop in miles driven was among young men of higher incomes and men in full-time work.

Other external factors may have influenced young people's opportunity to get a driver's licence as well. In France, a decrease in driver's licence holding among low-income young men corresponded with the abolition of national military service in 1997 (Avrilliers et al., 2010). Moreover, an increase in the costs related both to driver's licence training and to acquiring and maintaining a car might also have reduced young people's opportunity to get a driver's licence in some countries, but the findings on this are unclear. A study from Norway shows that the costs related to driving training education were actually reduced after a major revision of driving education in 1994-95 (Christensen, 1997). In Norway it was suggested that young people might have perceived that the changes in driver's licence education would increase the costs and that this might have triggered the decline observed among 18 year-olds in the same year (1995) (Nordbakke & Ruud, 2006). Other countries, such as the UK, have experienced an increase in the costs of acquiring a driver's licence (Noble, 2005). Moreover, petrol prices have increased in several countries (Davis et al., 2012). However, the study from

the UK suggests that the overall costs of motoring have declined, primarily because of reduced purchase costs (Noble, 2005).

Changes in content of the driving training education/test?

In Sweden, the decline in driver's licence holding among young people began in the same year (1990) as a new driving training exam was introduced (Krantz, 1999: 87). In 1990, the driver's licence rate among 18 year-olds fell from 50% to 35%. Even among 19 year-olds there was a decrease in the driver's licence rate. In Norway as well, the decline in the driver's licence rate among young people coincided with the introduction of new rules for driving training education in 1995 (Nordbakke & Ruud, 2006). As the driver's licence rate among young people continued to decrease in both countries many years beyond, even though the decline was not as steep as in the year of the change in the driving training education/test, it was concluded that other factors may have caused the changes in the driver's licence rate than changes in the driving training education/test (Nordbakke and Ruud, 2006). Even more recently, the pronounced decline in the driver's licence rate among 18 year-olds was observed in Norway with the introduction of new driving training education in 2005 (Bjørnskau, 2014). In the latter case, the driver's licence rate quickly started to increase again, although in 2011 the licensing rate was still below that of the year before the introduction in 2005. Hence, it appears that the effect of the change in driver's licence education is only short-term. The same observation was made in the USA with the introduction of graduated driver licensing (GDL); the reduction in the driver's licence rate that followed appears to "rebound" quickly (Zhu et al., 2009). Other countries observed that the decline in the driver's licence rate among young people began to drop before the introduction of the GDL (Australia) or before a stricter driving training test was introduced (UK) (see respectively Delbosc & Currie, 2013a; and Noble, 2005). In conclusion, changes in the driving training education/test are not likely to explain the continued decreased in the driving licence rate among young people, at least not in Sweden and Norway.

An increasing proportion of immigrants in the population?

As noted previously, a recent study from Sweden shows that young people born abroad are less likely to hold a driver's licence than people born in Sweden. Both Sweden and Norway have experienced a significant increase in the immigrant population in the last few decades (SSB, 2013b; SCB, 2013). As already noted, non-western immigrants often have lower incomes than the rest of the population and, as income is one of the major factors influencing driver's licence holding among young people, one can expect that an increase of non-western immigrants in the population to some extent has contributed to the decline in the driver's licence rate among young people. The effect of the increase of immigrants in the population has not been explored in previous studies.

2.6.3 Changes in perceptions and interests

There are mainly three topics that have been discussed in previous literature that relate to potential changes in young people's *perceptions of and interests in cars* and driver's licences: changing status of the car, changes in attitudes and concerns for the environment and changing priorities among young people.

Changes in environmental concerns

With the increased attention to the challenges of climate change in recent decades one can expect that young people are less likely desire to drive a car (and get a driver's

licence) because they want to protect the environment. As mentioned above, recent studies on reasons for not getting a driver's licence suggest that environmental concerns have only a limited role in explaining why people do not get a driver's licence; other reasons, such as financial ability, lack of time and access to other means of transport are more important (see Section 2.5.2). However, the Swedish study on reasons for not getting a driver's licence (Forward et al., 2010) already discussed in section 2.5.2, suggests that the weight attached to environmental concerns has increased between 2002 and 2009, and that the difference between the two study points is significant. As noted above, it is rated as the fourth most important reason out of ten options. The same study finds that the weight attached to "going by public transport is just as convenient as going by car" as a reason for not holding a driver's licence increased significantly in the same period and is rated the second most important reason out of ten, after "cannot afford it". As young people are less likely to hold a driver's licence, it is reasonable to assume that they travel more with public transport. When measuring attitudes, there is always a risk that people have adopted their attitudes to their behaviour. Hence, there is a possibility that the increase in the environmental concerns is an effect of changes in travel behaviour and not vice versa. There is a need for more solid evidence to claim that increasing environmental concerns can contribute to explaining the decline in the driver's licence rate among young people. As noted by Delbocs and Currie (2013) other studies have questioned the assumption that young people are more environmentally aware than previous generations and that this has influenced the likelihood of holding a driver's licence. For example, in the UK, a large-scale survey found that young people aged 18-24 were the least likely of any age group likely to recycle, cut down on energy and water use, or to cut down on car use in order to save the environment (Department for Environment, Food and Rural Affairs 2002, in Delbosc & Currie, 2013).

The car is no longer an important "rite of passage"

For a long time the car was perceived as a key to the adult world and owning one's first car was perceived as a symbol of freedom, independence and status (Sjöberg, 2000; Øia, 1997). In a multivariate study among Swedish young people (18.5 years), Berg (2001) also found that those who held these views of the car were more likely to hold a driver's licence. Qualitative studies from the late 1990s in Sweden suggest that the driver's licence is no longer perceived as an important "rite of passage" into adulthood (Andersson & Warmark, 1999; Sjöberg, 2000), nor as a status symbol (Andersson & Warmark, 1999).

Changes in young people's perceptions of the car might have influenced their desire to get a driver's licence during the 1990s in Sweden and Norway; however, there are no studies that have explored changes in perceptions of the car among young people.

Other priorities now than before?

Young people's perceptions of the car are likely to be related to how they prioritize their consumption. In the transition from the industrial to the post-industrial society, modern western societies have become more pluralistic and individualistic. In addition, the choice options have increased. The development of the consumer market has given young people a greater range of choice options. In the last decade, there has also been an explosive development in the ICT market. These developments, together with "extended youth", may have changed young people's interests and priorities. They may prefer to spend their money on an expensive Mac or travel around the world instead of on driver's licence education – and there might have been a change in what products

confer status today among young people. In addition, new products, such as a Mac may contribute as much or more to future incomes if used productively than the access to a driver's licence/car. However, young people are not a homogenous group and youth culture is continuously being more differentiated in terms of interests, activities and consumer patterns – often summarized as lifestyles. As shown in a study by Puranen (2001) among young people in Sweden, lifestyles are important for the travel habits of young people and in their perceptions of the car.

In conclusion, this review of the potential hypothesis and explanations of the decline in the driver's licence rate among young people suggests that the explanation for the decline is complex and that both changes in perception and interests, needs and individual opportunities are likely explanatory factors. In addition, the explanation for the decline in the driver's licence rate is likely to vary from one country to another. Even though perceptions and interests, needs and individual opportunities are likely to be interrelated, there is a need for knowledge on whether the changes in these primarily is explained by external factors ("structural explanations") or by changes in peoples values, attitudes, interests and general lifestyles ("cultural explanations").

2.7 Summary and discussion

The purpose of this chapter was twofold: 1) to review the literature on factors that influence the development on the driver's licence rate among young people in general and in different socioeconomic groups and in different regional settings, and 2) to review the research on trends, prognoses and evaluations of future developments in driver's licence holding in the same groups.

In order to understand trends in the driver's licence rate among young people, it was suggested that we first have to understand what explains driver's licence holding among young people. Inspired by Elster's theory of action (1970) and a grounded study on the factors that influence driver's licence holding among young people (Andersson & Warmark, 1999), it was suggested that getting a driver's licence could be understood as a result of both an individual's *desires* and their *opportunities* to get a driver's licence. In this model, a young person may have the desire to get a driver's licence, but may not have the *opportunities* to get one – or vice versa. It is assumed that an individual's desire to get a driver's licence is influenced by young people's *perceptions* of and *interests* in the car/driver's licence and/or their *needs* (derived from their activity and travel patterns, their residential location and localization of important activities, e.g. work and school).

In an attempt to increase our understanding of why a young person holds a driver's licence or not, two different reviews were conducted: 1) a review of cross-sectional studies on the association between objective characteristics of a young person and driver's licence holding, and 2) a review of studies on subjective reasons for not holding a driver's licence. The first review suggests that driver's licence holding is associated with socioeconomic status, life stage and residential location. These findings indicate that driver's licence holding is influenced by both *individual opportunities* to get a driver's licence and differences in *needs*. In addition, a study from Sweden suggests that young immigrants to a lesser degree hold a driver's licence compared with young non-immigrants. This might be explained by lower incomes among immigrants compared with non-immigrants in Sweden, although other factors cannot be ruled out.

While the first review indicates that driver's licence holding varies with young people's individual resources (*opportunities*) and *needs* for a driver's licence (having children,

not living in an urban area), the second review is more explicit in terms of these factors. The second review shows that the primary reasons for not holding a driver's licence among young people – across several studies – are related to lack of individual resources (economical and temporal) and to availability of other transportation options (indicating a lesser need for a driver's licence). In addition, the review of the reasons for not holding a driver's licence also suggests that young people have other priorities – and hence that not holding a driver's licence is a choice.

The two reviews suggest that the explanation for why a young person holds a driver's licence or not cannot be traced back to one singular factor. The reviews suggest that holding a driver's licence or not is a result of both *perceptions* of and *interests* in a driver's licence and car, as well as *needs* and *individual opportunities*. Hence, when trying to explain changes in the driver's licence rate among young people there is a need for exploring changes in all these three factors: *perceptions* and *interests*, *needs* and *individual opportunities*. As most knowledge on driver's licence holding among young people stems from bivariate analysis in Norway and Sweden, there is a need for multivariate studies on the relative importance of various sociodemographic characteristics (e.g. income, employment/student status, immigrant/non-immigrant background, family situation, residential location) and of values and attitudes on driver's licence holding among young people.

The review of the development in the driver's licence rate among young people shows that several countries have experienced a decline in the driver's licence rate among young people during the last few decades. In Sweden and Norway, the decline has been observed in both men and women, and in both rural and urban counties, although the decline has been greater in the latter kind of regions than in the former.

Increasing attempts have been made in the research in order to explain this development observed in several countries in the last decades. Knowledge of the factors that influence driver's licence holding serves as an important background for developing hypotheses of potential explanations. The potential explanations and hypotheses for the decline in the driver's licence rate among young people in this study can be summarized as follows:

- Extended youth (age of women giving birth the first time, age of marriage, student rate, proportion of people living at home);
- Urbanization among young people;
- Improvements in the public transport supply;
- Poorer financial ability among young people (economic recession, more young people are students, higher maintenance prices (fuel, insurance), higher car purchase prices, more costly driver's licence education);
- Changes in the population: increase in the immigrant population (lower income group);
- Changes in the driver's licence education/more complicated;
- Changes in access to accompanied driving;
- Changes in perceptions of and interests in the car/driver's licence, and in priorities;
- Increased use of ICT/smartphones (substitutes the need to travel/use a car and/or replaces the status of the car).

Explanations are likely to vary from one country to another. In both Sweden and Norway, the decline in the driver's licence rate among young people coincided with the start of an economic recession. However, in Sweden, the economic recession started

before the one in Norway and lasted longer, but in both countries the decline in the driver's licence rate continued even after the end of the economic recession. Hence, in Norway the economic recession has not been considered as an important explanation, although it has been questioned whether it could have triggered the decline in the licensing rate (Nordbakke and Ruud, 2006). In Sweden, the role of the economic recession during the 1980s has been disputed (Krantz, 1999; Andersson & Warmark, 1999). Researchers in both Sweden and Norway have suggested that the increasing proportion of students among young people and the urbanization of young people are important explanations for the decline in the driver's licence rate. By contrast, urbanization is not perceived as an important explanation in Australia (Delbosc & Currie, 2013).

The review suggests that the decline in the driver's licence rate among young people can be traced back to several factors - both changes in perceptions and interests, needs and individual opportunities and that these factors are likely to be interrelated. Notwithstanding, there is a need for knowledge on whether these changes primarily are explained by changes in external factors ("structural explanations") or by changes in young people's values, attitudes, interests and general lifestyles ("cultural explanations"). There is a lack of research that measures both licensing and the hypothesized cause in the same study and we have found no studies that have calculated the effect of the hypothesized causes. In order to make prognoses of future driver's licence trends, there is a need for more country-specific research on the importance of the different explanations for the decline in the driver's licence rate suggested above. Therefore, the review has found few studies about forecasts on possible future trends for driver's licence holding among young people.

3 Young people, driver's licence, work and welfare

3.1 Introduction

This chapter reviews international knowledge of what driver's licence holding may mean for young people in different geographical and socioeconomic contexts, and with regard to age, gender, immigrant background and disability, with respect to its impact on welfare. The chapter begins with a brief description of welfare research into living conditions of different population groups, which most of the studies under review are part of. In this connection the welfare approach "youth transitions" and the central theme, "transition to work", which characterize these studies, are presented. General findings from the literature are then presented, answering the questions why holding a driver's licence matters and what groups of young people are targeted in the research.

The majority of the reviewed literature stems from case studies. The chapter will continue with some studies presented at more length in order to give a more comprehensive understanding on how driver licensing is researched as a contextual and complex issue, which is distinctive to this research design. The studies have also been selected to exemplify important findings concerning the welfare implications of driver's licence holding on particular vulnerable groups of young people. The chapter also includes a section where the welfare approach within the branch of transport research that has traditionally looked at young people and driver licensing and from the point of view of traffic safety is compared with the approach applied in the youth welfare research. The chapter ends with a concluding discussion.

3.2 Data & Method

Two types of information retrieval have been used. Firstly, a conventional search in metadata, with hits for search words in titles, references and specified subject words for publications. The search was carried out by information specialists at the library and information centre, BIC, at VTI. The following databases were searched:

- The national library catalogue VTI <http://www.transguide.org/search/index.asp>
- TRID <http://www.trid.trb.org>
- Scopus <http://www.elsevier.com/online-tools/scopus>
- Web of Science <http://thomsonreuters.com/thomson-reuters-web-of-science/>

The search covered literature from 1990 onwards, and the following search words were used:

- "körkort": driving license/licence, driver license/licence, licence/license to drive, driver's license/licence.
- "unga": young adult, young people, young person, youth, adolescent, teenage, teen age
- "välfärd": welfare, poverty, Social*, sociol*, work, working, labour/labor, occupation, job, income, salary, unemploy*, employ*, socioeconomic, wellbeing, accessibility, household, exclusion, integration, academic, university, college, higher education.

Scopus and Web of Science were also checked for all references to "driving licence" and "young" which did not contain the words crash, accident, drunken etc. in the title. The national library catalogue, LIBRIS, was checked for all references to "körkort" and "unga". The national library catalogue was also searched for the Norwegian, Danish and German words for "driving licence".

This search resulted in 18 hits, of which only one was deemed relevant. The search showed that, with respect to the impact on welfare of driver's licence holding, there is a significant research and knowledge gap in both transport research and other research areas. The lack of hits in metadata indicates a shortage of studies in which the primary focus is on this topic.

Because of the limited number of hits, a search was also carried out in Google Scholar. Google Scholar offers great opportunities for searching in full text as well as metadata. The method is extremely time consuming and results, as a rule, in a large number of hits, as well as non-specific hits. It does, however, increase the opportunity of finding studies into driver licensing associated, in some way, with welfare effects, even if it is not the main focus of the research. The following full-text searches were carried out.

Table 3 Search words and hits in the full-text search. It should be noted that different spellings/synonyms have been used.

Year	Search words	Number of hits
1990-1995	"young people" + "driving licence" + "welfare"	39
1996-2000	"young people" + "driving licence" + "welfare"	116
2001-2005	"young people" + "driving licence" + "welfare"	382
2006-2010	"young people" + "driving licence" + "welfare"	558
2011-2013	"young people" + "driving licence" + "welfare"	346
2014	"young people" + "driving licence" + "welfare"	1
1990-1995	"young people" + "driving licence" + "labour market"	16
1996-2000	"young people" + "driving licence" + "labour market"	64
2001-2005	"young people" + "driving licence" + "labour market"	264
2006-2010	"young people" + "driving licence" + "labour market"	310
2011-2013	"young people" + "driving licence" + "labour market"	171
2014	"young people" + "driving licence" + "labour market"	0

As shown in table 3, number of hits rose in more recent years. The conclusion cannot, however, be drawn that the question of driver licensing and welfare has attracted more attention in research in more recent years, since it may simply be the result of more frequent digital media publication. Most of the publications were "grey literature". All hits were examined. 55 publications were deemed relevant.

3.3 Welfare approach in the reviewed literature

The majority of the selected publications do not fall into the area of transport research. This suggests that the welfare effects of driver licensing has not been looked at in any great detail in this research.

The publications are actually in the welfare research category. This broad field of research focuses on many different aspects of the living conditions faced by individuals and groups (work, income, housing, education, health etc.), closely associated with welfare policies aimed at ensuring quality of life and good living conditions for all citizens. Key research topics are lack of welfare based on structural factors such as age, gender, education, income etc., and accumulations of welfare disadvantages in certain population groups, as well as the lack of vital necessities which are the cause of this situation. The research generally aims to identify what measures and resources need to be aimed at these groups to reduce their lack of welfare (Vogel, 2003).

The research is closely linked to the regular survey of population living conditions carried out in many countries (Hagerty et al., 2002; Vogel, 2003). Driver's licence holding and car-ownership/access are often included in these surveys. This is reflected in the large number of hits in the full-text search. However, few publications are actually based on more detailed investigations of the link between driver's licence holding and welfare among young people, reflecting that transportation do not constitute a key theme within the welfare research tradition.

The studies that will be reviewed examine more closely the link between young people who do not hold a driver's licence or have access to a car and lack of welfare in other respects. The research is based on the perspective that a driver's licence is a resource which facilitates young people's transition to adulthood. For the purpose of facilitating further reading, a brief summary of this youth welfare approach can be found below.

3.3.1 The concept of youth transitions

The term transition has for long been interwoven with the concept of youth in welfare research, primarily defined as a transitional stage of life between childhood and adulthood. Youth transition has conventionally been conceptualised as a process involving four sequential 'thresholds': completing education, entry into employment, leaving home and, forming a couple and an own family (Bagnall, 2005).

Over the last couple of decades it has been suggested that young people's transitions to adulthood have become longer and more complex (Vogel, 2002). Routes between education and work, which were earlier viewed as linear and predictable, have been replaced by a set of movements that are less predictable and involve frequent breaks, backtracking and the mix of social statuses (Furlong et al., 2006). However research into youth welfare points out that what we actually see is an increasing divide within the youth population between those following more linear routes to adulthood, even though the transition phase now is longer compared with earlier generations', and those following non-linear routes. Non-linear transitions tend to be more common among those young people from less advantaged socioeconomic positions. Linear transitions tend to be most common among those with high level of education and least common among those with low qualifications (Furlong et al., 2003).

The focus of the reviewed research is on the non-linear transitions of vulnerable groups of young people. Driver's licence holding is investigated as part of a key threshold for transition; entry into employment.

3.4 Driver licensing and transition to work

Publications found that deal with driver licensing and transition to work are mostly based on case studies. The age of the young people varies both within and across studies. Even though surveys and interviews are common methods, design and analysis

vary a lot. With this kept in mind the studies report similar results of the significance of driver's licence holding for young peoples' ability to apply for jobs, find work and remain employed.

In an often cited statistical UK study by Stafford et al. (1999) on the determinants of success and lack of success in the labour market, having a driver's licence doubled young people's chances of leaving unemployment. The unemployment spell was two months for those with driver's licences, and eight for young women and four for young men without. Among young men, 80 % of those in full-time work, but only half the unemployed had driver's licences. Among young women, 74 % of those in full-time work, but only 38 % of the unemployed did so. Several studies indicate similar figures and links between having a driver's licence, fewer and shorter periods of unemployment, and permanent employment (Hales et al., 2003; Lakey & Bonjour, 2002; Trickey et al., 1998).

One explanation for these links given in the literature is that holding a licence improves the employability of young people in respect of employer requirements and preferences. The research indicates that employers regard a driver's licence as a qualification similar to other education, and associate it with values such as a sense of responsibility and an orderly mind in young employees. A driver's licence is also associated with greater flexibility and the option of an employee using a car for work purposes should the need arise. Moreover, a driver's licence is used to make an initial selection in order to reduce the number of applicants, which can be great when it comes to unskilled work, and where many of the candidates have similar (low) formal qualifications. The link between driver's licence holding and employability is also explained in the literature by the fact that many unskilled service jobs require employees to drive as part of their work. This is the type of work which many young people without further/higher education and young men in particular, have access to (for a review see Hasluck, 2011).

The majority of the studies do not, however, examine driver licensing as a separate issue. Instead, driver licensing is looked at as part of the issue of whether access to a car affects young peoples' opportunity to find work and remain employed. The holding of a driver's licence and access to a car sometimes becomes a single combined variable. Even so, with respect to gainful employment, this research indicates huge differences between young people who hold driver's licences and have access to cars, and those that do not. The explanation given for these differences is that, from a geographical point of view, access to a car also provides access to a larger labour market and more job opportunities. In this context, it is stressed that the private service sector, in which many young people are employed, has seen jobs become more geographically spread out. The number of short-term and temporary jobs has also increased among young people, which makes it far more important to be geographically flexible. Many jobs available to young people require them to work outside normal office hours. At present, public transport services often do not match the time and location requirements and, consequently, many young workers are highly dependent on access to a car to remain employed (Ball et al., 2000; Green et al., 2005; Tunstall et al., 2012).

Research also indicates that employers have a tendency to regard access to a car as a guarantee of employees arriving on time and working efficiently, especially if the young people live in peri-, suburban and rural locations with limited public transport provision. Access to a car also means that employees can be called in at short notice in response to labour requirements on a day-by-day basis in different locations, something which is

particularly significant when working for staffing companies and supply staff pools, which has become the case for many young people (Hales et al., 2000).

Some of the reviewed literature consists of reports on different welfare initiatives directed at vulnerable groups of young people. Many of these concerns the UK's *New Deal for Young People*, which is one of the largest and most developed welfare to work policy, and which has been adopted by several other OECD countries (White & Riley, 2002). In the UK higher unemployment rates among young people of disadvantage without a driver's licence and access to a car has in some local policies been met by providing new transport services (shared taxis with low fares, moped loans etc.), especially in rural locations with limited public transport. The result of these initiatives seems to be mixed (Cheng, 2003; Wright et al., 2009). There are also examples of local welfare to work programs in France, where offering driving education for free has been used as an innovative mean for improving employability and labour market integration for local young people of disadvantage. Good success rates are reported and the concept seems to spread to other local welfare-to-work service providers (Nativel, forthcoming).

3.5 Vulnerable groups of young people

The youth welfare research primarily focuses on young people who are in an exposed position on the labour market. A common feature is the emphasis on the fact that young people are not a homogenous group, and that the rising youth unemployment which has affected many countries since the 1990s affects certain groups of young people more than others (Jones, 2002; Webster et al., 2004). It has a particularly severe impact on young people without further/higher education, those who are part of socioeconomically weak households, are of foreign extraction, and live in suburbs, small towns or in rural areas. Those most affected are young people whose ability to take out a driver's licence and gain access to a car is limited by lack of financial and other resources, and who live in geographical locations with limited availability of satisfactory alternatives to car travel, which prevents them from accessing job opportunities and keeping a job (Furlong et al., 2003; Green et al., 2005; Licaj et al., 2012; Priya & Uteng, 2009). In this connection it should also be noted that other issues, such as access to education, social and leisure activities for youth are dealt with in a few studies, but access to work is the dominant theme (e.g. McWhanell & Braunholtz, 2002; Sjolie & Thuen, 2002; Storey & Brannen, 2000).

The gender issue has also been examined within this research, but here, the studies have produced varied results. The general impression is that the discrepancies between young men and young women taking driving tests and having access to vehicles is in process of being ironed out. Some studies point to a link between higher unemployment and young women with children and single mothers, being less likely to have a driver's licence and access to a car (Chapple, 2001; Dobbs, 2005) For example, in the US, young single mothers have been the main beneficiaries of welfare to work car programs (Fol et al., 2007). Other studies suggest that young men are more affected by not having a driver's licence and access to a car than young women. Many industrial jobs for men have disappeared in recent decades. At the same time, the expanding service sector, which offers the type of unqualified work available to young men without further/higher education, appears to be more insistent that young men have driver's licences and/or access to cars than for young women to do so (for a review see Verick, 2009).

There are also transport and disability-related studies which deals with the significance to young disabled people of holding a driver's licence to be able to gain employment

and become self-sufficient. Most of the publications look at young people with psychological issues which make it difficult for them to cope with learning to drive and driving (Brooks et al., 2013; Båtevik & Myklebust, 2006; Geiger et al., 1995; Verhoef et al., 2013). Concrete links between holding a driver's licence and gainful employment are, however, rarely investigated, and these links frequently seems to be taken for granted. This is an attitude these studies share with much of the literature found in the full-text search.

3.6 Study examples

Under this section some studies are presented more in length in order to give a more comprehensive understanding of the research under review. The studies have also been selected to exemplify important findings and urgent questions, derived from the analysis of the literature.

3.6.1 Lack of driver's licence and dependence on social security among young people with disabilities in Norway

Driver's licence holding at 28-29 years of age was one of the factors examined in a Norwegian longitudinal study aimed at explaining why young people with disabilities are often characterized by high rates of unemployment and social security dependency (Myklebust, 2013). Included were young people with various disabilities of a somatic, psychological and/or social nature, and who were educated in ordinary schools, in special or regular classes. These young people were followed prospectively from their first years in upper secondary school and into their late twenties. According to the study, nearly 44% of disabled young people were outside the Norwegian labour force in 2011. The corresponding percentage for the whole population of young people was 9.7%.

Including driver's licence holding in the study was motivated by the argument that a licence demonstrates some level of capability for employers. It may also be a prerequisite for certain types of work and many people need a car for commuting to work. Thus, a driver's licence was conceptualized as an important resource in order to earn a living. It was therefore assumed that those former students with special educational needs without a driver's licence had a greater risk of being a social security recipient than those with such a licence.

The analyses indicates that the risk of being dependent on social security in their late twenties was for men without a driver's licence close to 13 times the risk compared with those with a licence (other factors controlled for). The corresponding number was 3.4 times for women. Lack of a driver's licence entailed considerably greater risk of dependence for men compared with other variables (education level, parenthood, etc.); e.g. the risk of being dependent on social security was 2.3 times higher for men without formal qualifications compared with those with such qualifications.

This study has been selected as it exemplifies that in many quantitative studies of vulnerable groups of young people, driver's licences and/ or access to a car turn out to be one of the most important factors behind whether young people are in employment or not. However, this circumstance is often relatively briefly discussed in the publications in comparison with other investigated themes, which are more established in the welfare research tradition. The study also represents a clear example of the great variation within the group of young people regarding the significance of a driver's licence for employment, because of how different factors interact – in this case, gender

and disabilities. In this respect, the study highlights the difficulties of understanding the welfare impacts of the driver's licence without taking into account such interactions.

3.6.2 The importance of a driver's licence and a car for job-seeking and keeping in Scotland

In a combined survey and interview study, Cartmel and Furlong (2000) examined young people's (18-24 years) barriers and opportunities to enter the labour market in different geographical contexts in Scotland, UK. The young people were selected on the basis that they lived in geographic contexts with high levels of youth unemployment:

- Traditional rural areas that are geographically isolated and have significant economic activity in the agricultural sector.
- Urban fringe areas in which employment is affected by proximity to more densely populated areas.
- Seasonal areas where jobs in a significant sector of the local economy (such as tourism) tend to be available mainly on a seasonal basis.
- Ex-industrial rural areas in which the withdrawal of manufacturing or extractive industries has declined significantly in recent years.

These are contexts in which young people's ability to seek, get and maintain a job usually requires mobility and access to private transport because of the limited provision of public transport locally. There is no information in the research report reviewed as to whether a driver's licence and access to a car was included in the survey. However, these issues are included at length in the presentation of the qualitative results.

Aye transport, like I'm not getting enough off the Brew to, like, take driving lessons. I've got my provisional, I managed to take one lesson, I'd just started taking driving lessons when I was working full-time but then I got paid off and the company was running at a loss. I've had to cancel my driving lessons and that was that. (Male ex-industrial) (ibid., p. 32)

Most of the young people interviewed stressed the importance of having a driver's licence and access to a car to be able to find and keep a job. Those who were unemployed also recognized that a driver's licence was essential for getting a job, but they could not afford driving lessons.

There's a lot of jobs at Falkirk and I went for one, and the first thing they said to me was, well you're from Merrick, where is it? Oh, do you have any transport, such as how you gonna get there, it's early mornings? (Male, urban fringe) (ibid., p. 32)

My dad takes me to work in the morning, there's no way I can get here with public transport. (Female, urban fringe) (ibid., p. 32)

Many young people also reported that employers stipulated the need for a car in order to offer them a job. Stories about a severe lack of public transport were also reported by young people. Many relied on lifts from parents or friends, which for some resulted in major detours or special journeys.

The interviews indicate that lack of a driver's licence and access to a car clearly had a negative impact on job opportunities. It should also be noted that lack of a car forced many to abandon aspirations on further education. Some were unable to continue their education and tended to drift into unemployment and welfare-to-work programmes. In

this sense, the study is a good example of how lack of a driver's licence and a car are involved in the production of non-linear transitions among young people living in transport-poor as well as job-poor contexts.

There is also another reason for choosing this study as an example of important research. Many studies in the reviewed welfare literature where the consequences of not having a driver's licence are treated at length are, in fact, based on interview data. One possible explanation is that this method gives young people great opportunities to bring up what they consider is important for them, in comparison to surveys where themes are determined in advance.

3.6.3 Access to a driver's licence and car among young lone mothers in UK

Driver's licence and access to a car was included in a quantitative study by Coleman and Lanceley (2011) of lone parents included in a welfare-to-work policy: Lone parents obligation (LPO) in Great Britain (GB) (England, Scotland and Wales). The lone parents were mostly female, although 5% were male: 39% of respondents said they had a driver's licence and, of these, 74% had access to a car, and 38% of female respondents had a licence, compared with 59% of male respondents.

A number of sub-groups were less likely to have a driver's licence or access to a car:

- Younger age groups (under 30 years of age).
- Those whose first language was not English and black respondents.
- Those on lower income and without qualifications.
- Social renters (in comparison with owner-occupiers).
- Those in urban areas (although only 46% of those in rural areas had access to a car).

There was also a pattern with those currently in work or who had worked since the birth of their oldest child, who were much more likely to have access to a car, while this was lower for those who had not worked since the birth of their oldest child or those who had never worked.

In this study lack of a driver's licence and access to a car was analyzed as an example of multiple disadvantages (combinations of factors covered in the bullet points, above) – with each disadvantage adding extra burdens and bringing a corresponding reduction in lone mothers' competitive position in the labour market. Many lone mothers, especially younger ones with small children, without access to a car were restricted to finding jobs locally in order to have time to take care of their children. Public transport was very time-consuming compared with the car for non-local work, especially for mothers in outer locations. The study is a good example of emerging research where access to a car and a driver's licence have been identified as being linked to persistent, rather than temporary, poverty among lone mothers.

3.7 The approach to declining driver's licence rates within transport vs youth welfare research

Transport research has traditionally looked at the issue of young people and driver's licences from the point of view of traffic safety. This is a result of the overrepresentation of young people in road accidents. The research has looked at whether there is a link between postponing driver licensing among the youngest and a reduction in road accidents. Several studies indicate a link between people being older when issued with driver's licences and a reduction in the number of accidents. These

studies also suggest that the fall in the number of road accidents is largely due to a drop in driver's licences issued to members of high-risk groups. This primarily concerns young men from socioeconomically disadvantaged households in both urban and rural areas (Chen et al., 2010; Hasselberg et al., 2005). The fall in numbers is explained by many countries adopting longer and more expensive forms of driver training, as well as increased formal requirements on private learner drivers, which affect this high-risk group due to its limited social and financial resources (Males, 2009).

In this research, welfare is defined as an absence of accidents. The term is primarily found in studies where cost-benefit analysis, CBA, is used to assess the benefit to society of various measures aimed at reducing the number of road accidents involving young people, linked to taking driving tests and holding driver's licences (Jones et al., 2012). This involves the evaluation of special conditions for those who have recently taken their driving test, e.g. requirements to drive more slowly and not drive at certain times of the day, as well as tougher sanctions for novice drivers found guilty of traffic offences which may result in them having to re-sit the driving test. These special rules may apply for a period of 1-2 years after they have been issued with a driver's licence, but both the rules and the period vary from country to country. There is, however, a growing trend for these kinds of rules and conditions for novice drivers to be adopted, including multiphase licensing systems (GDL) in North America and Europe (Audrey & Langford, 2014).

The literature search has found a few publications in the transport research area which emphasise that the social and economic cost should be taken into account in these studies. In this connection, it is stressed that there is a need to investigate whether such special rules and conditions would have a negative impact on the young people's opportunities for applying for jobs, finding work and remaining employed; young people who by their age have a vulnerable position on the labour market (Males, 2009). In studies relating to welfare research, particularly those where young people answer questions about opportunities and problems of finding a job, show that it is relatively common for employers to demand full-status driver's licences. This makes it more difficult to gain a foothold in the labour market and causes a delay for young people who do not continue their studies and who have a greater need for a driver's licence for work reasons (Audrey & Langford, 2014).

3.8 Concluding discussion

The research reviewed in this chapter shows a clear link between driver's licence holding, access to cars and gainful employment. This particularly relates to young people who do not go on to higher education but who look for work immediately after leaving compulsory or upper-secondary education. A driver's licence acts both as a qualification which makes the holder more employable, and also facilitates (formally) the use of a car in applying for work and remaining employed. Research indicates that the labour market for young people, with respect to jobs requiring low qualifications, has changed in a way which has increased this group's dependence on driver's licences and access to cars in applying for jobs and remaining employed. Competition for jobs of this type has also increased, and employers appear to be using driver's licence holding as a first selection criterion for screening large numbers of job applicants.

One exposed group is young people from households without the financial resources to allow them to obtain a driver's licence and use a car. They live in geographical locations (suburban, peri-urban and rural areas) with limited local job opportunities and limited

public transport services to a geographically larger labour market. The fall in the number of local industrial jobs and a growing, geographically more dispersed private service sector are therefore, having a real impact on young men without driver's licences and cars. For young mothers and single mothers in particular, a combination of parenthood and ineffective public transport services makes it difficult to access a larger labour market without a driver's licence and a car. A particularly vulnerable group is young people with various forms of disabilities which make it difficult for them to obtain a driver's licence and use a car. The growth in jobs for young people in the form of temporary employment, temping pools, employment through staffing agencies and out-of-hours cover requires increased time-and-space flexibility which public transport services have difficulty in matching.

Most of the reviewed research consists of case studies. On the basis of these studies, it is difficult to conclude how large this group of young people exposed to transport-related problems is. Driver licensing levels rise with educational achievement while, simultaneously, the reviewed research indicates that driver's licence holding appears to be more important to those with lower education levels when it comes to applying for jobs, finding work and remaining employed. More research into this area is required to determine the significance of driver's licence holding and car access to different groups of young people, also more affluent groups.

4 Changes in driver's licence holding, car ownership and use

4.1 Introduction

This chapter looks at the state of international knowledge on the links between changes in driver licensing and falling car usage among young people. The chapter is short as very few studies have been found that have looked in greater detail at such links. It starts with a description of the research field to which these studies belong and then continues with a presentation of key research findings. The chapter concludes with a brief summary discussion.

4.2 Data & Method

Information retrieval was made by search in metadata, with hits for search words in titles, references and specified subject words for publications. The search was carried out by information specialists at the library and information centre, BIC, at VTI. The following databases were searched:

- The national library catalogue VTI <http://www.transguide.org/search/index.asp>
- TRID <http://www.trid.trb.org>
- Scopus <http://www.elsevier.com/online-tools/scopus>
- Web of Science <http://thomsonreuters.com/thomson-reuters-web-of-science/>

The search covered literature from 1990 onwards, and the following search words (including different spellings/synonyms) were used:

- Driver license, young, future, car ownership, car use, prognos*, forecast*, predict*, „future, zukunft*, trend, trends, time serie*, next generat*, new generat*, young generat*, scenario*

This search resulted in 19 hits, of which 15 were deemed relevant.

4.3 Overview of the research field

The studies reviewed in this chapter stem from an area of transport research which looks into the phenomenon of the stagnating and, in some cases, falling use of car travel which emerged at an aggregated level in many industrialised countries during the first ten years of the 21st century in particular. Most of the research has involved quantitative longitudinal studies based on national and international data. Falling car usage, primarily among young people, explains a significant part of the trend noticed at a national, aggregated level. As a result, this research is taking an increasing interest in young people.

Empirical studies in this area focus on one or more types of changes in car travel: car availability, distances travelled, and car modal share. The studies indicate different trends with respect to age, gender, life phase, socio-economic situation and geography, also the extent to which reduced car travel is explained by falling car ownership levels and shorter car journeys, as well as whether these changes are linked to a rise in intermodal travel among young people (Grimal et al., 2013; Kuhnimhof et al., 2012, 2013; Thakuriah et al., 2012). Studies within this field of research show that economic factors explain most of the stagnation/decline in car usage observed, but not completely, giving rise to many other factors being examined.

Most of the studies reviewed refer to reduced/postponed driver licensing as an important indicator of reduced car ownership and use among young people, but such

connections are not further investigated in the analysis. In the next section we review the small number of studies which have looked in greater detail at links between driver licensing and car usage, and contextualise these findings in the wider field of research into falling levels of car ownership and use among young people.

4.4 Driver's licence, car availability and use

In a German longitudinal study by Bohnet and Carsten (2010), changes in car and licence availability were analyzed based on panel data with observations over a period of 25 years. The aim of the study was to investigate changes in car and licence availability during the different stages of the life course and to investigate the effects of accessibility on the decisions if and when to obtain a driver's licence and to acquire or to dispose of a vehicle. The findings showed that competitive regional accessibility by public transport, higher-density housing, and good local accessibility to shops and services within walking distance encouraged young people to postpone the decision to obtain a driver's licence and to reduce the probability of acquiring a car over the life course – even among those with good incomes. However, economic factors had a greater impact on licence and car availability than these contextual factors.

In a UK study by Stokes (2013), using a model based on age cohorts and a range of age related features, it was observed that the age at which a person gains a driver's licence has an effect on the distance they drive. The older persons are when they learn to drive, the lower the distance recorded, which even seems to persist as the young people get older. Suggested explanations given in this study for these findings include the effect of a keenness to learn when young, a relatively rapid fall off in confidence in driving according to the age of learning, or learning at a young age being related to more necessity to drive.

In a US study by Taylor et al. (2013), using multivariate methods, the extent to which three societal changes have affected car usage were investigated: a) higher unemployment rates (b) use of information and communication technologies and c) more stringent graduated driver licensing (GDL) regulations. Nationwide personal mobility trends, measured as person-miles of travel (PMT), between 1990 and 2009 were used. Three age groups were compared: teens, young adults and adults. One of the most significant findings of the multivariate analysis was how similar key determinants were for the three age groups. Employment, car access and being a driver were all positively associated with PMT across all age categories and survey years. The effects of ICTs and GDLs were surprisingly muted.

Findings from these studies indicate that declining licensing follows the patterns identified with respect to reduced car ownership and car use among younger age groups in the wider field of research in focus in this chapter. Driver licensing, like car ownership/car usage, appears to be falling among young people on low incomes, and, irrespective of income levels, among young people living in urban areas with high density, land use mix and access to good public transport services. In studies where different factors are checked, it appears that financial factors are the main explanation for the fall in car ownership and usage, and the same appears to apply to driver licensing. More studies are, however, necessary to confirm this pattern. Only one study looking at a disconnection between driver licensing and car usage has been identified (Stokes, 2013). It is clear that current research into changes in car ownership and car usage among young people does not regard driver licensing as a central issue for examination.

5 Concluding discussion

In this knowledge review, we have looked at the situation as regards knowledge of what can explain and influence the driver licensing trend among young people in different age groups, socio-economic groups and geographical areas. We have also looked at the situation as regards knowledge of the link between driver's licence holding and welfare among young people, as well as any links between the current decline in driver licensing and falling car ownership and use. As is shown in the review of the literature, several factors appear to explain and influence the driver licensing trend among young people, while, at the same time, there is a great difference in driver's licence holding among different groups of young people. As with the phenomenon of falling car usage among young people, there is a need to investigate the extent to which the declining licence holding rates are a general dynamic pattern and/or if they are the result of opposite trends between different socio-economic and socio-demographic groups, interplaying with geographical contexts, or even a structural effect caused by changing weights of those different groups over time (Grimal et al., 2013).

There is much to suggest that declining licence rates can be explained by lifestyle trends, primarily those associated with young people relocating to major towns and cities to access higher education. Extended time spent as a student and low earnings while studying, in combination with good public transport in these urban areas which make access to a car unnecessary, appear to be important reasons for declining licensing rates in this group. More research is, however, required to establish how widespread the preference for an urban lifestyle is among young people, as well as whether there is a "realisation gap" and, if so, how big this is. As a result of the car-focused planning which has been going on for a very long time, many homes and workplaces are now situated in suburban and peri-urban locations. The cost of living in urban areas is currently high and choice is limited. It may well be that the present figures for declining licensing rates among young people are an indication of a significantly greater, latent demand for an urban lifestyle and an adjacent potential of reducing car ownership and use in the future.

Our review shows that financial factors are important explanations for a decline in licensing rates, as well as for a drop in car ownership and usage among young people of disadvantage. There is an ongoing discussion in the literature on what the long-term implications of this may be. To what extent could any upswing in the economy and fall in unemployment result in an increase in driver licensing, car ownership and usage among this age group? To what extent has the long period of financial uncertainty for young people (which has extended across economic cycles) resulted in the emergence of permanent car-free lifestyles? Research into the relationship between driver's licence holding, work and welfare suggests a rise in driver licensing during upturns in the economic cycle among the groups which are presently disadvantaged in the labour market due to not holding a driver's licence. This relates to young people from financially weak households, who do not go on to higher education and live in suburban or peri-urban areas with limited access to local jobs and a shortage of public transport options. More research is required to determine how large this group is.

On the basis of current research results and level of knowledge, it is difficult to reach any conclusions on how the current trends of declining licensing rates, car ownership and car usage among young people will develop in the long term. The research does, however, suggest that changing urban land use and transport infrastructure planning, which reduce car reliance for all groups of young people, may result in these trends

continuing and possibly becoming stronger, even if the economy picks up and youth unemployment falls.

6 Sammanfattad rapport på svenska

6.1 Förord

VTI och TØI har fått i uppdrag att ta fram en kunskapsöversikt kring vad som förklarar och påverkar utvecklingen av körkortsinnehavet bland unga i olika åldrar, olika geografiska kontexter och från olika socioekonomiska förhållanden, samt konsekvenser för ungas välfärd av att ha och inte ha körkort. Kunskapsöversikten behandlar också trender och prognoser för framtida körkortsinnehav bland dem som idag är unga, förhållanden mellan minskat körkortsinnehav, bilägande och bilanvändning samt eventuell frikoppling mellan körkortsinnehav och bilanvändning.

Uppdraget att ta fram denna kunskapsöversikt speglar ett ökat nationellt och internationellt intresse för att studera det minskade körkortstagandet bland unga, vilket har observerats i många OECD länder de senaste decennierna. Övergången till vuxenliv, etablering på arbetsmarknaden och familjebildning, sker för många unga idag först i 30-årsåldern. Det finns mycket som tyder på att ungas uppskjutande av körkortstagandet sammanhänger med att ungdomsfasen har blivit längre. Huruvida den trenden kommer att fortsätta även för de senaste kohorterna av den uppväxande generationen är intressant att belysa.

Bisek har bedömt att förändringar i körkortsinnehav bland unga är en intressant och viktig faktor när det gäller att förstå och förklara bilens framtida roll i ett hållbart transportsystem. Bisek är ett samarbete mellan Trafikverket i Sverige, Statens vegvesen i Norge, VINNOVA, Transportstyrelsen, Trafikanalys, Motororganisationernas Samarbetskommitté i Sverige MOSK (OK Bilisterna, Motormännen M, FMK, Kungliga Automobilklubben KAK, och Motorförarnas Hellykterhetsförbund MHF) samt Norges Automobil-Forbund NAF för forskning om bilens sociala och ekonomiska betydelse för hushåll och individer i det moderna samhället.

I rapporten har Åsa Aretun, VTI ansvarat för kapitel ett, tre, fyra och fem. Susanne Nordbakke, TØI har ansvarat för kapitel två. Övriga delar i rapporten har Åsa Aretun haft huvudansvar för.

Tack riktas till Joanna Dickinson, VTI som har granskat rapporten och kommit med värdefulla kommentarer. Ett särskilt tack riktas också till Henrik Swahn som varit vår kontaktperson på Bisek.

6.2 Kapitel 1: Introduktion

Ett centralt tema i denna kunskapsöversikt är de relativt stora skillnader i körkortsinnehav bland olika grupper av unga som förekommer i många länder. Det rör sig om skillnader baserade i ungas ålder, kön, utbildning, socioekonomiska förhållanden, utländsk anknytning och geografisk hemvist; skillnader där dessa faktorer också i hög utsträckning samspelar. I Sverige har cirka 70 procent av unga i åldern 20-29 år körkort, men endast cirka 35 procent av dem som enbart har gått i grundskolan. För kvinnor med eftergymnasial utbildning födda i Sverige är andelen med körkort 80 procent medan andelen är cirka 35 procent för kvinnor födda utomlands med samma utbildningsnivå (Karlsson, 2012). Uppräkningen över skillnader i körkortsinnehav baserade på samspel mellan faktorer skulle kunna göras längre. Vi vill därför redan inledningsvis betona att ungdomar inte utgör någon homogen grupp när det gäller körkortsinnehav. Antaganden om minskat körkortstagande bland unga generellt - såsom det ofta rapporteras i media - behöver nyanseras och problematiseras.

Ett centralt tema i denna kunskapsöversikt är också vilka konsekvenser det medför för ungas välfärd att ha eller inte ha ett körkort. Med välfärd menar vi ungas möjligheter att uppnå goda levnadsförhållanden och att styra sina egna liv när det gäller utbildning, arbete, deltagande i fritidsaktiviteter, sociala nätverk mm. Även i detta sammanhang utgör skillnader mellan unga en viktig utgångspunkt vid läsningen av litteraturen. Vilken betydelse har lågt körkortstagande i yngre ålder för de ungdomar som slutar studera och ska söka arbete efter grundskolan eller gymnasiet i jämförelse med dem som går vidare till högre studier? Vilken betydelse har körkort (och tillgång till bil) för unga på mindre orter och på landsbygden i jämförelse med unga i större städer? Med dessa frågor vill vi inledningsvis rikta uppmärksamhet mot att ett körkort kan betyda olika saker i olika kontexter och för olika grupper av ungdomar.

Syftet med denna kunskapsöversikt är att:

- Undersöka vilka faktorer som påverkar utvecklingen i körkortsinnehav i olika åldersgrupper, socioekonomiska grupper och regionala kontexter. Trender, prognoser och bedömningar om framtida utveckling av körkortsinnehav i dessa grupper utforskas också.
- Undersöka det internationella kunskapsläget kring vilken påverkan på välfärd ett körkort har för olika grupper av ungdomar med avseende på geografiska och socioekonomiska förhållanden, ålder, genus, utländsk bakgrund och funktionsnedsättning.
- Undersöka det internationella kunskapsläget kring potentiella kopplingar mellan minskat körkortsinnehav och minskad bilanvändning bland unga.

I kapitel två studeras litteratur kring vad som förklarar och påverkar utvecklingen av körkortsinnehavet bland unga i olika ålders- och socioekonomiska grupper samt i olika geografiska miljöer; framtida trender och prognoser. I kapitel tre behandlas det internationella kunskapsläget när det gäller körkortsinnehavets välfärdskonsekvenser för olika grupper av unga, där fokus framförallt ligger på kopplingar mellan körkortsinnehav och ungas möjligheter att söka, få och upprätthålla ett arbete. Kapitel fyra behandlar det internationella kunskapsläget vad gäller eventuellt samspel mellan minskat körkortsinnehav, bilägande och bilanvändning bland unga. Slutligen, i kapitel fem, finns en summerande diskussion där behov av fortsatt forskning identifieras.

6.3 Kapitel 2: Utvecklingar i körkortstagande: potentiella förklaringar

Syftet med detta kapitel är 1) att redogöra för litteratur kring vilka faktorer som påverkar utvecklingen av körkortstagande bland unga generellt och inom olika socioekonomiska grupper och i olika geografiska miljöer, samt 2) att redogöra för litteraturen kring trender och prognoser av körkortsinnehavet i framtiden inom dessa grupper. Eftersom merparten av litteraturen har fokus på den generella utvecklingen av körkortstagande/innehav bland unga, och inte i specifika grupper, så begränsas litteraturgenomgången mycket till det första temat. Genomgången behandlar dock delvis potentiella förändringar med avseende på sociodemografiska faktorer och boendets lokalisering.

För att förstå trender i körkortstagande är det viktigt att förstå vad som förklarar körkortsinnehav bland unga vuxna. Baserat på Elsters handlingsteori (1970) samt en grundläggande studie av faktorer som påverkar körkortsinnehav (Andersson & Warmark 1999), behandlas körkortsstagande som ett resultat av både en individs *önskemål* och hans/hennes *möjligheter* att ta körkort. Enligt denna modell kan unga ha

önskemål om att ta körkort men sakna möjligheter och vice versa. En central utgångspunkt är att den ungas *föreställningar* om samt *intresse* av bil/ körkortstagande samt hans/hennes *behov* av bil/körkort (grundat i aktivitets- och resmönster, lokalisering av boendet och andra aktiviteter som arbete och skola) påverkar körkortstagandet.

I ett försök att öka förståelsen av varför unga tar körkort eller inte, genomfördes två olika typer av litteraturgenomgångar: 1) En som gick igenom tvärsnittsstudier kring förhållandet mellan statistiska egenskaper hos unga och körkortsinnehav, och 2) en som gick igenom studier kring förklaringar till varför unga tar körkort eller inte. Den första genomgången pekar på att körkortsinnehav påverkas av socioekonomisk position, livsfas och boendets lokalisering. Dessa resultat indikerar att körkortsinnehav påverkas både av en individs möjligheter och behov. En studie från Sverige visar dessutom att invandrade unga i mindre grad tar körkort än unga födda i Sverige. En möjlig förklaring är lägre inkomster bland invandrade grupper i Sverige än icke-invandrade, även om andra faktorer inte kan bortses från.

Där den första genomgången indikerar att körkortsinnehav varierar utifrån individuella resurser (möjligheter) och behov (föräldraskap, att inte bo inom ett stadsområde), så är den andra genomgången mer uttömmande kring dessa faktorer. Den andra genomgången visar att de primära orsakerna till varför unga inte tar körkort – utifrån ett antal studier – är kopplade till brist på individuella resurser (ekonomiska och tidsmässiga), samt god tillgång till andra transportalternativ (vilket pekar på ett mindre behov av att använda bil). Vidare så visar genomgången kring varför unga inte väljer att ta körkort att de prioriterar andra saker, dvs. att inte ta körkort utgör ett val.

Båda litteraturgenomgångarna pekar på att förklaringar till varför unga har körkort eller inte har körkort, inte kan härledas tillbaka till en faktor. Att ha ett körkort eller inte är ett resultat av både föreställningar, intresse för körkort/bil samt individuella möjlig-heter. För att förstå förändringar i körkortstagande bland unga är det därför viktigt att studera förändringar gällande alla dessa faktorer: föreställningar, intressen, behov och individuella möjligheter. Eftersom merparten av kunskapen om körkortsinnehav är ett resultat av bivariata analyser i Norge och Sverige, finns ett behov av multivariata studier av vilken relativ betydelse olika sociodemografiska karaktäristika har (t ex inkomst, förvärvsarbete-/studentstatus, invandrar-/icke invandrarbakgrund, familjesituation, boendelokalisering) samt värderingar och attityder kring körkortsinnehav bland unga.

Genomgången kring hur körkortsinnehavet bland unga har utvecklats över tid visar att det har minskat i flera länder de senaste decennierna. I Norge och Sverige har detta observerats rörande både kvinnor och män, och såväl i stad som landsbygd, även om nedgången har varit större i städer. Försöken att förklara denna nedgång har ökat i flera länder. Kunskap om vilka faktorer som påverkar körkortsinnehavet utgör en viktig ingång till att utveckla hypoteser kring möjliga förklaringar. De potentiella förklaringar och hypoteser som ges i detta kapitel, baserat på de litteraturgenomgångar som har gjorts kring minskat körkortstagande, kan sammanfattas enligt följande:

- Längre ungdomsperiod (kan mätas genom ålder då kvinnor får sitt första barn, ålder vid giftermål, antal studenter, andel ungdomar som bor kvar hemma).
- Urbanisering bland unga.
- Förbättringar i utbudet av kollektivtrafik.
- Sämre finansiell kapacitet bland unga: ekonomisk recession, fler unga som är studenter, högre kostnader för bil (bränsle, försäkring), högre inköpspris för bil, högre kostnader för körkortsutbildning.
- Befolkningsförändringar: ökad invandrad population (lägre inkomstgrupp).

- Förändringar i körkortsutbildning/mer komplicerad körkortsutbildning.
- Förändringar i tillgång till handledare vid övningskörning.
- Förändringar i föreställningar om och intresse av bil/körkort och i prioriteringar.
- Ökad användning av IKT(information och kommunikationsteknologi)/smarta telefoner (ersätter behovet av att resa/använda bil).

Förklaringarna varierar säkerligen från land till land. I både Sverige och Norge sammanfaller minskat körkortstagande med början av en nedgång i ekonomin. I Sverige började dock nedgången tidigare än i Norge och varade längre, men i båda länderna fortsatte körkortstagandet att sjunka även efter den ekonomiska nedgången. I Norge, således, har den ekonomiska nedgången inte bedömts vara en viktig förklaringsfaktor, men frågan har ställts om inte nedgången kan ha triggat igång en minskning av körkortstagandet (Nordbakke & Ruud, 2006). I Sverige har den ekonomiska nedgångens roll varit föremål för diskussion (Krantz, 1999; Andersson & Warmark, 1999). Forskare i både Sverige och Norge har föreslagit att en ökad urbanisering och andel studerande bland unga är viktiga förklaringar till en minskning i körkortstagandet. I motsats till detta, anses inte urbanisering vara en viktig förklaring i Australien (Delbosc & Currie, 2013).

Det saknas i stort forskning som både mäter körkortsinnehav och hypotetiska orsaker i samma studie, och studier som beräknar effekter av hypotetiska orsaker. För att kunna göra prognoser av framtida trender kring körkortsinnehav, behövs fler nationella studier om vilken betydelse de olika förklaringarna som presenterats ovan, har för minskat körkortstagande.

6.4 Kapitel 3: Unga, körkort, arbete och välfärd

Detta kapitel behandlar det internationella kunskapsläget kring vilken påverkan på välfärd körkortsinnehav har för olika grupper av unga med avseende på kön, ålder, socioekonomi, geografi och funktionsnedsättning. Kapitlet börjar med en genomgång av välfärdsforskning kring människors livsmöjligheter och levnadsförhållanden; ett forskningsfält som merparten av den litteratur som behandlas tillhör. Den centrala välfärdsansatsen inom denna forskning om unga – övergången till ett vuxenliv – samt det centrala temat inom vilket körkort behandlas – inträde på arbetsmarknaden – redogörs för. Därefter presenteras forskningsresultat kring på vilka sätt och varför som körkortsinnehav har betydelse för ungas etablering på arbetsmarknaden, samt vilka grupper av unga som fokuseras i denna forskning.

Majoriteten forskning som går igenom utgörs av fallstudier av utsatta grupper av unga. Några studier presenteras mer utförligt i syfte att ge en bättre bild av detta forskningsfält, och de komplexa och kontextuella analyser som ofta utmärker fallstudiedesignen. Studierna har också valts ut eftersom de representerar viktiga resultat och frågeställningar kring förhållanden mellan körkortsinnehav och ungas möjligheter att etablera sig på arbetsmarknaden.

De studier som har gått igenom visar på tydliga samband mellan körkortsinnehav, tillgång till bil och förvärvsarbete. Resultaten rör unga som inte går vidare till högre utbildning, utan söker arbete direkt efter grundskolan eller gymnasiet. Körkortsinnehav fungerar både som en kvalifikation som ökar anställningsbarheten, och möjliggör (formellt) användandet av bil för att söka och upprätthålla ett arbete. Forskningen pekar på att arbetsmarknaden för unga, rörande okvalificerade arbeten, har förändrats på ett sätt som gör denna grupp av unga mer beroende av ett körkort och tillgång till bil för att kunna söka och upprätthålla ett arbete. Konkurrensen om ungdomsjobb har också ökat,

och där arbetsgivare tycks använda körkortsinnehav som ett första urvalskriterium för att sälla bland många arbetssökande.

Utsatta grupper av unga tillhör hushåll där det saknas ekonomiska resurser för att de ska kunna ta körkort och använda bil. De bor i geografiska kontexter (sub- och peri-urbana områden, småorter och landsbygd) med begränsade arbetstillfällen lokalt, och med begränsad kollektivtrafikförsörjning till en geografiskt större arbetsmarknad. Minskat antal industriarbeten lokalt och en växande privat servicesektor med mer utspridd lokalisering, drabbar framförallt unga män utan tillgång till körkort och bil. Bland unga kvinnor, framförallt mödrar och ensamstående, är det i högre grad föräldraskap i kombination med ineffektiv kollektivtrafik, som gör det svårt att utan körkort och tillgång till bil få tillgång till en större arbetsmarknad. En särskilt utsatt grupp utgörs av unga som på grund av funktionsnedsättning har svårt att ta körkort och använda bil. Framväxten av ungdomsjobb bestående av många tillfälliga anställningar, vikariepooler, anställningar via bemanningsföretag, arbetstidsförläggning utanför kontorstid, kräver en ökad tidsmässig och rumslig flexibilitet som kollektivtrafiken har svårt att matcha.

Från de genomgångna studierna är det svårt att dra slutsatser kring hur stor den transportrelaterade utsatta gruppen av unga är. Körkortsinnehavet ökar med utbildningsnivå, samtidigt som dessa studier pekar på att körkort tycks vara viktigare för lägre utbildade när det gäller att söka, få och upprätthålla ett arbete. Det behövs mer forskning på detta område som klarlägger betydelsen av körkort och tillgång till bil för olika grupper av unga, även de mer resursstarka.

6.5 Kapitel 4: Förändringar i körkortstagande, bilinnehav och bilanvändning

I detta kapitel görs en genomgång av forskning som studerar samspel mellan förändrat körkortstagande bland unga och förändringar i bilanvändning och bilinnehav. Kapitlet är kort eftersom få studier inom detta område har hittats. Kapitlet redogör övergripande för det forskningsfält som aktuella studier tillhör såväl som centrala forskningsresultat.

Aktuella studier tillhör transportforskning som utforskar fenomenet med stagnerad och i vissa fall minskat bilresande som har visat sig på aggregerad nivå i många industrialiserade länder under framförallt 2000-talet. Merparten av forskningen består av kvantitativa longitudinella studier baserade på nationell och internationell data. Minskad bilanvändning bland unga förklarar en betydande del av den trend som kan ses på nationell, aggregerad nivå. Intresset inom denna forskning har därför börjat växa för att studera just unga.

Empiriska studier inom detta fält fokuserar på en eller flera typer av förändringar i bilresande: tillgång till bil, reslängder och färdmedelsfördelning. Studierna behandlar olika tendenser med avseende på ålder, kön, livsfas, socioekonomi, geografi, samt i vilken utsträckning minskat bilresande förklaras av minskat bilinnehav, minskade reslängder med bil och huruvida dessa förändringar är kopplade till ett ökat intermodalt resande bland unga. Forskning inom detta fält visar att ekonomiska faktorer förklarar merparten av det minskade bilresandet, men inte helt, vilket medför att betydligt fler faktorer undersöks. I många studier hänvisas till minskat/uppskjutet körkortstagande, som en viktig indikator på minskad bilanvändning bland unga, men som sedan inte analyseras vidare.

De studier som mer ingående behandlar samspel mellan förändringar av körkortstagande och bilanvändning visar att minskat körkortstagande följer de mönster kring

minskad bilanvändning som har visats i den vidare forskningen. Körkortsinnehav, i likhet med bilanvändning, minskar bland unga med lägre inkomster och bland unga som bor i stadsområden med hög densitet, funktionsblandning och gott kollektivtrafik-utbud. Fler studier behövs dock för att belägga detta mönster. Endast en studie har identifierat som behandlar och visar på en ökad frikoppling mellan körkortsinnehav och bilanvändning bland unga. Sammanfattningsvis kan dock konstateras att i nuvarande forskning kring förändringar i bilanvändning bland unga så är inte körkortstagande någon central fråga.

6.6 Kapitel 5: Summerande diskussion

I denna kunskapsöversikt har vi behandlat kunskapsläget kring vad som förklarar och påverkar utvecklingen av körkortsinnehavet bland unga i olika åldersgrupper, socioekonomiska grupper och geografiska kontexter. Vi har också behandlat kunskapsläget vad gäller förhållandet mellan körkortsinnehav och ungas välfärd, samt förhållandet mellan minskat körkortsinnehav och minskad bilanvändning. Som framgår av litteraturgenomgången är det flera faktorer som förklarar och påverkar utvecklingen av körkortsinnehavet bland unga samtidigt som det råder stora skillnader i körkortsinnehav mellan olika grupper. I likhet med fenomenet om minskad bilanvändning bland unga finns ett behov av forskning som tittar närmare på i vilken utsträckning minskat körkortstagande är ett generellt mönster och/eller ett resultat av olika trender bland olika grupper av unga med avseende på olika faktorer såsom socioekonomi och geografi, samt hur storleken på dessa grupper av unga förändrats över tid (Grimal et al., 2013).

Det finns mycket som talar för att minskat körkortstagande som kan förklaras av livsstiltrender framförallt är kopplade till de unga som söker sig till större städer för att genomgå högre utbildning. Förlängd studieperiod och låg inkomst under studietiden i kombination med god kollektivtrafik som gör tillgång till bil onödig, tycks vara viktiga anledningar till minskat körkortstagande inom denna grupp. Det behövs dock mer forskning kring hur utbredd preferensen för en urban livsstil är bland unga samt huruvida ett ”realiseringsgap” existerar och i så fall hur stort det är. Merparten av bostäder och arbetsplatser är idag lokaliserade i sub- och peri-urbana områden kopplat till en bilorienterad planering som pågått under lång tid. Kostnader för ett boende i urbana områden är idag höga och utbudet är begränsat. Det kan mycket väl vara så att minskat körkortstagande bland unga, indikerar en betydligt större latent efterfrågan på en urban livsstil och därmed en större potential för minskat bilinnehav och bilanvändning i framtiden.

Litteraturgenomgången visar att för utsatta grupper av unga så har ekonomiska faktorer stort förklaringsvärde för minskat körkortsinnehav, men också för bilinnehav och bilanvändning. I litteraturen förs en diskussion kring vad detta kan innebära på längre sikt. I vilken utsträckning kommer en eventuell ekonomisk uppgång och minskad ungdomsarbetslöshet leda till att unga ökar sitt körkortstagande, bilinnehav och bilanvändning? I vilken utsträckning har den långa perioden av ekonomiska svårigheter för unga (som sträcker sig över konjunkturcykler) lett till utvecklingen av bilfria livsstilar som permanentats? Forskningen kring förhållandet mellan körkortsinnehav, arbete och välfärd pekar mot ökat körkortstagande vid förbättrad ekonomi bland de grupper som idag drabbas negativt på arbetsmarknaden av att inte ha ett körkort. Det rör sig om unga som tillhör ekonomiskt svaga hushåll, som inte går vidare till högre studier och som bor i sub- och peri-urbana områden med begränsad tillgång till arbetstillfällen lokalt och bristande utbud av kollektivtrafik. Det behövs mer forskning kring hur stor denna grupp är.

Det är svårt att på basis av nuvarande forskningsresultat och kunskapsläge dra några slutsatser kring hur pågående trender kring minskat körkortsinnehav, bilinnehav och bilanvändning bland unga kommer att utvecklas på längre sikt. Forskningen pekar dock på att förändrad markanvändning och en transportinfrastruktur som minskar bilberoendet kan leda till att dessa trender håller i sig, och kanske också förstärks, även om ekonomin förbättras och ungdomsarbetslösheten minskar.

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