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Change in climate behaviour after life events

A study on Austrian school graduates

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Declaration of authorship

I hereby declare that the thesis has been composed by myself and that the work has not been submitted for any other degree or professional qualification. My contribution and those of the other authors to this work have been explicitly indicated below. Where I have consulted the work of others, this is always clearly stated.

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Abstract

The present thesis deals with climate behavioural changes of adolescents after school graduation. To reach the Paris climate target, more ecologically sustainable lifestyles and therefore, substantial changes in consumption patterns of individuals, are necessary.

The aim of the research is to find out what behavioural changes the young people have experienced after leaving school and whether these are related to each other. It then investigates whether behavioural changes are associated with specific life events or the degree of experienced upheaval during the formative biographical phase after school graduation.

To answer the research questions, a longitudinal study was conducted in which 136 adolescents were interviewed about their climate behaviour before and after school graduation.

The results show that there was a reduction in car driving and public transport use, and an increase in cycling and walking. In addition, after graduating, adolescents started to repair more of their clothes/devices and to shop second-hand.

Another finding is that young people did not consistently start to behave in a more climate-friendly way across several areas.

In addition, car use was found to be most strongly influenced by life events. Relocation, change in relationship and change in education led to a decrease in driving, and military service and community service/volunteering led to an increase in driving. Furthermore, significant influences on motorcycle riding, cycling, walking, and consumer goods were identified. The survey respondents perceive change in education and relocation as the two most influential life events.

Moreover, the degree of upheaval was related to behavioural change. The more life events experienced, the greater the reduction in driving. Furthermore, the greater the perceived upheaval, the more they started to walk and the less they consumed regional and seasonal food.

Keywords: behavioural change after life events, sustainable lifestyle shift, habit and climate change, breaking habits

Zusammenfassung

Die vorliegende Arbeit befasst sich mit klimabezogenen Verhaltensänderungen von Jugendlichen nach dem Schulabschluss. Um das Pariser Klimaziel zu erreichen, sind ökologisch nachhaltigere Lebensstile und damit wesentliche Änderungen im Konsumverhalten von Privatpersonen notwendig.

Ziel der Forschung ist es, herauszufinden, welche Verhaltensänderungen die Jugendlichen nach dem Schulabschluss erlebt haben und ob diese in Zusammenhang stehen. Außerdem wird untersucht, ob die Verhaltensänderungen mit bestimmten Lebensereignissen oder dem Grad des erlebten Umbruchs in der prägenden biographischen Phase nach dem Schulabschluss zusammenhängen.

Zur Beantwortung der Forschungsfragen wurde eine Längsschnittstudie durchgeführt, in der 136 junge Menschen zu ihrem Klimaverhalten vor und nach dem Schulabschluss befragt wurden.

Die Ergebnisse zeigen, dass das Autofahren und die Nutzung öffentlicher Verkehrsmittel zurückgingen und das Radfahren und Zufußgehen zunahmen. Darüber hinaus begannen die Jugendlichen nach dem Schulabschluss, ihre Kleidung/Geräte öfter zu reparieren und Second-Hand einzukaufen.

Ein weiteres Ergebnis ist, dass die jungen Menschen nicht über mehrere Bereiche hinweg klimafreundlichere Verhaltensänderungen erlebten.

Außerdem wurde festgestellt, dass die Autonutzung am stärksten durch Lebensereignisse beeinflusst wird. Umzug, Änderung des Beziehungsstatus und Start einer Ausbildung führten zu einem Rückgang des Autofahrens, während Wehr- und Zivildienst/Freiwilligenarbeit zu einem Anstieg des Autofahrens führte. Darüber hinaus wurden signifikante Einflüsse auf das Motorradfahren, Radfahren, Zufußgehen und Konsumgüter festgestellt. Die beiden einflussreichsten Lebensereignisse sind der Umfrage zufolge Start einer Ausbildung und ein Umzug.

Darüber hinaus wurde der Grad des Umbruchs mit der erlebten Verhaltensänderung in Verbindung gebracht. Je mehr Lebensereignisse eintraten, desto größer war der Reduktion des Autofahrens. Je größer der wahrgenommene Umbruch war, desto mehr gingen die Jugendlichen zu Fuß und desto weniger konsumierten sie regionale und saisonale Lebensmittel.

Schlagworte: Verhaltensänderung nach Lebensereignissen, nachhaltige Lebensstiländerung, Gewohnheit und Klimawandel, Gewohnheiten brechen

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1 Introduction

To achieve the Paris climate target, which aims to keep global warming below 2, preferably below plus 1.5 degrees compared to pre-industrial levels, more ecologically sustainable lifestyles are necessary (European commission 2021b). This implies behavioural changes in different areas of consumption in private life.

In this master’s thesis, the consumption behaviour of adolescents was analysed. Young people may be limited in their scope of action by their environment, but they will soon shape tomorrow's society as adult citizens and decision-makers. As important actors, they will decide on sustainability in the modern world.

Life course transitions encourage "moments of change", meaning that in times when people's circumstances change, existing routines and behavioural patterns are weakened or broken, and new habits are more easily formed (Thompson et al. 2011). The year after leaving school is a typical transitional phase in which young people are affected by many different life events in a short period of time. Life events are personal biographical changes such as military or civilian service, moving to a different flat or city, starting a degree programme or starting a regular job. These turning points in a young person's biography can lead to fundamental reflection on one's own behaviour and encourage the revision and adjustment of established behavioural patterns.

The master's thesis is written in cooperation with Joanneum Research Forschungsgesellschaft mbH and is part of the project “Spillover effects: Understanding and empowering spillover behaviour for low carbon consumption among young Austrians” which runs from September 2019 to February 2022. In this project, young Austrians are accompanied in the constitutive biographical phase before and after their final year of school and detailed longitudinal data is collected on how their consumption activities and preferences evolve. The thesis deals with climate-related behavioural changes after school graduation in the consumption domains mobility, alimentation, consumer goods and waste.

1.1 Problem

While the influences of life events on mobility are already well researched, there is hardly any scientific basis regarding the other three investigated domains alimentation, consumer goods and waste. Particularly, the target group of the survey, school graduates, is hardly ever examined in studies. For this reason, the aim of this work is to close research gaps in the field of how an upheaval in life interferes with climate behaviour patterns of adolescents.

1.2 Questions and goals

The main goal of this master’s thesis is to find out whether the formative biographical phase after school graduation promotes behavioural changes in consumption among young people.

The subgoals are:

- To analyse life events of young people within the year after leaving school
- To find out what behavioural changes young people experience after leaving school
- To examine whether behavioural changes in mobility are related to behavioural changes in other areas, to find out whether people consistently behave in a more climate-friendly way after leaving school
- To investigate which life events individually lead to behaviour change
- To define indicators that describe the depth of biographical upheaval
- To analyse whether the depth of the upheaval experienced is related to changes in behaviour

The research questions are:

- How does the consumption behaviour of young people change within the year after leaving school?
- To what extent are behavioural changes in mobility patterns related to behavioural changes in other consumption domains?
- Do life events after school graduation promote climate friendly behavioural changes in consumption domains?
- Does the degree of upheaval after life events promote behavioural changes in consumption domains?

1.3 Structure of the thesis

In chapter 2 “Behavioural change” the previously defined consumption domains, which are analysed in the thesis, are described. The investigated domains "mobility", "alimentation", "consumer goods" and "waste" are explained. This is followed by the moments of change theory where theoretical information about habitual behaviour and the transtheoretical model as a concept for describing, explaining, predicting, and influencing intentional behaviour changes is given.

The following section (chapter 3) deals with the current state of research in relation to the relationship between changes in behaviour and life events. The already examined correlations are presented and research gaps are demonstrated.

Subsequently, in chapter 4 the method of the survey is explained, and the questionnaire is described. Furthermore, the statistical analyses used for the evaluation are explained here.

Chapter 5 is the heart of the thesis, in which the results of the conducted longitudinal survey are outlined, and the research questions are answered. This is followed (chapter 6) by a discussion of the results. Subsequently, chapter 7, contains a comprehensive summary of the most important findings obtained in the course of the thesis.

1.4 Methodology

To answer the research question, literature research was conducted, as well as a comprehensive longitudinal study was carried out.

In the beginning, a pragmatic and heuristic searching strategy was applied.

Literature databases like particularly the searching machines “Google Scholar” and “Worldwidescience” were used to identify relevant sources by inquiring every scientific work which was quoted there. The so-called pyramid scheme is a way of quickly opening further topic-related literature. However, the disadvantage of the searching strategy is that only literature that is older than the original source can be recorded. In addition to that, there is a risk of “citation circles” which harbours the risk of gaining a one-sided picture of the research subject as authors who are closely related in terms of content or personally quote each other (Balzert et al. 2008).

Due to the mentioned disadvantages, subsequently a systematic “bottom up” research was used. Specific search terms like the ones presented in the following table (Table 1) were applied.

Table 1: Search terms within systematic literature research source: own representation

Keywords
Habitual behaviour
Habit and life events
Sustainable consumption shifts
Moments of change
Life events after school graduation
Leaving home and behavioural change
Mobility behaviour and life events
Mobility biography

The master's thesis is written in cooperation with Joanneum Research Forschungsgesellschaft mbH. The organisational frame of the survey is the project “Spillover effects: Understanding and empowering spillover behaviour for low carbon consumption among young Austrians” (SPILLOVER). As part of the project, a longitudinal study was carried out in which the same group of young Austrians, more precisely 136 Styrian and Tyrolean adolescents, were asked about their consumption behaviour at two different times, before and after school graduation (spring 2020 and spring 2021). The objective was to find out which life events have an impact on environmentally friendly behaviour, e.g., whether moving house or starting a job or education causes a change in behaviour in the above-mentioned domains.

The data was analysed with the programme "IBM SPSS Statistics". Descriptive analyses, comparisons of means (t-tests) and Pearson correlation analyses were used for evaluation. It was aimed to link the young people's behavioural changes to life events they had experienced and to identify statistically significant correlations. These are presented in the result section of the thesis (chapter 5).

More information on the practical part can be found in chapter 4, where the methodology of the study is explained in more detail.

2 Behavioural change

The Paris Agreement sets out a global framework to combat climate change. Its goal is to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. Within this framework, Austria has committed to reducing its greenhouse gas emissions by 55% by 2030 compared to 1990 (European commission 2021b). By 2040, Austria should be climate neutral, which means reaching a state in which human activities have no impact on the climate system (Umweltbundesamt 2021).

Private individuals make a significant contribution to the total CO_2 emissions in Austria. The satisfaction of consumption and mobility needs has a significant influence on private energy consumption. These climate goals can only be achieved through fundamental and substantial far-reaching transformations in current production and consumption patterns. Not only do environmentally friendly alternatives need to be available, but people need to change their behaviour to reduce their ecological footprint[1].

Behaviour is determined by habits which are automatic programmes that help in daily lives. They are developed through frequent repetition and reinforcement and are links between a stimulus and a response. Since habits are automatic reactions, they usually happen unconsciously, i.e., without additional thinking, which is resource-saving and requires little effort (Wood et al. 2002). However, habits may be disrupted when moments of change such as life events encourage the revision and adjustment of established behavioural patterns.

To a large extent, routines determine not only a person's behaviour, but also thoughts, feelings, and interactions with others.

Following, the investigated consumption domains are described. It is specified which aspects have a climate-damaging effect. Subsequently, it is explained how a conscious, resource-saving and sustainable behaviour in these areas can look like, i.e., which behavioural changes are desirable to enable future generations a worthwhile life.

The next sub-chapter deals with habits and moments of change, as well as the transtheoretical model for behaviour changes.

2.1 Investigated consumption domains

Consumption includes numerous areas: mobility, alimentation, consumer goods, waste, hot water, heating, electricity use, and other consumption domains contribute differently to the personal ecological footprint.

Climate-friendly consumption basically encompasses two dimensions. On the one hand, it is about consuming differently, i.e., switching to more energy-efficient electrical appliances, green electricity, or organic food.

[1] Global Footprint Network (2021): a method to measure human demand on natural capital, i.e., the quantity of nature it takes to support people or an economy (carbon emissions, natural resources, waste, etc.)

On the other hand, consuming less is also essential, such as reducing the consumption of animal products, extending the useful life of electrical appliances, or intensifying their use, for example through car sharing.

In the context of this master's thesis, four domains of consumption were selected to be examined: mobility, food, consumer goods and waste. In the following, each of these four areas will be dealt with individually.

2.1.1 Mobility

The term “mobility” means the physical change in location of a person for the purpose of satisfying needs. Self-determined movements enable people to meet their own requirements while adapting to the environment (Hunecke 2015). Since human needs can not only be reduced to securing biological survival, but are also expressed in a variety of areas of life, e.g., in social coexistence or leisure activities, mobility behaviour fulfils a variety of functions and can take very different forms. Social activities are often spatially separated from one another. Therefore, to satisfy basic human needs and the so-called basic functions of existence, mobility is necessary.

Here, reference can be made to the basic functions of existence, a term which has been coined by the Munich School of Social Geography and captures human necessary activities (Partzsch 1970).

A distinction is made between:

- Living
- Work
- To recover
- Educate yourself
- Participate in traffic
- Live in community
- Supply and disposal (Partzsch 1970)

The chosen modes of transport vary as well as travel needs and living environment from human being to human being. There are various means of transport available to cope with the distance between the starting point and the destination point. These modes of transport can be distinguished in walking, cycling, public transport (bus, tram, subway, train, cable car, plane etc.), motorcycle, private car, taxi, shared mobility, etc. The modes of transport which are based on human physical action such as walking, cycling, skateboarding, roller skates, pedelecs etc. are summarized under the term "active mobility" (VCÖ 2021). Public transport is characterized by being available for the public, typically managed on a schedule, operated on established routes, and charging a posted fee for each trip. Examples are the means of transport bus, tram, subway, train, cable car, ferry, plane etc. (Conserve Energy Future 2020). Following, planes and ferries will be excluded as young people normally do not travel by those transport modes on a regular basis, but because of vacation or recovery reasons. The present work focuses on everyday mobility instead.

Shared mobility stands for a ride sharing service which several people use at the same time or a vehicle that several people use at different times. This includes vehicles such as car, e-scooters, or bicycles.

Depending on how different means of transport are used, a distinction is made between monomodal, multimodal and intermodal mobility. If only one mean of transport (e.g., the car) is used for a single route, it is a monomodal way. Multimodality is characterised by the use of different means of transport depending on the purpose of the journey. A person is therefore multimodal if he or she covers routes with different means of transport within a week, e.g., commuting to work by public transport, walking to friends' houses and using a bicycle for weekly shopping. A special form of multimodal transport is intermodal transport. In passenger transport, this involves a linking of means of transport within a route. This means, for example, that a person first uses a bicycle to get to the bus stop and then travels to work by bus, i.e., uses two means of transport for commuting (VCD 2021). To better illustrate the difference between multimodality and intramodality, a graphic is provided below (see Figure 1).

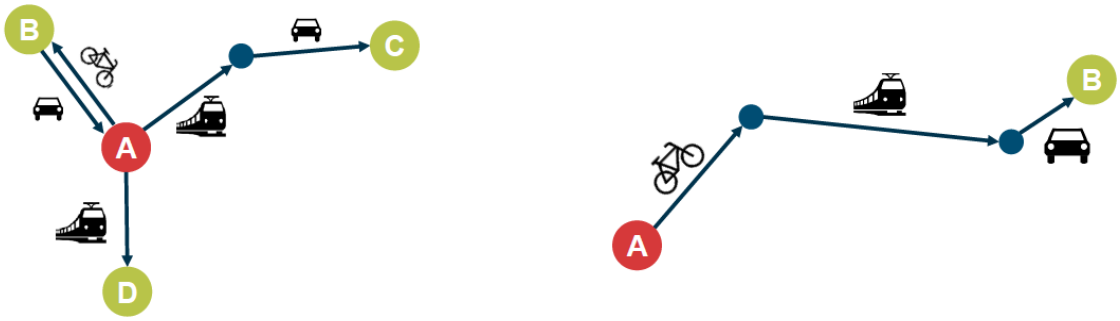

Figure 1: Multimodal mobility (left) vs. intermodal mobility (right)
source: Institut für angewandte Sozialwissenschaften und Innovationszentrum für Mobilität und gesellschaftlichen Wandel 2016

In Austria, mobility is the biggest problem area in terms of climate protection. As illustrated in Figure 2 no other sector has such a sharp increase of climate-damaging CO_2 emissions since 1990 as in transport.

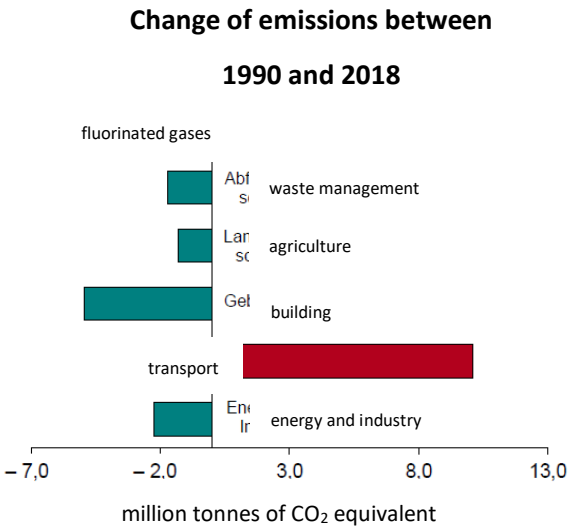

Figure 2: Change of emissions between 1990 and 2018 in million tonnes of CO2 equivalent
source: Umweltbundesamt 2020

The different modes of transport differ greatly in terms of their climate impact. According to the Federal Environment Agency of Austria, a kilometre covered in a diesel or gasoline-powered car is over 27 times more harmful to the climate than a kilometre by train (Umweltbundesamt 2020). This calculation includes both the emissions emitted directly during the journey and the air pollutants that are harmful to the climate during the production of the means of transport. The different occupancy and utilization rates are also considered. The following diagram (Figure 3) shows the CO_2 emissions of the respective means of transport.

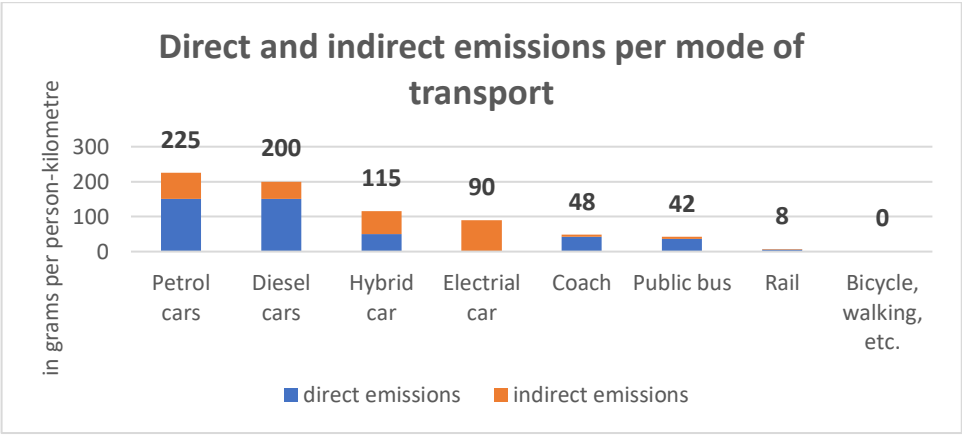

Figure 3: Distribution of emissions per means of transport in grams per person kilometres
source: VCÖ 2018

General possibilities for having a more sustainable and conscious mobility behaviour are:

- Prioritising climate-friendly mobility (public transport, cycling, walking)
- Travelling short distances without a car
- When changing the place of residence, taking into account the future mobility needs and offers
- Driving in a fuel-saving way
- Using carsharing if a car is needed
- Shopping in an environmentally friendly way also means getting to the shop in an environmentally friendly way
- Taking the train instead of the plane
- Not investing in fossil fuel industries

2.1.2 Alimentation

Global meat consumption has more than doubled in the past 20 years, reaching 320 million tonnes in 2018 (GLOBAL 2000 2021). This can be traced back to increasing population and income. However, meat production has an enormous impact on climate, land use, biodiversity, soils, and water.

Compared to other European countries, Austria ranks third after Luxemburg and Spain in terms of meat consumption. In 2019, consumption per capita averaged 94kg, whereas around 63kg were eaten; the remainder were slaughter waste. Of this, pork accounts for more than half (36kg), with chicken in second place at 12kg, followed by beef with 11kg. Sheep and goat (1kg), as well as game meat (1kg) are consumed the least. In total, every Austrian eats more than 70kg of meat, including fish (GLOBAL 2000 2021).

The following chart (Figure 4) shows the frequency of meat consumption by age group and gender. As shown, men usually eat more meat than women. The number of female vegetarians is, therefore, higher than that of male vegetarians.

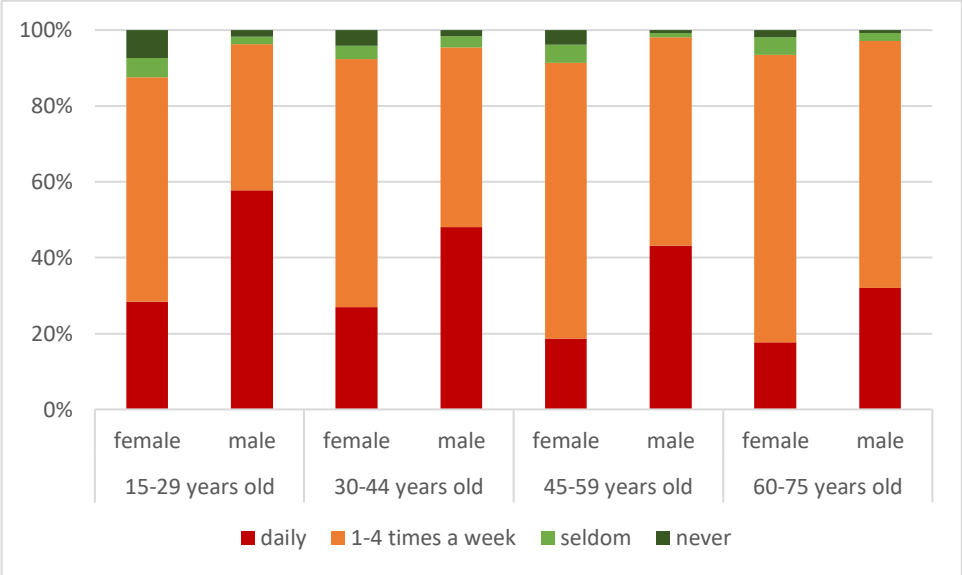

Figure 4: Frequency of meat consumption in Austria by age group and sex source: GLOBAL 2000 2021

In a study, about one third of the Austrians surveyed said they consumed meat at least once a day. Another 40% eat meat three to four times a week (GLOBAL 2000 2021). In contrast, the number of meat servings recommended by the Austrian nutrition society is three times a week as a maximum for health reasons (ÖGE 2020). Eating meat more often is neither a healthy nor a sustainable diet.

While on the one hand nitrogen-containing animal excretions lead to over-fertilization, on the other hand extensive pasture areas are lost and with them numerous animal and plant species that depend on these habitats. The largest share of land is needed not for the animals themselves, but for their feed. Over a third of all crops worldwide end up in the stomachs of farm animals which is a billion tons of soy and corn alone every year (GLOBAL 2000 2021).

Due to that more and more land is needed - with serious impacts on natural habitats. For example, 60 to 75 % of the newly cleared land in the Amazon is due to the creation of pastureland (WWF 2021). In addition to that, there are carbon dioxide and other potent greenhouse gases such as methane and nitrous oxide, which make a massive contribution to the climate change.

Alimentation accounts for around a fifth of greenhouse gasses in Austria. A climate-friendly diet can reduce the emission of greenhouse gases in nutrition by more than half (Stadt Wien 2021).

Eating styles can be distinguished in omnivore, vegetarian and vegan alimentation. The following graph (Figure 5) demonstrates the CO_2 impacts, land usage and water consumption of the mentioned diets. It should be mentioned that the ecological footprint of

omnivorous people depends strongly on how often which animal meat is consumed, as there are large differences. The production of beef releases significantly more CO_2 (13.3kg/1kg beef) than pork and chicken (3.5kg/1kg pork and chicken each) (Janson 2020).

It is visible that in the just mentioned three areas the omnivore diet is much less climate friendly when compared to vegetarian and vegan.

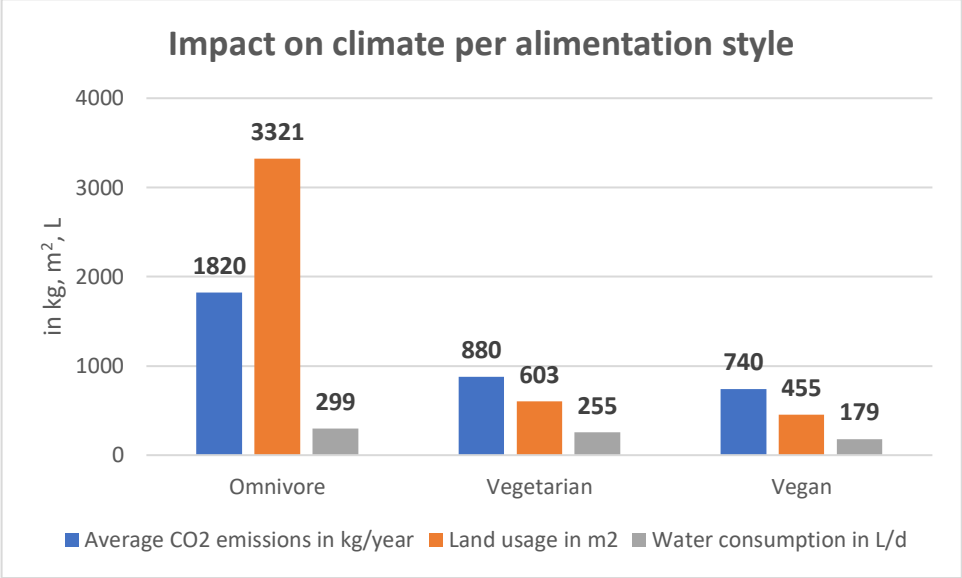

Figure 5: CO_2 emission (in kg/year), land usage (in m^2) and water consumption (in L/day) per alimentation style
source: Scherff 2017[2]; Global 2000 2021b[3]; Albert Schweitzer Stiftung für unsere Mitwelt 2020[4]

Next to the meat consumption, there are several more aspects essential for sustainable nutrition.

Von Koerber and Leitzmann (2012) define the term “sustainable nutrition” by including the following points. Those should be considered when following a resource-conserving and sustainable alimentation:

- Enjoyable and easily digestible foods
- Preferably plant-based foods
- Preferably minimally processed foods
- Organically produced foods
- Regional and seasonal products
- Products with environmentally sound packaging
- Fair-trade products (von Koerber and Leitzmann 2012)

[2] CO_2 emissions
[3] Land usage
[4] Water consumption

2.1.3 Consumer goods

At the current time, material consumption of natural resources is increasing (Sustainable Development Goals 2021). Mankind has overextended its ecological limits for a long time. This especially applies for the industrialized countries and the growing upper and middle classes in many emerging countries.

The “Earth Overshoot Day” marks the day of the year when more resources have been used worldwide than the planet can regenerate in the same year. Until 1970, the global annual resource demand still left reserves. By 2000, all resources for the year had already been used up by 23rd of September. In 2021, however, the Earth overshoot day fell already on 29th of July.

If all people lived the way they do in Austria, the resources would already have been used up on 7th of April (Footprint Network 2021).

The following chart (Figure 6) shows the dates of the Earth Overshoot Days of some countries.

Figure 6: Country Overshoot Days 2021 source: Footprint Network 2021

The change to a society and economy that respects the natural limits of the planet can only succeed if the humans change their consumption habits and production techniques.

Sustainable consumption is part of a sustainable way of life and consumer behaviour. Buying environmentally and socially compatible products can exert influence on global problems to minimize economic, ecological, and social costs.

Nowadays, it is in many cases easier and more economic to get a new product instead of repairing an old one. However, repairing is more environmentally friendly than buying a new product. Repairing avoids waste and conserves raw material and energy resources. Furthermore, repair orders contribute to the preservation of jobs in the region (Umweltberatung 2018).

This can be seen in the fashion industry as well as when looking at electronical devices. In the following, the impact of the frequent acquisition of new consumer goods in relation to the two areas just mentioned will be described in more detail.

The fashion industry can be referred to as “fast fashion”. According to the Cambridge Dictionary, fast fashion means: “clothes that are made and sold cheaply, so that people can buy new clothes often” (Cambridge Dictionary 2021). The term also indicates the poor quality and the associated short shelf life of the cheaply produced items of clothing.

Since 1996, the amount of clothing purchased per person in the EU has increased by 40%, which can be explained by the sharp drop in prices, which also shortens the life span of clothing. Europeans use about 26kg of textiles of which they throw away about 11 kg every year. Used clothes can be exported outside the EU, but mostly (87%) are incinerated or landfilled (European Parliament 2021).

According to Greenpeace (2017), the fast fashion movement causes high resource consumption, difficult working conditions, and increased environmental pollution due to production in low-wage countries.

In addition to relocating production to low-wage countries, the use of polyester as an inexpensive synthetic chemical fibre has also made a significant contribution to drastically reducing the production costs of clothing items (Greenpeace 2017). An overproduction of textiles, the effects on the environment and socially acceptable aspects with a view to the textile value chain are therefore to be expressed as criticism of fast fashion.

The manufacture of clothing currently causes around 10% of global carbon emissions, that are more emissions than maritime shipping and global aviation combined (Greenpeace 2017). According to the European Environment Agency, textile purchases in the EU in 2017 generated about 654kg of CO2 emissions per person (European Parliament 2021). In addition, according to the Federation for Environment and Nature Conservation Germany, a global share of microplastics in the oceans of 35% can be attributed to fast fashion (Greenpeace 2017). The reason for this is the use of polyester as a cheap fiber in the production of textiles. Washing synthetic fabrics releases approximately 0.5 million tonnes of microfibres into the waterways through domestic and indus-

trial wastewater each year. A single wash of polyester clothing can release 700,000 microplastic fibres that can enter the food chain. Textile production is also responsible for about 20% of global water pollution from dyeing and finishing products (European Parliament 2021).

In addition, the water consumption to produce garments is considerable. It takes about 2,700 litres of water to produce a single cotton T-shirt, which would be enough drinking water for one person for 2.5 years. Furthermore, land is needed for the cultivation of cotton and other fibres (European Parliament 2021).

A negative environmentally harmful development in Austria can also be identified regarding the use of electrical appliances. Data from Electrical Equipment Coordination Office Austria (in German: “Elektroaltgeräte Koordinierungsstelle Österreich”) indicate that the number of new electronical devices being put into circulation in Austria is rising. In 2019, the amount of electrical and electronic equipment put on the market in households was around 210,000 tons - this corresponds to around 24kg per Austrian and means an increase of around 2% compared to 2018. These include refrigerators, washing machines, mobile phones, printers, laptops etc. With a collection rate of more than 50% of old electrical appliances in circulation over the past three years, Austria complies with the EU directive, but many appliances still end up in the residual waste without being recycled (BMK 2021b). Every Austrian collect around 9.5kg of waste electrical and electronic equipment per year. On average, about 85% of the electrical appliances handed in at collection points can be recycled (ARA 2021).

According to a study, Austrians buy a new smartphone every 2.7 years on average (BMK 2021a). Technical innovations often tempt to buy new devices even though the previously used device still works perfectly, or to simply replace broken devices instead of repairing them.

However, the manufacture of new devices consumes a lot of resources and usually generates more CO_2 than new, energy-efficient devices save.

With a smartphone, 75% of the CO_2 emissions are generated during manufacture (BMK 2021a). Raw materials for cell phones, computers, etc. such as cobalt, neodymium, tantalum, silver and gold are sometimes mined under dangerous conditions and often in countries without adequate social and environmental standards (BMK 2021a). In addition, old devices are often not properly disposed, especially in developing and emerging countries, and they pollute the environment.

General possibilities for having a more sustainable and conscious consumption behaviour are:

- Care and maintenance of products (maintaining existing fashion, using appliances as long as possible)
- Using long lasting products (buying high quality, sustainably produced clothes, and electronical devices)

- Buying second-hand clothes at flea markets or shops, buying used appliances instead of new ones
- Exchange and sharing products
- Repairing and re-sewing clothes, repairing technical devices
- Properly dispose of appliances that can no longer be repaired
- Upcycling[5]

2.1.4 Waste

Every Austrian generates around 590 kg of municipal waste per year (European commission 2021a).

The directive 2008/98 / EC of 19 November 2008 on waste sets the legal framework for the waste legislation of the member states. The aim of the directive is to "avoid or reduce the harmful effects of the generation and management of waste, reduce the overall impact of resource use and improve the efficiency of resource use" (EUR-Lex 2021). The Waste Framework Directive defines a 5-level hierarchy for the handling of waste, which gives the member states a sequence of priorities for their nationally determined measures. Figure 7 represents the waste hierarchy.

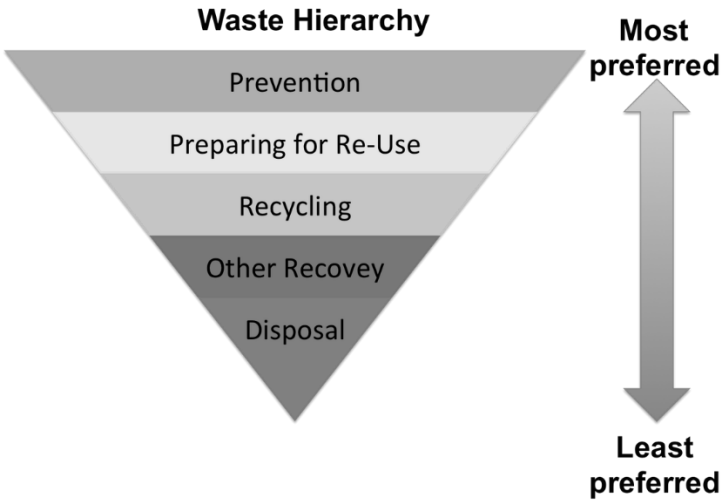

Figure 7: Waste hierarchy
source: Sustainable Sidekicks Consultancy 2019

As shown in the waste hierarchy, the most environmentally friendly way to deal with waste is not to let it arise.

Waste prevention refers to all measures and activities that serve to reduce the amount and increases the quality of generated waste.

[5] Global 2000 (2014): the process of transforming waste products or (seemingly) useless materials into new products

It takes place during the careful planning and design of a product and the selection of pollutant-free materials as well as the recyclability of a product. A distinction is made between quantitative and qualitative avoidance. Quantitative avoidance are all measures that are used to avoid waste completely or partially. The goal of qualitative avoidance, on the other hand, is to improve the quality of waste. Examples of this are circular economy[6] or cradle to cradle[7].

The reuse of products ranks second in the waste hierarchy and generally leads to a reduction in resource and energy consumption compared to manufacturing new products. The preparation for reuse is understood to mean any recovery process such as testing, cleaning or repair, which makes waste products and components of a product functional again.

Recycling is the return of production and consumer waste to the economic cycle. Used materials are industrially recycled either for their original use or for another purpose. In addition to pure material recycling, mixed forms of material and energetic recycling are also possible. Materials such as glass, paper, cardboard, wood, plastics and metals can be recycled and reused for the production of new products. Therefore, they must be collected separately.

Other recovery includes anaerobic digestion, incineration with energy recovery, gasification, and pyrolysis, i.e., thermal waste treatments which produce energy (fuels, heat and power) and materials from waste.

Waste disposal means that waste that cannot be recycled must be treated by biological, thermal, chemical, or physical processes, depending on its nature (Sustainable Sidekicks Consultancy 2019).

The following waste should be collected separately in each household and should not be included in the residual waste:

- Organic waste
- Wastepaper
- Waste glass
- Scrap metals and cans
- Plastic
- Problem substances
- Old clothes
- Styrofoam molded parts
- Waste electrical equipment
- Beverage composite cartons

[6] Ellen MacArthur Foundation (2021): Economic system aimed to eliminating waste and the continual use of resources through e.g. reuse, sharing, refurbishment, recycling etc.; waste should become input for other processes

[7] Ellen MacArthur Foundation (2021): Approach for a continuous and consistent circular economy, Cradle to cradle products can be returned to biological/technical cycles as biological/technical nutrients

To live sustainably in the consumption domain waste, it is advisable to follow the waste hierarchy described above. The focus should be on preventing waste in the first place and on buying as few packaged products as possible. Above all, disposable plastic should be avoided. Packaging-free shopping is made easier in special zero waste shops. As a result, care should always be taken to separate waste conscientiously and to take any hazardous waste to collection points.

2.2 Habitual behaviour and moments of change

Actions that need to be repeated frequently tend to become automatic and are referred to as “habits”. It is not necessary to think concretely about the action, it is made unconsciously and continues past performances (Neal et al. 2006). Through the repeated activation, a mental connection between the context and the reaction is created. Habits determine everyday life, almost a third to half of the daily behaviour patterns are habits that are performed at the same place (Wood et al. 2002). Also, climate behaviour is in many cases characterized by habitual repetition (Verplanken and Whitmarsh 2021).

Advantages of habits are that they are an efficient way to manage daily activities, as they relieve the cognitive systems. They furthermore reduce stress. However, disadvantages of habits are that the repetition of the behaviour may continue, even if the habitual behaviour is no longer the most appropriate (Wood et al. 2002).

It is very difficult to change habits as in many cases people do not even notice that their behaviour in certain aspects might not be, for example, the most climate-friendly one. Furthermore, if habits have already formed, cognitive resources are needed to avoid habitual behaviour and to choose new alternative behaviours. Time pressure, distraction and cognitive effort can reduce cognitive resources. Therefore, if cognitive resources are low, people often fall back into their habits, even if they do not represent the desired and intended behaviour. Stress can increase confidence in habits (Wood et al. 2002).

Moments of change are times in a person´s life where existing habits and behavioural patterns are disrupted. It is a time where new habits are more easily formed. It is a significant opportunity to encourage the take-up of pro-environmental behaviours (Thompson et al. 2011).

2.3 Transtheoretical model

The transtheoretical model of behaviour change (TTM) assesses an individual´s readiness to act on a new behaviour and provides processes of change to guide the individual. The model was originally derived from a comparative analysis of individual change processes (Thompson et al. 2011).

The model is composed of stages, processes and levels of change, self-efficacy[8] and decisional balance. Basically, it is used for behavioural changes in the health sector but can also be transferred to environmentally friendly behavioural changes.

The following graph (Figure 8) demonstrates the circle of how the model works.

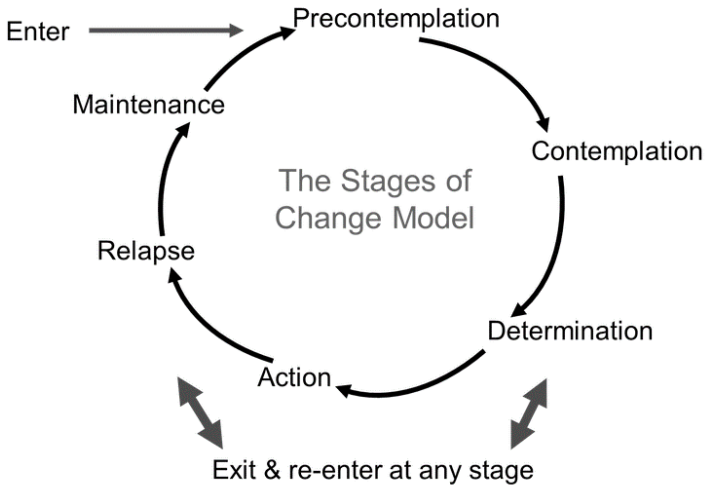

Figure 8: Graphical representation of the stages of Change Model source: Boston University School of Public Health 2016

The transtheoretical model consists of five stages through which people who are successful in changing their behaviour are assumed to pass. The stages reflect the temporal as well as the intentional aspects of change. Therefore, it represents a period of time and a set of needed tasks for moving to the next stage (Prochaska and DiClemente 2005).

- Precontemplation
- Contemplation
- Determination (preparation)
- Action
- Maintenance
- Relapse (Prochaska and DiClemente 2005)

In the “precontemplation” stage an individual is usually unaware that their behaviour is problematic or produces negative consequences. People do not intend to take action in the foreseeable future.

The “contemplation” stage is characterised by initial problem awareness. There is a more thoughtful and practical consideration of the pros and cons of changing the behaviour than in “precontemplation”, where the strong emphasis lies on the cons of behavioural

[8] Hunecke (2015): personal subjective certainty that a person can cope with challenging situations based on the skills they have and the circumstances they face

change. However, even with an equal focus on pros and cons, people still feel ambivalent toward changing their behaviour due to a lack of strategies.

During stage 3 “determination” people decide to take action which is followed by a target definition and action plan. Individuals start to take small steps toward the behavioural change and believe that the change would have a positive effect on their life.

Stage 4 is the “action” phase where the action plan will be implemented. The stage is characterised by feeling of success and acquisition of new competences.

In stage 5 “maintenance", people have sustained their behavioural change for more than 6 months and intend to maintain this change. However, the initial euphoria subsides. In this stage, people work to prevent relapses to earlier stages.

Relapse is another component of the model and part of the change process. It is not a stage but used to describe a return to an earlier stage after having progressed to the action or maintenance stage of change (Prochaska and DiClemente 2005).

In the different stages, different measures are necessary to initiate a change in behaviour. According to the transtheoretical model measures are only effective if they take into account the phase in which the person concerned is in and specific interventions are developed accordingly (Prochaska and DiClemente 2005).

Although this theory comes from the health sector, it can be transferred to environmentally friendly behavioural changes. It has been applied in studies to investigate the stage of change, decisional balance and self-efficacy, with regards to transport mode choice (Friman et al. 2017). In the context of this, motivators and barriers were defined that motivate or discourage people to switch to more environmentally friendly means of transport. This knowledge has been used to develop interventions that address attitudes and misconceptions to encourage increased use of public transport, as well as cycling and walking (Friman et al. 2017). Prochaska and DiClemente (2005) state that their research on the transtheoretical model shows that behaviour change interventions are more effective when they are "stage-matched", i.e., "adapted to each individual's stage of change".

Thompson et al. (2011) link the model to behavioural changes after life events in the study "Moments of change as opportunities for influencing behaviour". As just described, the TTM is a model for intentional behaviour change. It assumes that individuals go through the 5 phases described, which are characterised by different levels of motivation. In the transtheoretical model, there is a basic motivation of the individual to change behaviour, as well as a perception of the problem. According to Thompson et al. (2011), it therefore depends on the degree of motivation to modify behaviour at the point that the moment of change occurs. The different levels of motivation can be assigned to the stages of the TTM. Low motivation corresponds to "precontemplation”, moderate to “contemplation" and high to "preparation". However, the occurrence of a life event does not indicate the degree of motivation to change behaviour in an environmentally conscious way. It is therefore not possible to classify in which phase of the model an individual is

when a moment of change occurs. It cannot be assumed that the life event is responsible for influencing the individual's motivation. A person who is strongly motivated to change a behaviour is therefore more likely to do so in a time of upheaval but would most likely have changed the behaviour at some point anyway (even without the occurrence of a life event). On the other hand, however, a life event can also happen because behaviour is to be consciously changed. For example, people consciously decide to move to a city where cycling is easier or to a passive energy house to reduce their ecological footprint. The extent to which a change in behaviour has been anticipated and planned for is an important element in behaviour modification (Thompson et al. 2011).

3 Life events after school graduation

Life events are relevant personal biographical changes in a person´s life which are temporal or longer lasting. The year after graduation is a typical transition phase in which young people are affected by many different life events in a short period of time.

Key events are important changes in an individual´s life. They are of particular interest as changes in one´s environment and surrounding context weaken routines and this “window of opportunity” makes behavioural change more probable. Life events break routine behaviour and require therefore a certain reorientation.

According to Reifman, Arnett and Colwell (2007) the time of life between 18-25 years can be considered as “emerging adulthood” which is a period where individuals consider themselves as too old to be adolescents and too young for being an adult, being a period characterised by the “age of identity exploration“.

When young people live together with their family, they are more dependent on what they consume, what they buy or how they live. Life events, such as leaving home the first-time lead to many new opportunities. When moving out, people must decide and make new things by and for themselves which have been previously done by parents or guardians. They can develop a set of new habitual behaviour according to their beliefs and values.

For this thesis, 7 life events were identified as key life events after graduation; this set of life was validated in personal interviews with young people as part of the questionnaire pre-test (see section 4.1.2).

The investigated life events are:

- Changes in education status: starting an apprenticeship, training, university, etc.
- Changes in employment: summer job, internship, part-time job, permanent position, etc.
- Residential relocation: moving to another country, region or within the same region; in many cases leaving the parental home
- Military or civilian service/volunteering: For male citizens in Austria there is compulsory military service. They must serve in the Austrian Armed Forces for 6 months or do alternative civilian service, such as nursing, care of the elderly, etc. for 9 months. Female citizens can do this voluntarily. In addition, there is the possibility for all genders to do voluntary work.
- Change of relationship status: separation and/or starting a new relationship
- Long journey: longer stay abroad or travelling
- Serious illness/injury: limitations due to severe disease, illness, accident, or injury

In the following section, the state of research regarding the influence of life events on the four consumption domains is presented. This is followed by a sub-chapter in which the findings are summarised in a table.

3.1 Influence of life events on changes in mobility

Some studies show substantial scientific evidence that changes in mobility practices coincide with key life events.

Beige and Axhausen (2012) found out that turning points in life, such as important personal and familial events as well as changes in residence, employment, and education significantly affect travel behaviour as habits and routines are broken or at least weakened. Therefore, individuals reconsider their behaviour and consciously reflect their decisions. The analysis shows that these life events play an essential role with respect to the ownership of various mobility tools. The authors however emphasized that turning points in life mainly affect young people, as they have less established habits and are therefore easier to influence. The study also shows that leaving home for the first time significantly affects the travel behaviour. The transition from youth to young adulthood is often marked by e.g. buying the first car. A change in residence typically incurs changes in the ownership of mobility tools. Similarly, life events can lead to dramatic changes, e.g. when moving people need to deal with the conditions of the new residence. Residential relocation can require all householder to obtain a driving license if there is not public transport or bicycle connection available. There is also a significante proof that getting a driving licence or buying a car are influencing people´s travel patterns (Beige and Axhausen 2012).

Van der Waerden, Timmermanns and Borgers (2003) investigated which life events can potentially influence the choice of means of transport and identified the acquisition of a driving license, a change of job, the availability of a car and residential relocation as the four most influential ones (Verhoeven et al. 2005).

Harms (2007) shows that a change in relationship or relocation significantly increase the willingness to receive information relevant to transport. People are therefore in times of changes more open for new offers like carsharing or ride sharing (Harms and Lanzendorf 2007).

Rölle, Weber and Bamberg (2003) also show in their study a correlation between a change of residence and an increasing receptivity to information material regarding mobility offers (Bamberg et al. 2003).

Scheiner (2005) examines the extent to which household motorization and the use of transport equipment are related to urban-rural relocations. One of his findings is that owners in many cases search for a residence according to their previous travel behaviour. However, he also found a connection between the number of passenger cars per household and the size of the city/village, spatial structure, location, public transport connection, cycling infrastructure etc. The more remote people live, the worse the public transport connections, the worse the cycling infrastructure etc., the more cars they have (Scheiner 2005).

Klinger and Lanzendorf (2016) analysed the complex interdependencies between residential relocation and daily travel behaviour. The study is based on long distance moving

between the German cities Bremen, Hamburg and the Ruhr area. In the analysis variables that account for urban mobility cultures and control for urban form, residential preferences and sociodemographics are integrated. They found out that changes relating to car and rail-based travel are dependent on local scale, e.g., neighbourhood type and residential preferences. However, cycling is more affected by city-wide attributes like size, spatial structure, relief, infrastructure etc (Klinger and Lanzendorf 2016).

Furthermore, in the study on “Life events as windows of opportunity for changing towards sustainable consumption patterns?” a significant increase of public transport use was determined. This was justified with the fact that people who move look at the infrastructure and better public transport connections might be the reason for moving (Schäfer et al. 2012).

Thompson et al. (2011) found evidence of several effects including increased use of public transport, reduced strength of a car use habit, activation of pro-environmental values leading to a desire to change travel behaviours and, at the group level, reduction in the growth of car ownership.

3.2 Influences of life events on changes in alimentation

Some correlations between life events and changes in behaviour regarding sustainable food consumption were found.

Studies show that changes in nutritional habits after life events are moderated by sociodemographic characteristics. A finding was that the level of education is related to environmentally friendly behaviour. The higher the education level, the more likely people are to purchase sustainable food (Herde and Schäfer 2006; Schäfer et al. 2012).

Herde and Schäfer (2006) investigate how the nutrition behaviour changes in the transition to parenthood. They confirmed the relation between several life events on food consumption behaviour. They also found out that a higher education leads to a stronger emphasis on buying organic, regional and season food. However, the lower the education, the more food that has a negative environmental impact e.g., meat, cold cuts, conserved vegetables etc. is consumed. Additionally, the group of people with a lower education purchases more processed food like cheese, plain yoghurt etc. They also found a relation between change in household composition and alimentation as living with people with a certain diet form can influence oneself. The authors furthermore found significant evidence for a tendency to more healthy and organic food after a serious illness or accident. People are more concerned with the health effects of food on their body and therefore want to eat consciously in order to regain their full strength. Changes in income, however, do not have any impact on preference of a more sustainable diet according to their findings. There were differences in the readiness to pay higher prices which do not show significant evidence. Another result of their study was that the neighbourhood in which participants live has significant impacts on food purchasing habits. People who live in an area with organic food stores, health food stores, or open-air farmers markets

use those facilities with a higher frequency than in other districts. Therefore, the consumption of organic, seasonal and genetically unmodified products increases (Schäfer and Bamberg 2008).

Thompson et al. (2011) shows an evidence for new habits relating to cooking when changing the education status (Thompson et al. 2011).

Brunner et al. (2006) analysed the complex interdependency between a serious illness and changes in sustainable consumption. Severe diseases and health problems, such as neurodermatitis, heart attack, stroke, cancer, diabetes etc. led to changes in alimentation. In the study two categories of diet changes were identified. People who suffered from diseases caused by environmental pollution, started to eat organic food. People who had a health problem which is not caused by the environment, changed to a diet e.g., not eating meat, animal products etc.

The presented studies also linked the life events “transfer to retirement” and “food scandals” with a stronger emphasis on healthy, sustainable food (Schäfer et al. 2017; Brunner 2006). However, as these life events are not investigated in the present study, the findings will be not explained in detail.

3.3 Influences of life events on changes in consumer goods

Thompson et al. (2011) found out that there is often a need to buy new appliances when moving. Additionally, a new shopping behaviour will be developed.

However, result interpretation is difficult as there was no attempt made to assess how their behaviours changed and if it changed negatively or positively.

3.4 Influences of life events on changes in waste

Thompson found little evidence between changes in waste and life events (Thompson et al. 2011).

Furthermore, Yu et al. (2018) investigate which factors influence citizens' behavioural intentions regarding waste separation. In the analysis, it is recognised that waste separation depends on the attitude and subjective norm of the household inhabitants. Thus, there is a connection between household composition and waste (Yu et al. 2018).

3.5 Summary

Due to variations in survey design, sampling, etc. a quantitative summary of previous results is challenging. The direction of the change depends strongly on other factors, such as the type of new residential area in the event of a move, the loss of car availability due to the separation with the partner, etc. For this reason, no positive or negative change is indicated in the following table (Table 2), in which the results are summarised.

Table 2: State of research correlation between life events and investigated consumption domains
source: own representation

	Change in education	Change in employment	Relocation	Military or civilian service/volunteering	Change in relationship	Long journey	Serious illness/injury
Mobility	→→	→→→	→→→→	→	→→	-	→
Alimentation	→→	-	→→	o	→	-	→→
Consumer goods	-	-	→	-	-	-	-
Waste	-	-	→	-	-	-	-

-…not investigated; o…no significant change; →…significant change

As it can be already noticed in the chapter, most research was already done in the domain “mobility”. Studies show that the life event with the greatest impact on travel behaviour is residential relocation as it depends on the density, spatial structure, socio-demographics, regional accessibility etc. how mobility patterns change. In addition to that, some studies also show evidence for a correlation between change in employment and education, as well as change of relationship status and serious illness. The relationship between alimentation and life events is less well studied, but a few papers provide indications of significant evidence there as well. Most of these studies, however, refer to life events such as the birth of a child or retirement, which are not considered in this master's thesis due to the adolescent study population. The life events education, residential relocation, change of relationship and serious illness have a significant influence on dietary behaviour. The consumption domains consumer goods and waste have not been well researched yet. For both domains, only correlations with residential relocation can be found. For this reason, it is interesting to close existing research gaps

in the context of this thesis and to discover possible relations between life events and behaviour in these domains.

4 Methodology of the survey

The upcoming section deals with survey participants and study design, the questionnaire, and the analysis. Furthermore, as due to the Covid-19 crisis some changes have been made, the consequences of the pandemic on the thesis will be pointed out.

4.1 Longitudinal survey conducted by Joanneum Research

The organizational frame of the thesis is the project “Spillover behaviour among young Austrians” conducted by Joanneum Research Forschungsgesellschaft mbH in cooperation with the Department of Geography at the University of Innsbruck. The project is financed by the Austrian Climate and Energy Fund (“Klima- und Energiefonds”) and runs from September 2019 to February 2022. Detailed longitudinal data how the consumption activities and preferences of young Austrians evolve is collected. SPILLOVER investigates how consumption patterns of 17- to 19-year-old Austrians persist, are rearranged, and may be modified during a biographical phase when several life events coincide. The aim of the project is to identify spillover effects between different areas of environmental behaviour. The present master's thesis is written in form of a collaboration with Joanneum Research and the longitudinal survey is used for answering the research questions.

4.1.1 Participants and study design

SPILLOVER is a longitudinal study which accompanies young Austrians in the constitutive phase before, during and after their final schoolyear. The survey is composed of two waves whereas the first one (W1) was completed in spring 2020 (running from February to May 2020). By the time of the second wave (W2) in spring 2021 male participants have concluded their military or civil service and all participants have taken up an educational or occupational path. W2 took place between March and April 2021.

The survey population consists of Styrian and Tyrolean high school graduates from 24 voca-tional or general secondary schools in urban and rural locations.

502 pupils participated in the first wave of the survey. In the second wave, the same people were interviewed again and 136 took part once more. 43% of the respondents who had pro-vided valid contact data in 2020 participated in 2021.

4.1.2 Questionnaire

Since the first wave of SPILLOVER already took place in 2020, only the second wave was carried out as part of this master's thesis, which is why it is explained in more detail below.

The questionnaire consisted of 73 questions. An excerpt of the SPILLOVER survey, which was relevant for the master's thesis, can be found in the appendix. Since the survey was conducted in Austrian schools, it is in German. In the beginning of the survey,

participants are asked about their environmental behaviour which can be divided into the domains:

- Mobility
- Alimentation
- Consumer goods
- Waste
- Heating
- Hot water use
- Electricity use

Subsequently, questions are posed regarding their public engagement, attitudes, opinion and feeling to climate protection. Then, skills regarding climate action are queried and participants are asked for an assessment/estimation of their personal CO_2-footprint in comparison to the footprint one year ago and the average Austrian footprint. The following part deals with experienced life events over the past year. They are asked to describe which life events they had experienced in the last 14 months from March 2020 to April 2021 and how they affected them. Furthermore, they are questioned on the duration of these life events in months.

For the present master's thesis, approximately 40 of the 73 questions are relevant. These are questions regarding the self-reported consumption domains mobility, alimentation, consumer goods and waste. In addition to that, the part about experienced life events is used for the statistical analysis to determine the correlation between life events and behavioural changes. Moreover, questions concerning the socio-demographic factors are necessary to be able to make a clear sample description.

As the aim of the longitudinal survey is a comparison of wave 1 and 2, the items regarding consumption domains were identical in both waves. However, the part relating to the life events needed to be inserted. Through literature research and interviews with graduating students, life events that young people experience after school were identified. This includes, for example, moving house, starting an apprenticeship/study/job. Following, a pre-test with 15 studying colleagues in March 2021 confirmed that the formulated questions are comprehensible and no necessary life events after school are missing. The pre-test participants were asked to think about their school graduation time when answering the questions. According to the pre-test participants, it took an average of 30 minutes to complete the 73 questions of the survey.

4.1.3 Analysis

The programme "IBM SPSS Statistics" was used for the statistical analysis.

The following statistical analyses were applied:

- Descriptive statistics
- Mean comparisons (t-tests of dependent and independent samples)
- Correlation tests (Pearson correlation)

For the presentation of the socio-demographic data of the sample, as well as the distribution of the experienced life events and differences in mobility behaviour, ***descriptive statistics*** were first applied. In this step, a variety of means, standard deviations, frequencies, cross-tabulations, etc. were made to determine the distribution.

Subsequently, ***mean comparisons (t-tests of dependent and independent samples)*** were made. The question to be clarified is whether mean differences observed in the data can be explained by random fluctuations or not. The aim is to find out which changes are statistically significant. When e.g., comparing the behaviour before and after graduation, a t-test of dependent samples is made, since the same persons were interviewed at two different points in time. A t-test of independent samples is used, for example, to find out how much the behavioural changes of all those who have experienced the life event education differ from all those who have not. These are different people, making the samples independent.

As an example of how the t-tests are presented in the results section, there is a table below (Table 3). The results of the t-tests are given with the mean values at time 1 and 2, as well as the difference. In addition, the test variable t and the number of degrees of freedom df. are given.

Table 3: Key figures of the t-test
source: own representation

mean 1	mean 2	mean difference (2-1)	test variable=t (number of degrees of freedom=df.)	p=probability of error

Statistically significant mean changes are marked with asterisks in the column of "mean difference". If a statistical result is described as significant, this means that a measured mean difference between two variables in the sample does not occur by chance, but also applies to the population. In the master's thesis, as is usually the case, the probability of error, also called the significance level, is assumed to be 5% (α=5%) (Backhaus et al. 2016). At a significance level of 0.05 there is a 5% risk of incorrectly concluding that there is a difference between the null hypothesis and the study results. This is shown by the p-value, which indicates the probability of error. In the main part, mean differences with $p \leq 0.01$ are marked with two asterisks (**) and with $p \leq 0.05$ with one asterisk (*). Two-tailed, i.e., undirected hypotheses were tested. This means that it was examined whether the values differ from each other and not whether one group has a higher or lower mean value than the other group as the direction of the result was not known in the beginning. For this reason, all p-values given in the results section are two-tailed p-values.

Another statistical analysis method that was often used in the following is the ***Pearson correlation***, in order to identify correlations between two variables. The results of the Pearson correlation analysis are given with two values: the r and the p-value. R is the Pearson correlation coefficient and p describes, as before with the t-test, the probability of error. The correlation can be described in two dimensions: in terms of direction and in terms of strength. The strength of the correlation is indicated by the correlation coefficient r. This coefficient ranges from -1 to 1, with an amount close to 1 indicating a strong correlation and an amount close to 0 indicating a weak correlation. A positive correlation coefficient indicates a positive correlation. In a positive correlation, one variable increases when the other also increases. An inverse, negative correlation coefficient represents an opposite relationship: the higher the value of one variable, the smaller the value of the other variable. The strength of the correlation is determined by the magnitude of the correlation coefficient. The guidelines of Cohen (2013) (see Table 4) are used for interpretation.

Table 4: Guidelines for the interpretation of the Pearson correlation source: Cohen 2013

weak correlation	$0.1 < r < 0.3$
medium correlation	$0.3 < r < 0.5$
strong correlation	$0.5 < r < 0.9$
very strong correlation	$0.9 < r < 1$

Also in the correlation analysis, as in the t-tests, significant correlations are noted with asterisks. Again, correlations with $p \leq 0.01$ are marked with two asterisks (**) and with $p \leq 0.05$ with one asterisk (*). As with t-tests, Pearson correlation analyses also test undirected hypotheses since the direction of the correlation is not known in advance. The p-values are therefore also two-tailed p-values.

4.2 Adjustment of the method due to Covid-19

The first wave of the survey took place immediately before and partly during the school closures of the first Covid-19 national lockdown in 2020. While most respondents completed the questionnaire in the classroom, 36.5% of first wave participants completed the questionnaire as a homeschooling exercise. Respondents were told to fill out the questions for February 2020, i.e., to think of the time before life was restricted due to the pandemic. However, the sec-ond survey took place after a year of multiple pandemic restrictions. Therefore, the frequency and upheaval of life events may not reflect “normal” biographical change, but may be biased by the pandemic, as the lockdown/curfew minimized mobility, and universities/work often took place online to a large extent. Thus, questions to control for eventual pandemic bias have been added. On the one hand, it

was asked how many days per week people worked / studied from at home. On the other hand, the influence of Covid-19 on decisions relating to life events was also queried.

Due to the ambiguities just described, the topic of the master's thesis was expanded to the extent that, in addition to mobility, the three consumption domains mentioned above were also analysed. Other areas like electricity, heating, etc. are excluded, assuming that decisions such as those regarding meat consumption or waste separation can be made more freely on an individual basis than, for example, electricity (neither in the student dormitory nor in the parental home can this be decided in perfect autonomy). Furthermore, an extension to all areas would go beyond the scope of this thesis. However, as mobility should still be in focus, there is chapter 5.7 in which it is determined to what extent changes in mobility behaviour are related to changes in other areas of consumption.

5 Results of the longitudinal study

The chapter deals with the survey results. At the beginning, the socio-demographic data are described. The life events experienced by the young people are then presented, which is followed by a descriptive representation of the changes in the mobility sector. To classify the depth of the upheaval, three indicators are defined, which are described in the following part.

Consequently, the behaviour of the young people before and after leaving school is compared to find out what changes in behaviour they have experienced.

In the next section the changes in mobility behaviour will be correlated with changes in other consumption domains to find out if there is a correlation between behavioural changes.

Following, the influence of life events on behavioural change is determined.

Finally, the previously defined indicators of the depth of the upheaval are correlated with the behavioural changes.

5.1 Sample description

As already explained in chapter 4 (Methodology of the survey) the longitudinal survey consists of two waves of research. The first wave was conducted in February to May 2020 and 502 young Austrians participated. The second survey was queried out in March to April 2021 where 136 of the 502 Austrians took part again. The response rate is therefore around 27%.

Following, the sample of the second wave as intersection with the first wave will be described in detail.

The sample consists of exclusively high school graduates (people who have positively completed the “Matura” (final examination of secondary school in Austria)). Therefore, the age range is between 18 and 22 years. In the following chart (Figure 9), the age distribution is visible. As the survey was conducted in March 2021, which is around nine months after school graduation, almost 50% of the whole sample is 19 years old.

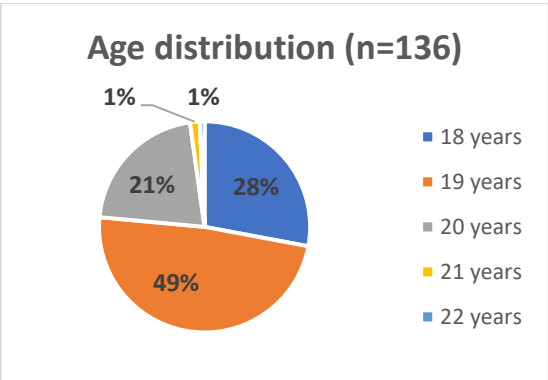

Figure 9: Age distribution
source: own representation

The sex distribution of survey participants is illustrated in Figure 10. The graph indicates that around 60% (81) are female and 40% (57) are male.

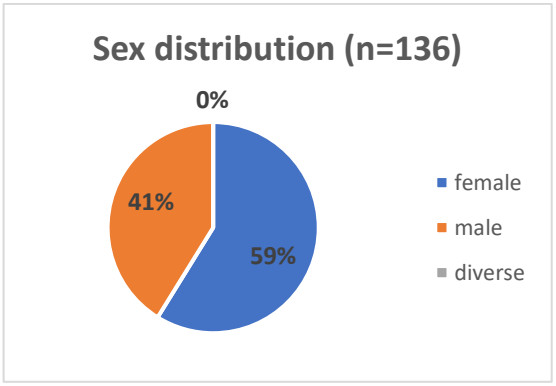

Figure 10: Sex distribution
source: own representation

The following two graphs (figure 11 and figure 12) describe the geographic distribution within the survey population. As it can be seen from the left graph, 85% of the survey participants live in Styria (n=116). The right chart illustrates the residence distribution within Graz. The sample is divided in two almost equal halves. As it can be seen, approximately half of the young people have its residence in Graz, the other half outside of the capital city within Styria.

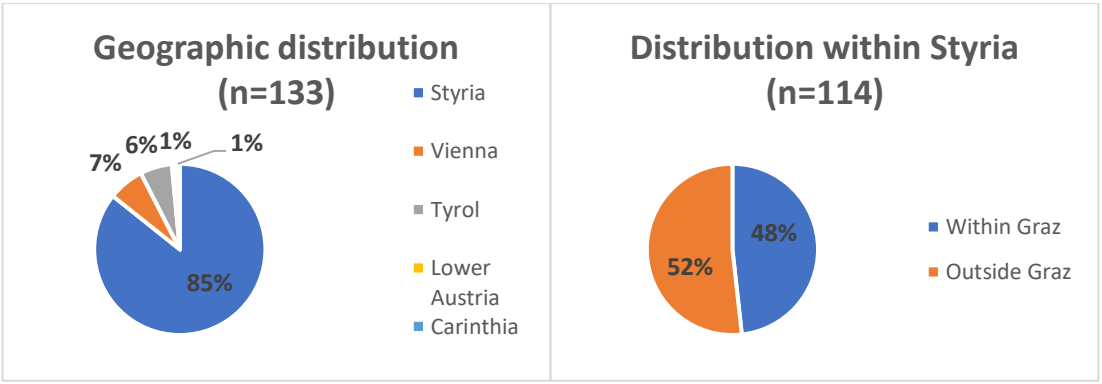

Figure 11 and Figure 12: Geographic distribution
source: own representation

The following pie chart (see Figure 13) represents the form of housing of survey participants. As is shown by the graph, 70% live together with relatives and 12% in shared flats.

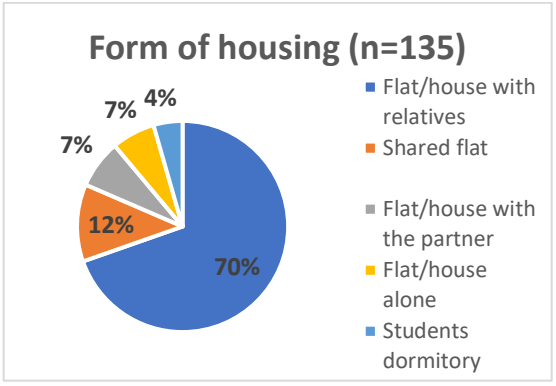

Figure 13: Form of housing
source: own representation

Regarding to type of housing, more than half of the survey participants indicate that they live in single-family, semi-detached, or terraced houses (see Figure 14). About one-third lives in a flat which is in a residential building with more than 10 flats. 15% state that they live in a flat in a house with less than 10 flats.

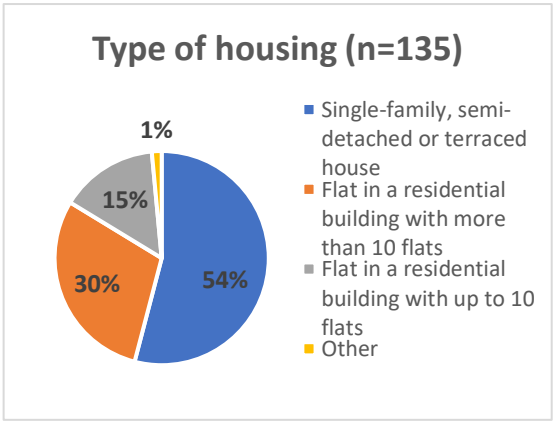

Figure 14: Type of housing
source: own representation

When it comes to the number of people in the household, the answers from survey participants vary from 1 to 10 (see Figure 15). At this question, the person itself is included which means that the minimum number is 1. Most of the respondents, about one-third live in a household with a total number of four people. Approximately one-fifth live with three people in a household. Just 7% live with 6 to 10 people together.

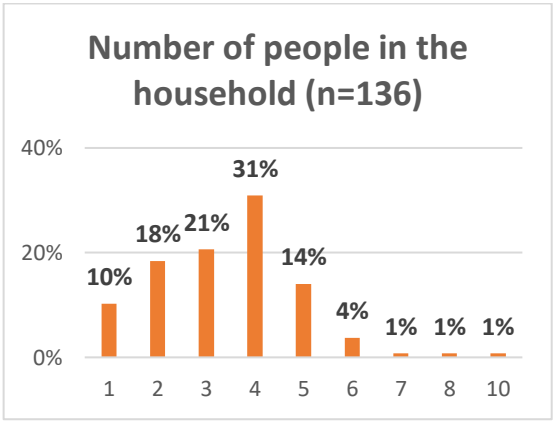

Figure 15: Number of people in the household
source: own representation

Additionally, the disposable income of the survey population was asked. Hereby, the survey participants were asked to add various regular sources of income, such as support from parents, (secondary) jobs, study allowance, family allowance etc. Following, the total fixed expenses per month like rent, heating costs, electricity, mobile phone etc. was queried and the difference as disposable income per month was calculated.

As shown by Table 5 there is a wide span between minimal and maximal available money. Some reported negative disposable money per month, which means they live on savings. The mean value of disposable money is 394€/month. Furthermore, the table shows the standard deviation. It is a measure of the spread of the values of a characteristic around its mean value. It shows how homogeneous the answer to this question was. The higher the number, the more statistical outliers and therefore the higher the spread.

Table 5: Disposable money in €/month
source: own representation

minimal	maximal	mean	standard deviation
-300	1850	394	406

The following chart (Figure 16) demonstrates the car availability of survey participants. About one-quarter owns a car, another quarter can always use the car from their partner, roommate, parents etc. 36%, approximately one-third can use the car from their partner, roommate, parents etc. occasionally and in consultation. 1 in 5 people does not possess a car and neither has the possibility to lend a car.

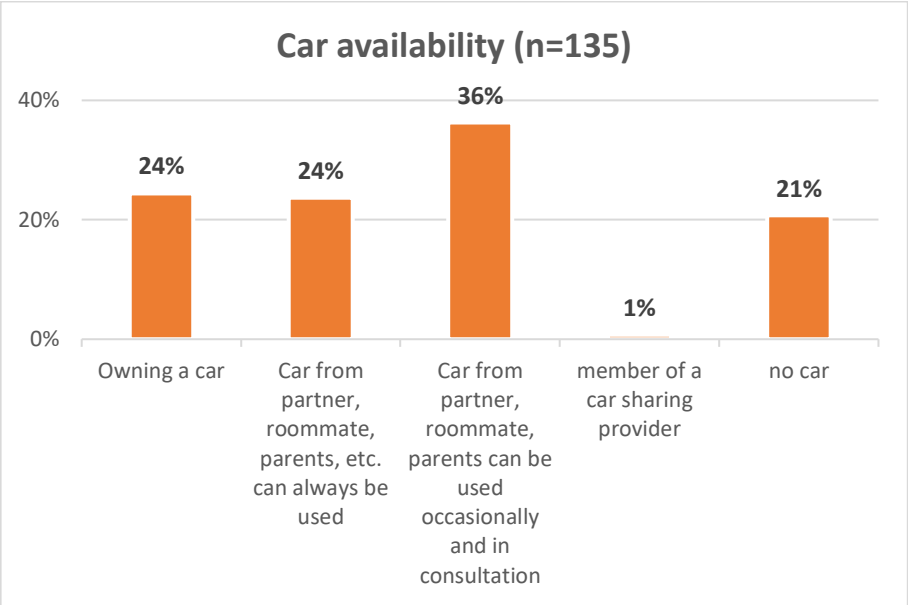

Figure 16: Car availability
source: own representation

The survey was conducted in times of Covid-19. Therefore, survey participants were asked to point out if and to what extent their decisions were influenced by the pandemic. The following chart represents the influence of Covid-19 on decisions related to the seven life events. There are 5 possible response options, which were asked on a scale from 1 (Covid-19 did not affect me at all) to 5 (I did this because of Covid-19). The graph shows that illness and longer journey were perceived as the most influenced. This could be because some of the respondents may have fallen ill due to the pandemic or also cancelled trips abroad due to the travel restrictions/travel warnings. However, in relation to decisions concerning other life events, Corona was not perceived as very influential. The average score for military and civilian service was 1.6 which means that "Covid-19 did not affect me at all" was stated very frequently for this life event. The numbers in the orange boxes mark the standard deviation.

All in all, it is shown in Figure 17 that the corona virus did not affect the decision related to life events very much. Consequently, the pandemic did not mitigate the upheaval after school graduation to a great extent and life events were nevertheless experienced.

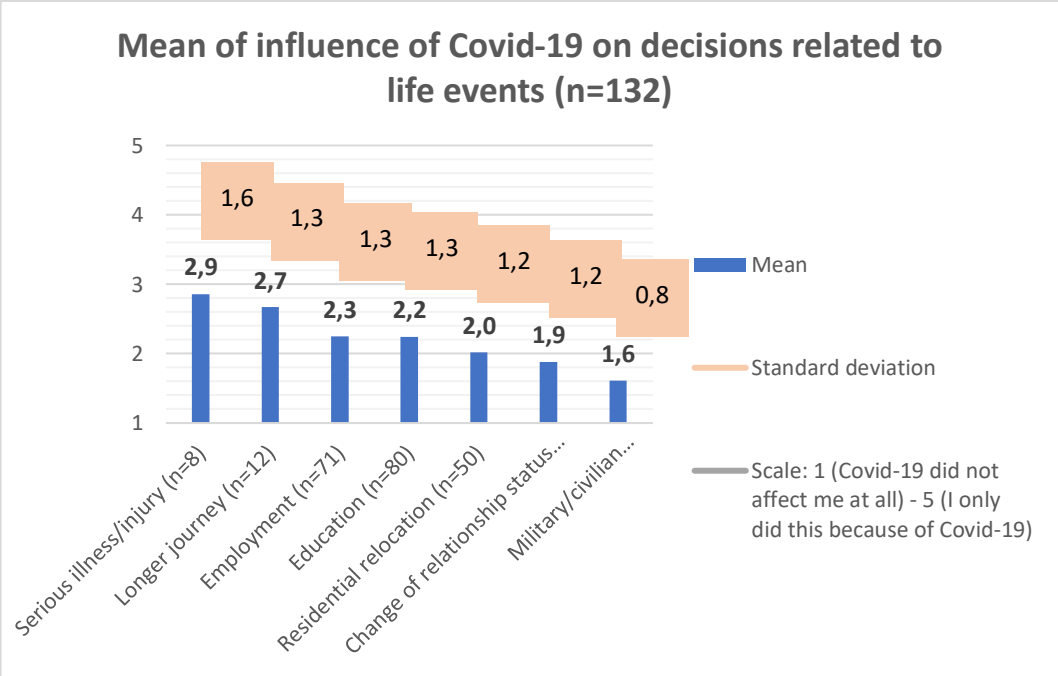

Figure 17: Mean of influence of Covid-19 on decisions related to life events source: own representation

The question has, as mentioned, five response categories, with a ranking between the response options. The format of the scale is called a quasi-metric ordinal scale or Likert scale. It can be assumed that respondents perceive the distances between each answer option to be equally spaced. In order to achieve a more even distribution of the response options, only the two extreme points of the scale (1 and 5) were deliberately designated. Following Döring and Bortz (2016), these rating scales are treated as interval data and

not only as ordinal data. It is therefore permitted to calculate a mean value for this type of scale (Döring and Bortz 2016).

5.2 Experienced life events and consequences of life events

Life events are personal biographical changes. The year after graduation is a typical transition phase in which young people are affected by many different life events in a short period of time. The survey participants were asked to state what they experienced during the last 14 months, from March 2020 to April 2021 as in April 2021 the survey was carried out.

Hereby, seven life events were identified.

The life events are:

- Changes in education status: starting an apprenticeship, training, university, etc.
- Changes in employment: summer job, internship, part-time job, permanent position, etc.
- Residential relocation: moving to another country, region or within the same region; in many cases leaving the parental home
- Military or civilian service/volunteering: For male citizens in Austria there is compulsory military service. They must serve in the Austrian Armed Forces for 6 months or do alternative civilian service, such as nursing, care of the elderly, etc. for 9 months. Female citizens can do this voluntarily. In addition, there is the possibility for all genders to do voluntary work.
- Change of relationship status: separation and/or starting a new relationship
- Long journey: longer stay abroad or travelling
- Serious illness/injury: limitations due to severe disease, illness, accident, or injury

The following bar chart (Figure 18) demonstrates the share of each life event in relation to the total number of survey participants. The two live events with the highest proportion are “education” and “employment” with a share of 59% and 53%. 50 people out of the 135 which experienced a life event changed their place of living during the analysed 14 months. Furthermore, almost one-third of the sample did “military or civilian service/volunteering” as well as experienced a change of relationship status. The life events “long journey” and “serious illness/injury” have the smallest share and will be due to that for further evaluation of life events (after 5.2) excluded.

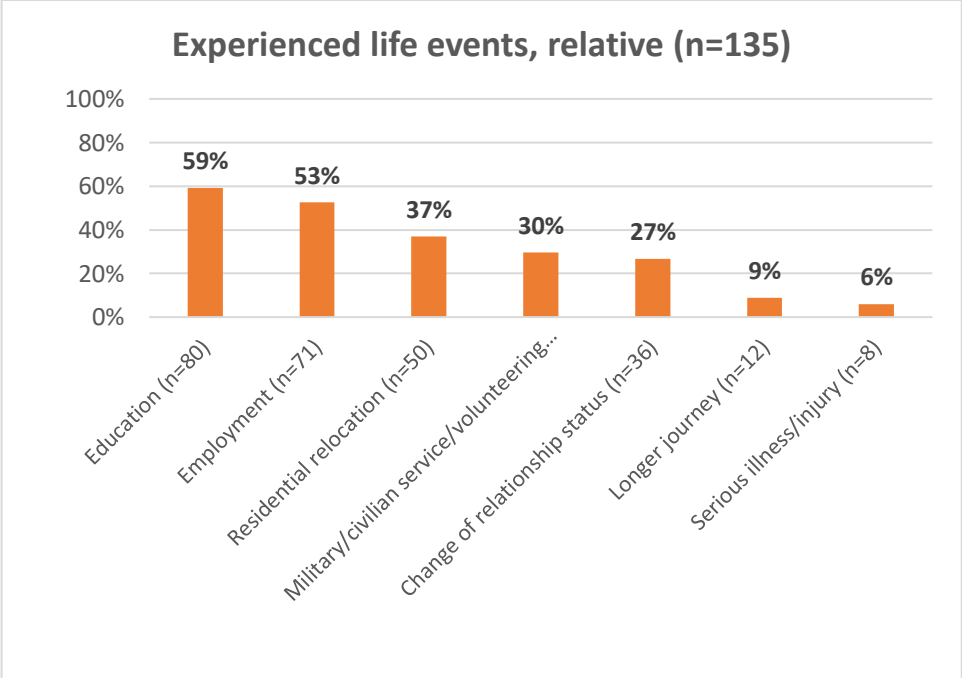

Figure 18: Distribution of experienced life events
source: own representation

Some participants underwent certain life events more than one time which is demonstrated on the bar chart below (Figure 19). One-fifth experienced the life event “education” as well as “employment” twice. 12% of all people who moved during the 14 months, had two relocations.

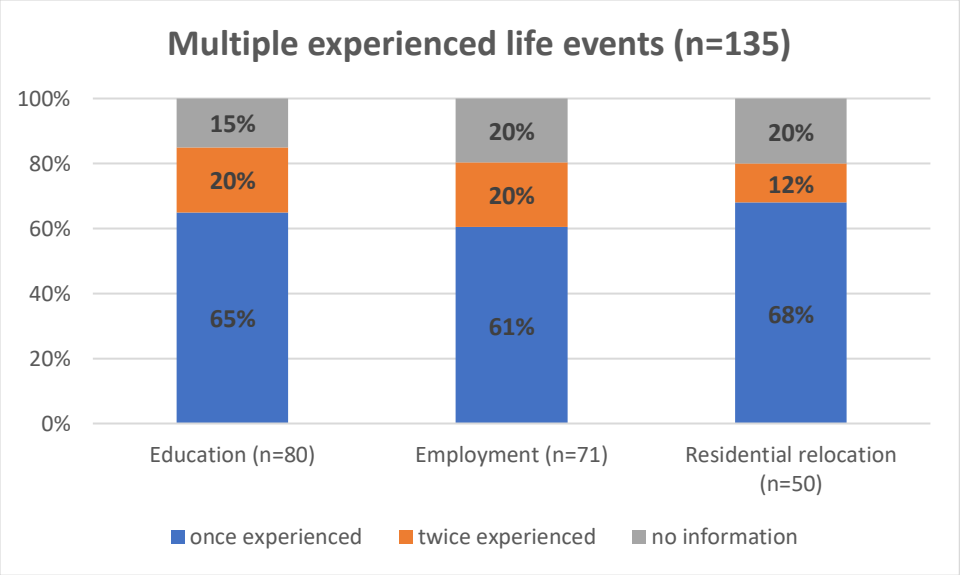

Figure 19: Multiple experienced life events
source: own representation

Regarding sex, differences in experienced life events are visible (see Figure 20). From the 80 female survey participants, almost 80% experience the life event “education”, whereas from the 56 man only 30% start to study. The highest share of male respondents (65%) did “military or civilian service/volunteering” during the last months.

The second highest proportion for both sexes is the life event “employment”. However, 60% of women but just 42% of men had an employment throughout the year (regardless of whether part time, full time, summer job etc.).

The distribution of the life event “change in relationship status” does not show any differences related to sex. Around one in four of both sexes experienced a separation or start of a new relationship.

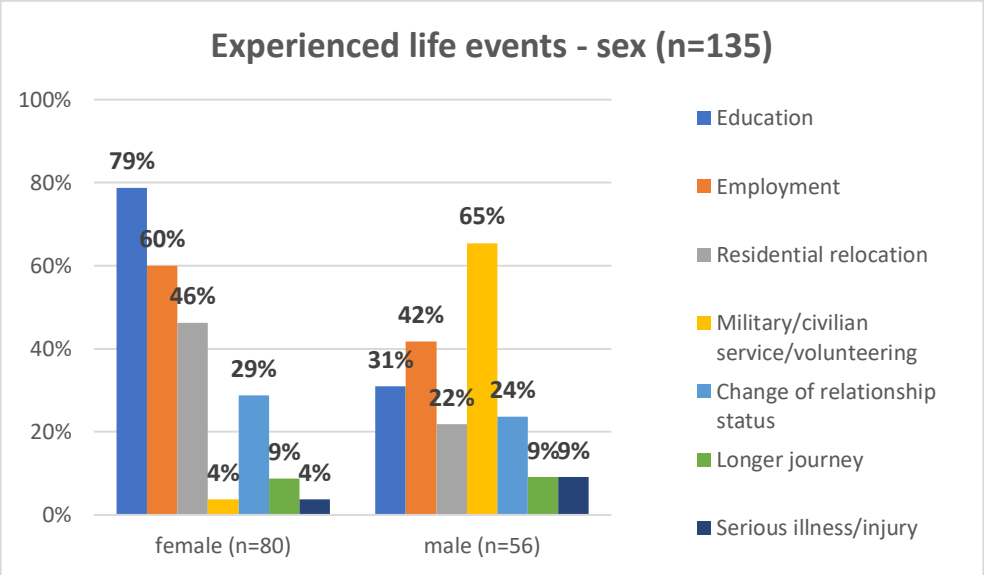

Figure 20: Experienced life events related to sex
source: own representation

The chart below (Figure 21) shows the distribution of combined life events. The sample for this analysis consists of 96 people (n = 96) as those people have experienced 2 or more life events. Hereby, it was analysed which combinations occur most frequently.

The graph shows that the combination of the life events “employment” and “education” are the one which happened in most cases. 45% of all people with more than 2 life events, experienced those two life events at the same time. Moreover, “residential relocation” and “education” is something which many people experienced throughout the year after graduation. Also, “residential relocation” and “employment” is a popular combination which almost one-third experienced.

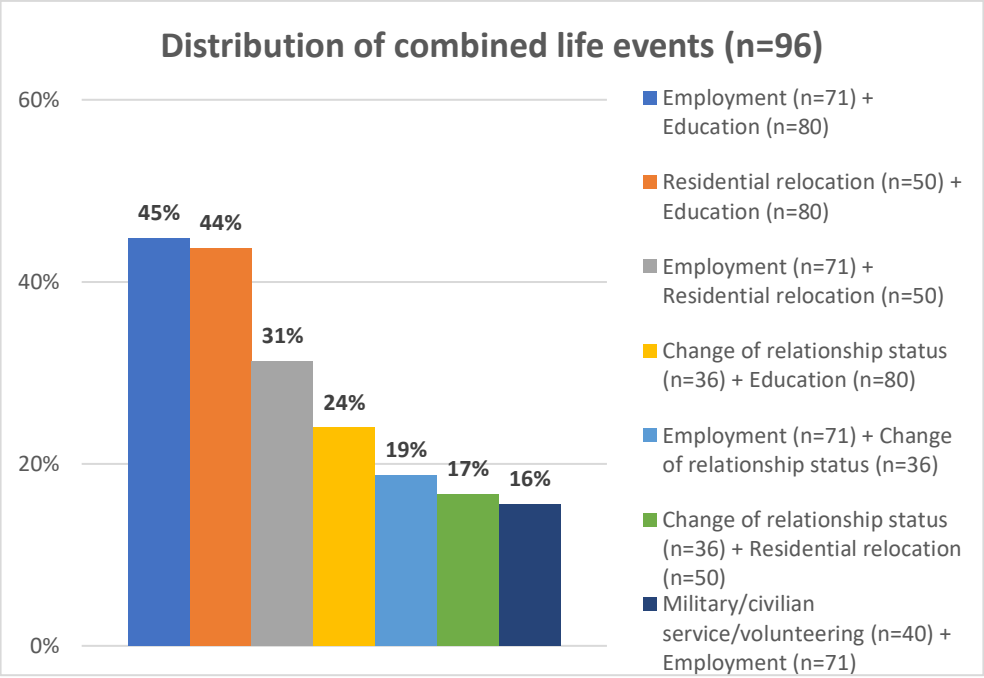

Figure 21: Representation of indicator 1, distribution of combined life events source: own representation

In addition to the occurrence of life events, more aspects in the life of young people change. These lead to certain changes in behaviour, which is why they also should be analysed and evaluated.

Hereby, it will be focused on the following consequences of life events:

- Change in available money per month
- Change in standard of living (subjective assessment of how the standard of living has changed from W1 to W2)
- Change in number of people in the household
- Change in public transport connection (for subgroup “residential relocation”)
- Change in cycling infrastructure (for subgroup “residential relocation”)

The following figure (Figure 22) demonstrates the distribution of experienced consequences of life events. The change in available money per month was recorded as such if the difference of W2 to W1 was minimal +/- 100€. For example, if someone now earns 10€/month more than a year ago, this was not counted as a change in income.

63% experienced a change in available money, 55% a change in standard of living and 44% a change in number of people per household.

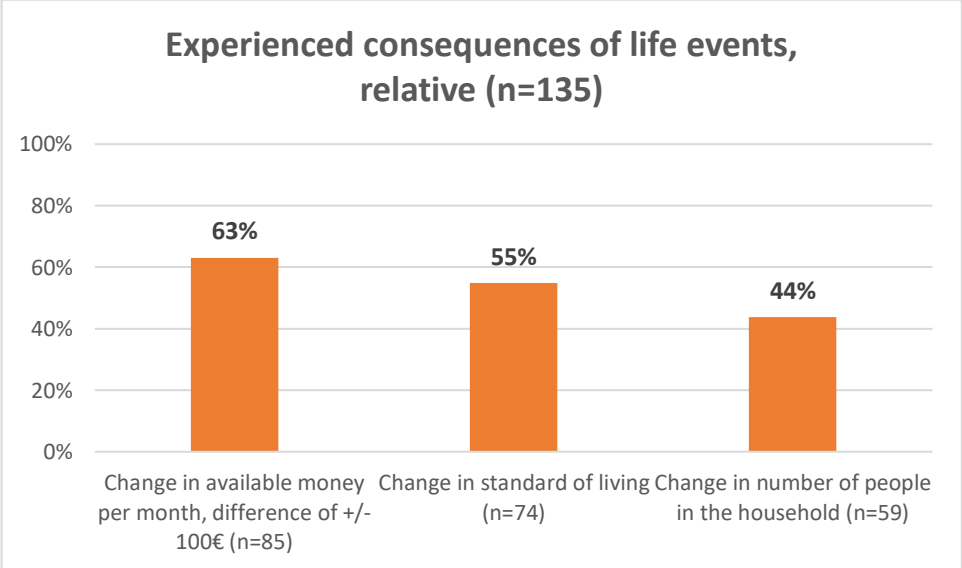

Figure 22: Distribution of experienced consequences of life events source: own representation

Following, the two remaining consequences of life events are illustrated. Just survey participants who had experienced a residential relocation were asked about changes in public transport connection or bicycle infrastructure that is why the n of the following graph lies by 50 people.

Figure 23 demonstrates that 92% of all who moved, experienced a change in public transport connections and around three-quarter a change in cycling infrastructure.

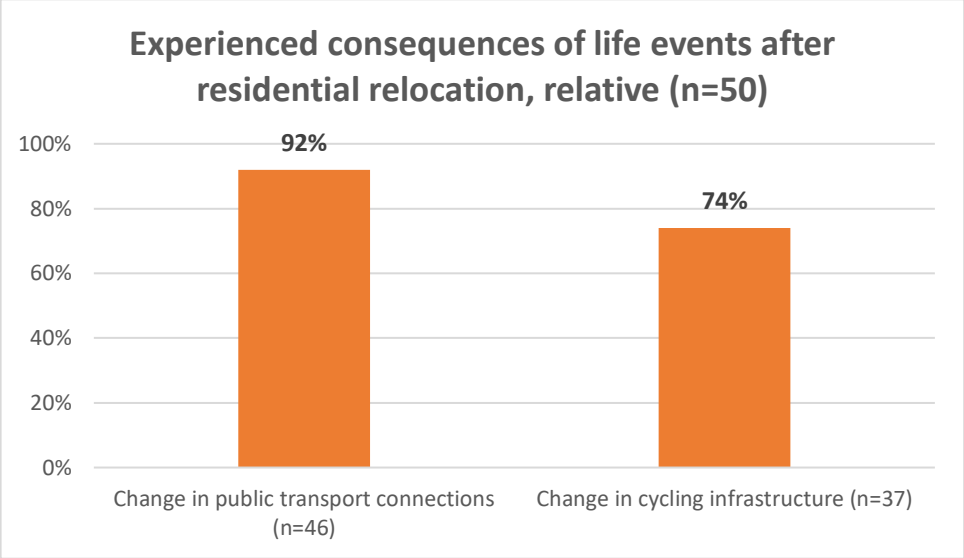

Figure 23: Distribution of experienced consequences of life events after residential relocation
source: own representation

Since a difference means a positive as well as a negative difference, this is considered in a more differentiated manner.

With regard to the available money per month, i.e., income, pocket money or allowance, it was determined for how many people an increase or decrease of 100€ or more can be measured.

The following graph (Figure 24) shows the distribution of the difference in available money per month of the 85 people who get + or - 100€ more compared to last year.

It is visible that 12% had a decrease and 88% an increase in available money. The increase is illustrated more in detail. Around one-quarter of all people experienced a change in money had an increase from 100 to 250€ per month. Another 25% get between 250 to 500€ more than last year and another quarter had an increase in income/pocket money which is between 500 and 1000€. 8% of the 85 people experienced an increase of more than 1000€.

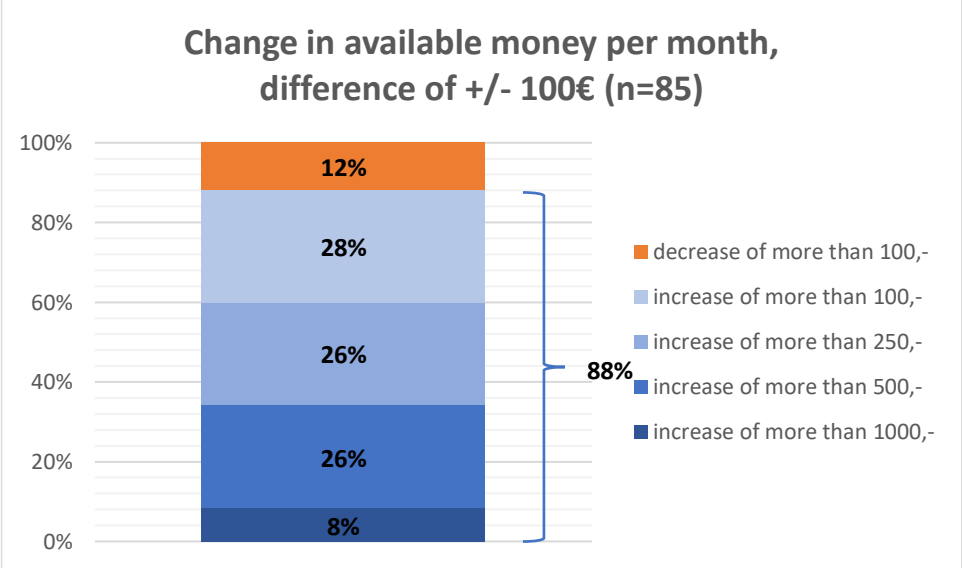

Figure 24: Representation of the change in available money per month, difference of +/- 100€
source: own representation

The graph below (Figure 25) shows that 59 out of 136 participants experienced a change in number of people in the household. Of these, almost 20% now live with more and 80% with less people.

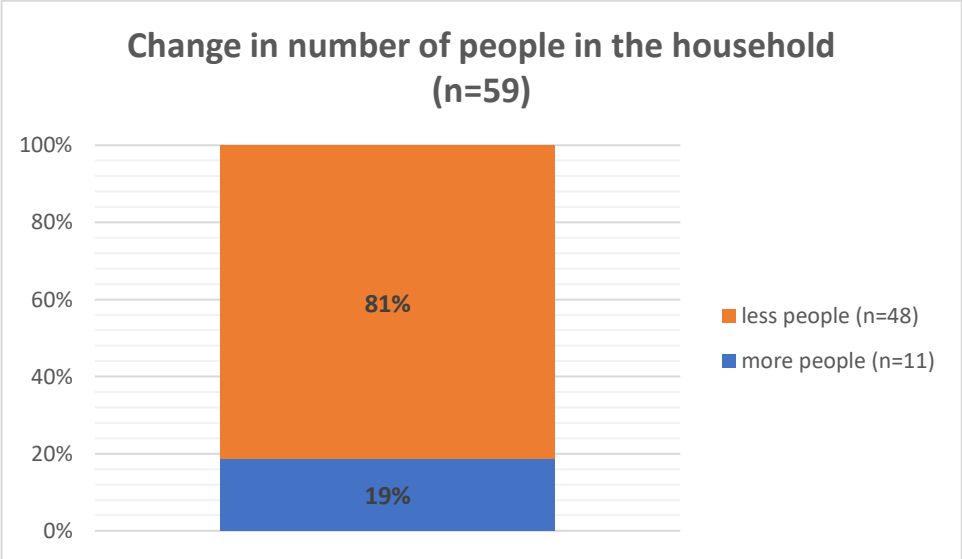

Figure 25: Representation of the change in number of people in the household source: own representation

The respondents were furthermore asked how they experienced the change in standard of living. As seen by the graph (Figure 26), 74 out of 136, a share of 55% perceives a difference in the standard of living compared to the previous year. For most of them, however, this change was experienced as positive as 64% describe the new standard of living as "better" or "much better".

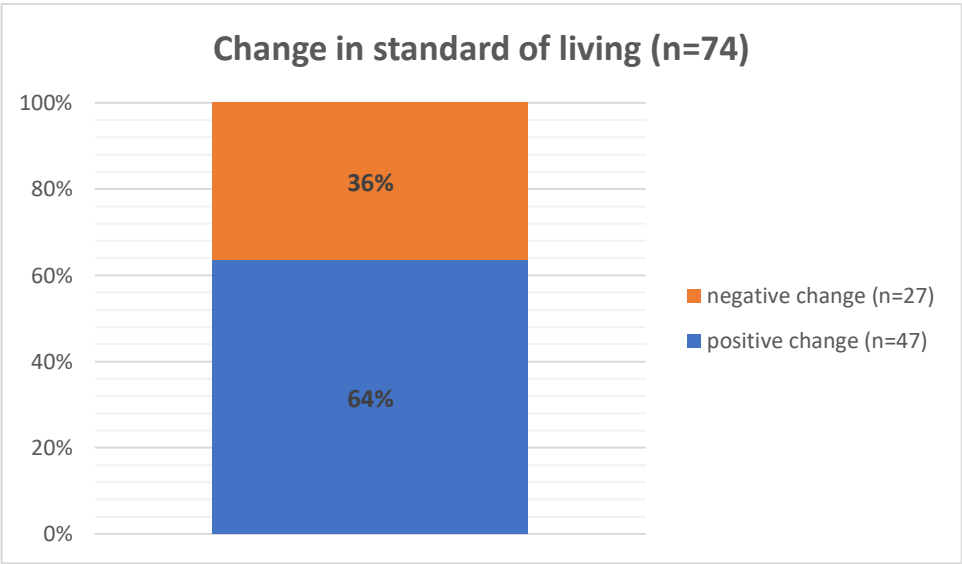

Figure 26: Representation of the change in standard of living source: own representation

Regarding the change in public transport connection (see Figure 27), 87% experienced a positive and 13% a negative change.

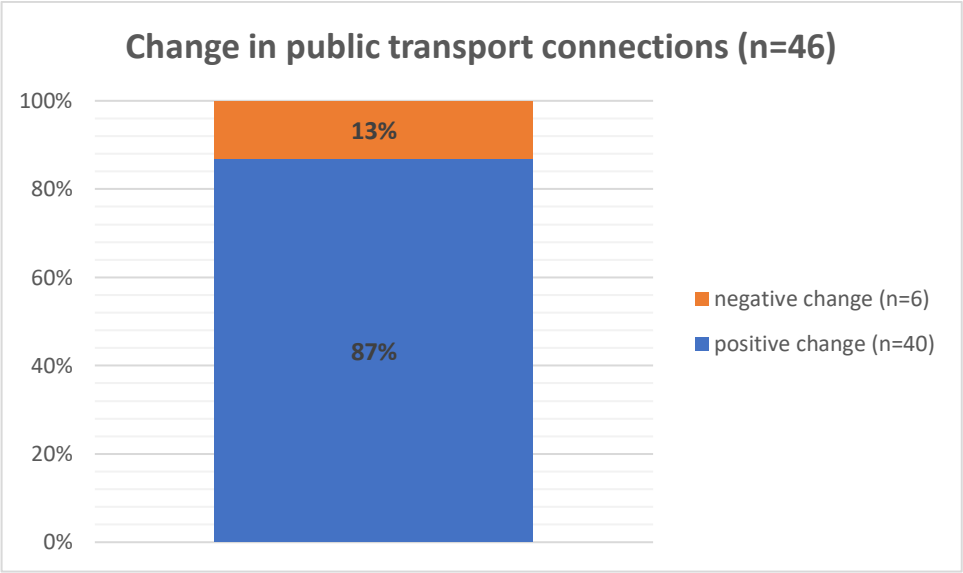

Figure 27: Representation of the change in public transport connections source: own representation

Like the experienced change in public transport connection, also the change in cycling infrastructure was rated as positive which can be seen in the figure below (Figure 28).

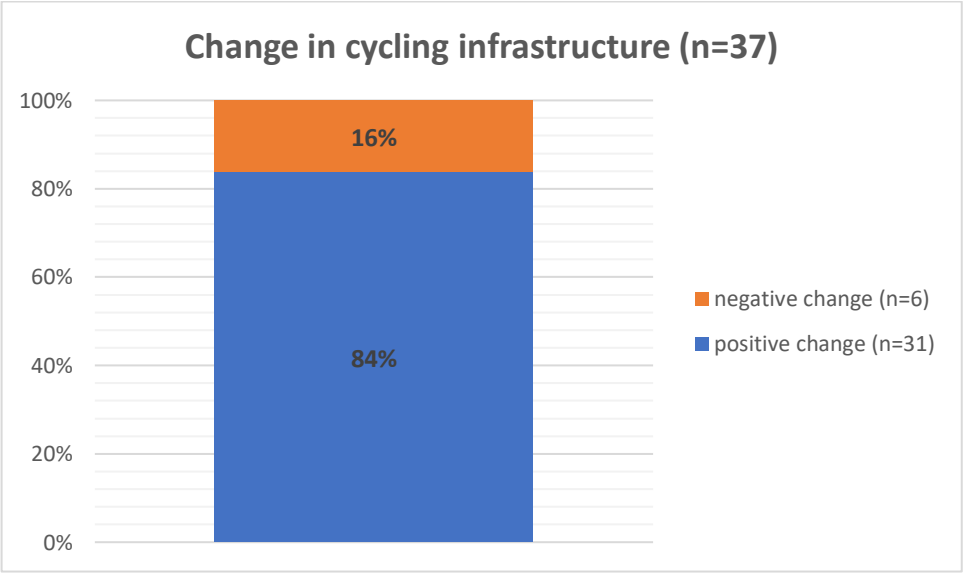

Figure 28: Representation of the change in cycling infrastructure source: own representation

- ***Combination of life events and consequences of life events***

To find out which life events lead to which effects, a mean value comparison (t-test of independent samples) was conducted. Since regarding "change in public transport connections" and "change in cycling infrastructure" only people who have moved were surveyed, these two consequences are not considered in the following analysis. The life events “longer journey” and “serious illness/injury” are also excluded, as only a small proportion of young people have experienced them (see Figure 18).

The t-test was done for the consequences of life events “change in income per month”, “change of number in persons per household” and “change of standard in living”.

Table 6 demonstrates the mean value of “income per month” with and without experiencing the life events. As shown, there is a significant decrease in income per month visible when experiencing the life events “education”, “residential relocation” and “change of relationship status”. People who did military, civilian service or volunteering however, experienced a statistically significant increase of available money per month. The mean difference in income of people who experienced the life event of work and the people who did not have a job is the smallest and moreover not statistically significant.

Table 6: Comparison of means of “change in income per month” with and without experiencing life events
source: own representation

	mean (change in income per month in €/month, life event no)	mean (change in income per month in €/month, life event yes)	mean difference (yes-no)	t (df.)	p
education	523.13	118.84	**-404.29****	-5.70 (76)	<0.001
employment	270.45	297.20	26.75	0.37 (130)	0.712
residential relocation	372.56	129.66	**-242.90****	-3.78 (128)	0.001
military or civilian service/volunt.	178.00	546.97	**368.97****	5.05 (130)	<0.001
change of relationship	327.61	168.57	**-159.04***	-1.99 (130)	0.049

t (df.)=test variable (number of degrees of freedom); p=probability of error
*** The mean difference is significant at the level ≤ 0.01. * The mean difference is significant at the level ≤ 0.05.*

The following table (Table 7) shows that the mean difference in "change in number of persons per household" is significant for the life events education and residential relocation. In both cases there is a reduction in the number of people. In education the difference is on average -0.6, and in the case of relocation it is -1.2.

Table 7: Comparison of means of "Change in number of persons in household" with and without experiencing life events
source: own representation

	mean (change in number of persons, life event no)	**mean (change in number of persons, life event yes)**	**mean difference (yes-no)**	**t (df.)**	**p**
education	- 0.30	- 0.90	**-0.60***	-2.49 (134)	0.014
employment	-0.58	-0.71	-0.13	-0.56 (134)	0.578
residential relocation	-0.21	-1.43	**-1.22****	-4.53 (68)	<0.001
military or civilian service/ volunteering	-0.71	-0.49	0.22	0.82 (134)	0.415
change of relationship status	-0.67	-0.58	0.09	0.31 (134)	0.759

t (df.)=test variable (number of degrees of freedom); p=probability of error
*** The mean difference is significant at the level ≤ 0.01. * The mean difference is significant at the level ≤ 0.05.*

The following table (Table 8) shows the mean differences of the “change in living standards”. The change was asked with a 5-digit scale from 1 “living standard is much better” to 5 “living standard is much worse”. Most of the mean values are close to the answer "standard of living has remained the same", which represents a 3.

The only significant value is for those who experienced the life event "employment". People who have worked indicated that their living standards are better than those who have not worked. However, the difference is relatively small at -0.33.

Table 8: Comparison of means of “change in living standards” with and without experiencing life events
source: own representation

	mean (change of standard of living, life event no)	mean (change of standard of living, life event yes)	mean difference (yes-no)	t (df.)	p
education	2.70	2.95	0.25	1.67 (134)	0.097
employment	3.02	2.69	**-0.33***	-2.22 (134)	0.028
residential relocation	2.93	2.69	-0.24	-1.52 (134)	0.130
military or civilian service/ volunteering	2.82	2.90	0.08	0.44 (134)	0.664
change of relationship status	2.87	2.78	-0.09	-0.54 (134)	0.590

t (df.)=test variable (number of degrees of freedom); p=probability of error
** The mean difference is significant at the level ≤ 0.05.*

5.3 Experienced changes in mobility

The following section deals with mobility data before and after school graduation. Key figures will be presented descriptively.

Following, the modal split before and after school graduation is illustrated. The modal split is a tool to describe the composition of the traffic modes which are used as the main mean of transport and identifies changes over time. It is a parameter for dividing the demand across different modes of transport.

The following graph (Figure 29) shows the modal split of young people before and after leaving school. The survey asked how the trips were divided among the various modes of transportation, differentiating between the four trip purposes of work/education, shopping, hobbies and leisure activities. For the following presentation, the percentage values for each mode of transport were averaged across trip purposes. A decrease of 12% in the share of car travel can be seen. The use of public transport has also decreased by 4%. There has been an increase in active mobility, with an increase of 7% in bicycle use and 8% in walking.

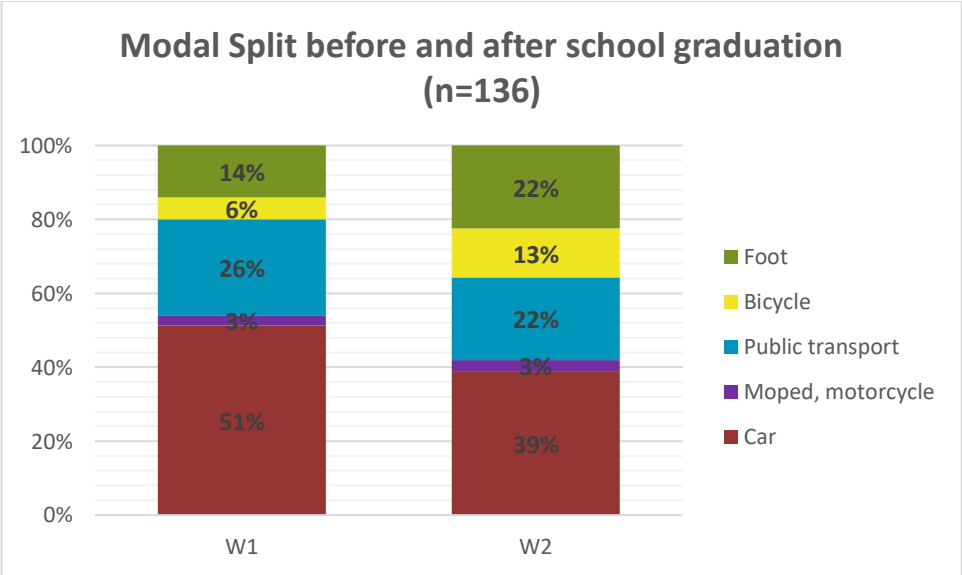

Figure 29: Modal split before and after school graduation source: own representation

The following table (Table 9) represents the average distance travelled per month per trip purpose. The change in the distance before and after school graduation is demonstrated.

It should be mentioned that the distances are extrapolated and calculated with the indication of the length and frequency of the trip. For this reason, inaccuracies are possible. Nevertheless, tendencies are visible.

The trip lengths have all decreased. The largest decrease with an average of approx. 3 km can be seen in the trip purposes shopping and leisure activities.

Table 9: Average distance depending on the purpose of trip before and after school graduation
source: own representation

	mean W1 (in km/month)	mean W2 (in km/month)	mean difference W2-W1 (in km/month)
work/education	16.55	16.29	-0.26
Shopping	7.79	4.67	-3.12
Hobbies	10.17	8.66	-1.51
leisure activities	18.91	15.96	-2.95

Since the survey took place in times of the Corona pandemic, people's mobility behaviour has also changed as a result. The following bar chart (Figure 30) shows how many days er week the respondents work or study in their homes. This could be a possible explanation for the decrease of distances from survey 1 to survey 2 as presented in Table 9 above.

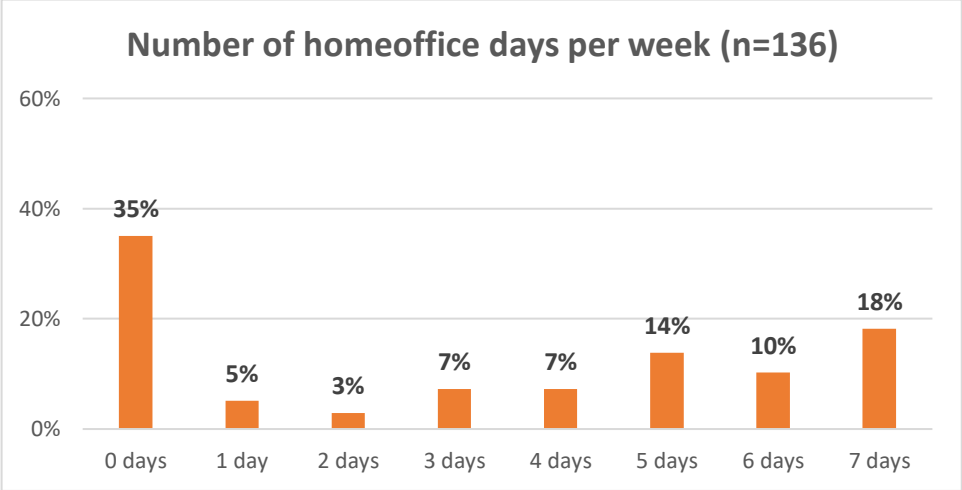

Figure 30: Numbers of home office days per week
source: own representation

5.4 Indicators of depth of biographical upheaval

The present chapter deals with indicators of depth of upheaval. The aim was to find out if certain aspects lead to a deeper radical change in people's life. Hereby, three indicators are defined:

1) Life events experienced at the same time
2) Life events weighted according to duration
3) Subjective evaluation of the upheaval of life events

Firstly, the analysis of the three indicators will be presented. Consequently, a correlation between those indicators will be carried out to find out if the indicators are comparable.

5.4.1 First indicator: life events experienced at the same time

Many survey participants experienced more than one life event throughout the year after their graduation. The following chart (Figure 31) represents the number of life events experienced at the same time. 2 people, which represents a share of 1% did not undergo any life event during the year. It is visible that one-third experienced one life event and another third experienced two life events. Almost another third with a share of 28% experienced three life events.

5% underwent four life events during the measured 14 months.

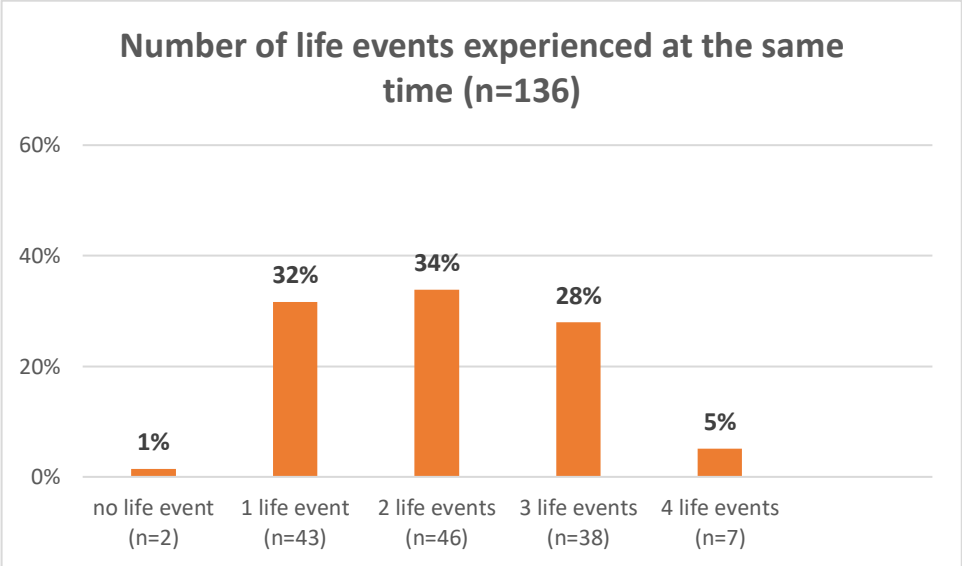

Figure 31: Representation of indicator 1, number of life events experienced at the same time
source: own representation

5.4.2 Second indicator: life events weighted according to duration

The second indicator deals with life events weighted according to duration. The chart below (Figure 32) demonstrates the average duration of life events. While education was experienced for an average of just under 8 months and military- or civilian service for 7 months, the employment life event was experienced for the shortest time with an average of 5.6 months. It is striking, however, that the standard deviation is highest here, as the maximum and minimum values are very far apart. The reason for this is that some youth experienced a 1- or 2-month summer internship, but others reported a duration of 28 months (2 jobs during the entire 14-month period).

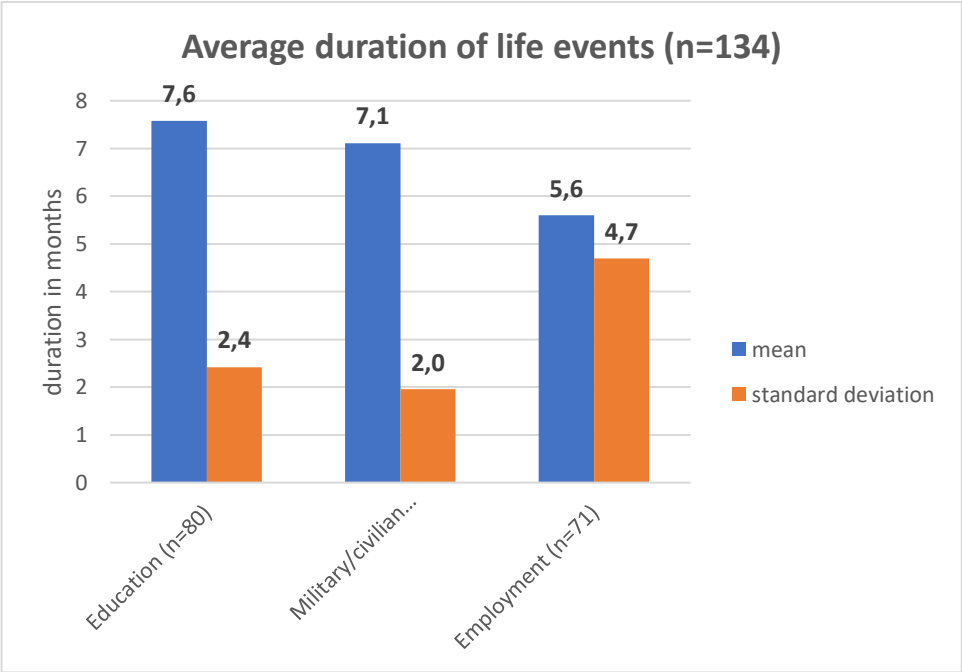

Figure 32: Representation of indicator 2, average duration of life events source: own representation

5.4.3 Third indicator: subjective evaluation of the upheaval of life events

The third indicator of the depth of upheaval represents the respondents' subjective assessment of the extent to which their lives have changed due to life events. Here, for each life event experienced, respondents were asked how much they rated the impact on their lives. For this purpose, there are five answer categories from 1 (Everything has stayed the same) to 5 (Everything has changed).

As already described in chapter 5.1 (see Figure 17: Mean of influence of Covid-19 on decisions related to life events), a Likert scale with equally distributed answer options can also be assumed here, which is why the calculation of mean values is permitted.

As recognized on the following bar chart (Figure 33), the life events “education” and “residential relocation” bring the greatest subjectively felt upheaval. “Employment”, on the other hand, with a value of 2.4 represents the life event that has the least impact on life on average. The standard deviation is quite small for all life events, which indicates that the responses are homogeneous.

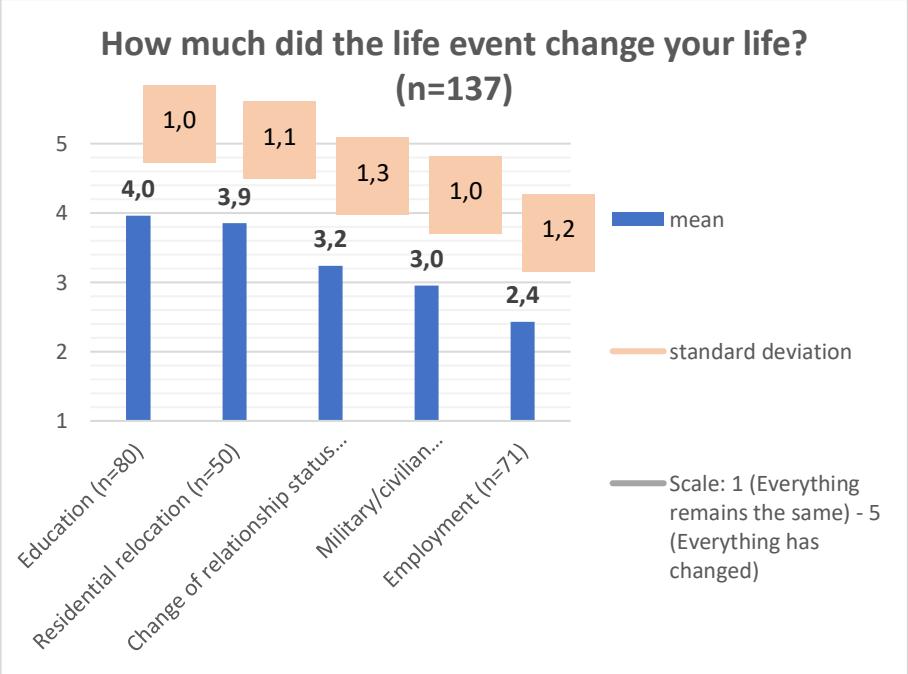

Figure 33: Representation of the mean values of the subjective evaluation of the upheaval
source: own representation

5.4.4 Correlation between indicators of depth of upheaval

In order to find out whether the indicators defined and analysed in advance are correlated, a Pearson correlation analysis is performed below.

It was assumed that the duration and the number of simultaneous life events as objective indicators are related to the subjective assessment of the depth of the upheaval.

Strikingly, however, as demonstrated in Table 10 the p-values for all correlations are above 0.05 which indicates non-significant correlations.

The table shows the value of the correlation coefficient r, followed by the corresponding p-value in parentheses. Even though there are no statistically significant correlations, there is a small, negative correlation (r=-0.135) between the first and second indicator. For example, the more life events experienced, the shorter the events experienced, as there may be less time for longer events. Furthermore, there is a weak, positive correlation (r=0.115) between indicator 1 and 3. The more life events experienced, the stronger the subjective influence on life was evaluated. The Pearson correlation coefficient for indicators 2 and 3 is r=0.023, too small for a correlation, since according to Cohen (2013) a small effect can be assumed from a coefficient of 0.1.

Since the Pearson correlation does not show any correlation, all three indicators are compared with the behavioural change in the following analysis.

Table 10: Correlation between the three indicators to classify the depth of upheaval source: own representation

		indicator 1 (life events experienced at the same time)	**indicator 2 (life events weighted according to duration)**
indicator 1 (life events experienced at the same time)	**r**	1	-0.135
	p		0.150
indicator 2 (life events weighted according to duration)	**r**	-0.135	1
	p	0.150	
indicator 3 (subjective evaluation of the upheaval of life events)	**r**	0.115	0.023
	p	0.190	0.807

r=Pearson correlation coefficient; p=probability of error

5.5 Factor structure of behaviours

Before the behavioural differences between waves 1 and 2 can be determined, a factor analysis was carried out to find out whether the specific behaviours that were previously assigned to the consumption domains (see chapter 2) correlate and can be aggregated to indices.

Mobility data in terms of modal split was excluded from the factor analysis, as the consumption domain is split into five behaviours for each means of transport (car, moped/motorcycle, public transport, bicycle, walking). However, the items that were previously assigned to the three consumption domains alimentation, consumer goods and waste are regrouped by means of the factor analysis.

The aim of the factor analysis is to look at correlations between the used items in order to discover groups that correlate as strongly as possible with each other and as little as possible with the remaining items.

The following table (Table 11) shows the factor loadings, i.e., the factor-item correlations.

The analysis shows several distinct factors; thus, the respondents do not behave consistently across the previously defined indices, e.g., the fact that they do not eat meat is not related to the consumption of organic products. Therefore, the domain “alimentation” as previously assigned is not valid, and it is necessary to assign the specific alimentation behaviours to other domains. The items that were previously assigned to alimentation now become part of the factors "signature" and "regional alimentation". The same can be conferred to other consumption domains.

The first column of the table indicates the expected factors, the first row lists the observed factors that were newly formed based on the factor analysis. It is therefore visible to which new domains the behaviours have been reassigned.

Since the table originates from the SPILLOVER project, which analysed more consumption domains than the master's thesis, "electricity use", "heating" and "hot water use" are also part of the table. However, these will not be explained in the following, but rather the domains that are dealt with in the context of the work.

Table 11: Factor-item analysis of behaviour patterns source: Penker and Seebauer 2021

			observed factors						
			Signature	Energy use	Repair/reuse	New consumer goods	Waste separation	Regional alimentation	Everyday mobility
expected factors	Waste separation	Separate waste					0,71		
		Buy reusable packaging	0,504				0,408		
		Dispose of paper only in wastepaper					0,617		
		Avoid plastic packaging	0,536				0,313		
	Heating	Wear warmer clothes when room is cold	0,327			-0,381			
	Hot water use	turn off the water while showering		0,674					
		take a shorter shower	0,371	0,541					
	Electricity use	turn off the light		0,471			0,407		
		use lid when heated						0,696	
		Disconnect devices from the socket		0,65					
	Consumer goods	Repair broken devices			0,496		0,32		
		Buy new clothes				0,805			
		Repair broken clothing			0,602				
		Buy used equipment			0,743				
		Buy new electronic devices				0,649			
		Buy second hand clothing	0,428		0,67				
	Everday mobility	To get picked up							0,575
		To organize a car pool							0,623
	Alimentation	Eat meat	-0,645						
		Buy organic food	0,721						
		Buy fruit according to the season						0,479	
		Buy food from Austria	0,504					0,465	

The table gives standardised factor loadings in a principal component analysis with varimax rotation.

Methodologically, these different approaches can be differentiated into formative and reflective indices (Latcheva and Davidov 2014).

In the consumption domains from chapter 2 (alimentation, waste, consumer goods), behaviours were combined in an index as top-down access, which from a theoretical point of view are seen as belonging together. Those expected factors represent the formative indices.

Opposite are the reflective indices, which summarize factors that young people regard as belonging together. This is visible through their high intercorrelation. It is therefore a bottom-up approach that includes the differentiated point of view of the respondents.

The new defined indices can be seen in the table below (Table 12). Since correlations between these behaviours were found in the factor analysis, these new factors could be formed. As a result, it was necessary to find umbrella terms for the new reflective factors that summarise the regrouped behaviours.

Table 12: New defined behaviour indices based on the factor-item analysis source: own representation

car	share of car by trip (sum of 4 trip purposes: work/education, shopping, hobbies, leisure activities)
moped/motorcycle	share of moped/motorcycle by trip (sum of 4 trip purposes: work/education, shopping, hobbies, leisure activities)
public transport	share of public transport by trip (sum of 4 trip purposes: work/education, shopping, hobbies, leisure activities)
Bicycle	share of bicycle by trip (sum of 4 trip purposes: work/education, shopping, hobbies, leisure activities)
Foot	share of foot by trip (sum of 4 trip purposes: work/education, shopping, hobbies, leisure activities)
everyday mobility	to get picked up (-)
	organization of car pools (+)
signature	buy organic food (+)
	eat meat (-)
	avoid plastic packaging (+)
	buy reusable packaging (+)
regional alimentation	buy food from Austria (+)
	buy fruit and vegetables according to the season (+)
repair/reuse	repair broken devices (+)
	repair broken clothing (+)
	buy second-hand electronical devices (+)
new consumer goods	buy new electronic devices (-)
	buy new clothes (-)
waste separation	separate waste (+)
	dispose of paper only in wastepaper (+)

+…climate-friendly behaviour; -…climate-damaging behaviour

While the first five mobility items indicate the percentage of each mode of transport per trip, the subsequent items are behaviours that were queried using a never-always scale from 1 to 5. These are followed by a plus or minus symbol representing climate-friendly (+) and climate-damaging (-) behaviour. In order to make the behaviours comparable,

the behaviours were recoded in such a way that a high value was assigned to the environmentally friendly behaviour (5=always for behaviour “buying organic food” and 5=never for “eating meat”).

For each of the five mobility items, the highest value is 100 because, for example, 100% of trips can be made using the "bicycle" mode of transportation.

For the other behaviour items, the highest possible value is 5 since the mean value of the individual behaviours was calculated for the items. A value of 5 would therefore represent the most climate-friendly behavioural option.

5.6 Behavioural change before and after school graduation

To find out how young people's behaviour changed before and after graduation, a comparison of means was conducted. Since it is the same sample at two different points of time, the dependent samples t-test was done.

The following table (Table 13) shows the mean score of the behavioural items before graduation, as well as after graduation. In addition, the difference in mean values is shown. Modal shifts are evident in the mobility data. There is a significant drop in car ($t(134)=3.18$; $p=0.002$) and public transport use ($t(133)=-0.93$; $p=0.001$). The above-mentioned means of transport are used on around 7% less trips than before leaving school. However, there was an increase in the use of bicycles ($t(133)=-4.75$; $p<0.001$) and walking ($t(133)=-3.55$; $p=0.001$). There are hardly any significant behavioural differences for the other items. Only in the domain "Repair/reuse" ($t(136)=-2.90$; $p=0.004$) there was an increase in climate-friendly behaviour, although with a difference of 0.15 this is rather small.

Table 13: Behavioural change before and after life events source: own representation

	mean W1 (before graduation)	Mean W2 (after graduation)	mean difference (W2-W1)	t (df.)	p
car	42.05	34.87	**-7.18****	3.18 (134)	0.002
moped/motorcycle	2.33	3.10	0.77	-0.93 (133)	0.354
public transport	27.28	20.22	**-7.06****	3.26 (133)	0.001
bicycle	5.32	11.81	**6.49****	-4.75 (133)	<0.001
foot	11.80	18.71	**6.91****	-3.55 (133)	0.001
everyday mobility	3.67	3.74	0.07	-1.01 (136)	0.317
signature	3.37	4.00	0.63	-0.70 (136)	0.486
regional alimentation	3.87	3.86	-0.01	0.06 (136)	0.949
repair/reuse	2.80	2.95	**0.15****	-2.90 (136)	0.004

new consumer goods	3.56	3.61	0.05	-0.72 (136)	0.475
waste separation	4.36	4.38	0.02	-0.38 (136)	0.702

t (df.)=test variable (number of degrees of freedom); p=probability of error
*** The mean difference is significant at the level ≤ 0.01.*

5.7 Correlation of behavioural change after life events in mobility with other consumption domains

To find out whether young people consistently behave in an environmentally friendly way in several areas, mobility behaviour was compared with behaviour in other areas. This comparison is made for the data before graduation (W1), after graduation (W2) and for the behaviour difference (W2-W1). For this purpose, a Pearson correlation analysis was carried out. The analysis shows which behaviours are related to each other, i.e., whether people who, for example, use environmentally friendly means of transport, also pay attention to the climate in other areas.

Here, the mobility behaviour of the five means of transport was considered separately from the factor "everyday mobility" in order to find out how the organisation of car pools and how often someone gets picked up is correlating with the means of transport.

The following three tables show the results of the Pearson correlation analysis.

Table 14 presents the behaviours before leaving school. It is visible that especially people who use the means of transport “bicycle" regularly also act in a climate-friendly way in other areas as there are significant correlations with “everyday mobility”, “signature”, “regional alimentation” and “repair/reuse” (all p-values below 0.05, i.e., significant). All correlations are positive which indicates that the more people cycle, the more environmentally friendly they are in the just mentioned domains. The correlation between “signature” and “bicycle” is the highest and can be classified as a "moderate correlation" according to Cohen's guidelines. Signature summarizes the behaviours that are visible to the outside world, such as meat consumption or avoiding plastic packaging (for information regarding the item-factor structure see Table 12).

The remaining correlations with cycling can be rated as weak.

In addition, the analysis shows significant evidence (p=0.034) for the relationship between "public transport" and "new consumer goods". The correlation coefficient is 0.181, which indicates a weak positive correlation. This means that people who frequently use public transport are less likely to buy new clothes or electronic devices.

Table 14: Correlation of mobility behaviour with other consumption domains, W1 source: own representation

		car W1	moped/motorcycle W1	public transport W1	bicycle W1	foot W1
everyday mobility W1	**r**	-0.083	0.009	0.030	**0.242****	0.069
	p	0.333	0.916	0.725	0.004	0.424
signature W1	**r**	-0.132	0.061	0.049	**0.316****	-0.014
	p	0.125	0.480	0.572	<0.001	0.867
regional alimentation W1	**r**	-0.031	0.052	-0.109	**0.202***	0.013
	p	0.718	0.548	0.207	0.018	0.877
repair/reuse W1	**r**	-0.158	0.020	-0.006	**0.186***	0.139
	p	0.064	0.818	0.946	0.029	0.105
new consumer goods W1	**r**	-0.091	0.064	**0.181***	0.066	-0.076
	p	0.290	0.458	0.034	0.446	0.377
waste separation W1	**r**	-0.020	-0.145	0.165	0.074	-0.082
	p	0.815	0.090	0.054	0.392	0.339

r=Pearson correlation coefficient; p=probability of error
*** The correlation is significant at the level ≤ 0.01. * The correlation is significant at the level ≤ 0.05.*

When comparing behaviour in W2, i.e., after high school graduation (see Table 15), it is noticeable that there are generally less significant correlations compared to W1. Still, cyclists seem to be consistently climate-friendly in other behaviours as well, although it is only in “signature” and “repair/reuse”. The positive correlations show that cyclists are also more likely to be environmentally friendly in “signature” (such as buying organic food, vegetarian diet, avoid plastic packaging and buying reusable packaging), as well as more likely to repair broken devices/ clothing or buy second hand.

In addition, there is a negative correlation between car driving and “new consumer goods”, which means that either people who drive frequently rather buy new consumer goods (negative for the environment) or people who rarely drive buy few new consumer goods (positive for the environment). Drivers seem to buy new clothes or electronic devices more regularly than non-car drivers.

For all three correlations just mentioned, the coefficients are between 0.1 and 0.3, which indicate weak correlations.

Table 15: Correlation of mobility behaviour with other consumption domains, W2 source: own representation

		car W2	moped/motorcycle W2	public transport W2	bicycle W2	foot W2
everyday mobility W2	**r**	0.064	0.063	-0.031	0.045	-0.115
	p	0.463	0.468	0.718	0.602	0.185
signature W2	**r**	-0.147	-0.104	0.022	**0.264****	0.035
	p	0.088	0.232	0.801	0.002	0.689
regional alimentation W2	**r**	0.027	0.051	-0.026	0.060	-0.101
	p	0.759	0.557	0.768	0.489	0.246
repair/reuse W2	**r**	-0.099	-0.068	-0.012	**0.232****	-0.128
	p	0.255	0.438	0.890	0.007	0.140
new consumer goods W2	**r**	**-0.175***	0.058	-0.017	0.127	0.024
	p	0.042	0.504	0.845	0.145	0.780
waste separation W2	**r**	-0.097	-0.032	0.053	0.027	-0.037
	p	0.264	0.715	0.541	0.754	0.670

r=Pearson correlation coefficient; p=probability of error
*** The correlation is significant at the level ≤ 0.01. * The correlation is significant at the level ≤ 0.05.*

Table 16 relates the behavioural changes of young people. Here, the changes in behaviour before and after leaving school are put into relation. There is a positive correlation between changes in “public transport” and “everyday mobility”. For example, those who use more public transport than they did a year ago are now also more environmentally conscious in terms of the "everyday mobility" factor, i.e., they are picked up less/ organize carpools more often (for factor-item information see Table 12). However, the correlation is with a coefficient of r=0.174 relatively low. The behavioural change in the transportation mode bicycle correlates negatively with behavioural changes in the domain “everyday mobility” and positively with the domain “repair/reuse”. That means that people who ride a bicycle more often, get picked up more, and people who ride a bicycle less, often get picked up less (r=-0.190). The highest correlation is between cycling and “repair/reuse”. People who ride their bikes more than they did a year ago now also repair their clothing/technology devices more often (r=0.279). Furthermore, there is a positive significant (p=0.012) correlation between "moped/motorcycle" and "new consumer goods". This means that people who, for example, ride a moped more than they did a year ago, buy fewer new consumer goods, i.e., they are more environmentally friendly in their consumption than in their mobility behaviour. The correlation between these indices is with r=0.217 referred as “moderate correlation”.

Table 16: Correlation of behavioural change after life events in mobility with other consumption domains, W2-W1
source: own representation

		car W2-W1	moped/motorcycle W2-W1	public transport W2-W1	bicycle W2-W1	foot W2-W1
everyday mobility W2-W1	**r**	0.104	-0.073	**0.174***	**-0.190***	-.016
	p	0.231	0.403	0.044	0.028	0.853
signature W2-W1	**r**	-0.008	-0.029	-0.087	0.039	0.060
	p	0.926	0.740	0.317	0.651	0.489
regional alimentation W2-W1	**r**	0.025	-0.002	-0.048	-0.015	-0.091
	p	0.773	0.978	0.580	0.866	0.296
repair/reuse W2-W1	**r**	-0.071	-0.133	-0.097	**0.279****	0.040
	p	0.411	0.125	0.267	0.001	0.646
new consumer goods W2-W1	**r**	-0.053	**0.217***	0.090	0.071	-0.060
	p	0.540	0.012	0.300	0.415	0.488
waste separation W2-W1	**r**	-0.151	-0.052	0.041	0.070	-0.015
	p	0.081	0.551	0.640	0.424	0.866

r=Pearson correlation coefficient; p=probability of error
*** The correlation is significant at the level ≤ 0.01. * The correlation is significant at the level ≤ 0.05.*

5.8 Impact of life events on behavioural changes

In the following, mean comparisons (t-tests of independent samples) are used to compare the mean of the behavioural changes. For all five life events, the two groups of people - life event experienced (referred to as life event yes) and life event not experienced (referred to as life event no) - are compared. If a life event has a significant impact on a behavioural item, it is marked with an asterisk.

5.8.1 Education

In Table 17, it can be seen that people who experienced the life event education experienced a nearly 9% greater decrease in driving than those who did not experience education (t(133)=-1.98; p=0.049). In contrast, adolescents who started education experienced an 8% greater increase in walking (t(131.33)=2.36; p=0.020). Furthermore, the life event education shows significant behavioural changes in the domain “repair/reuse”. The group of people who did not start to study repairs more than one year ago (mean of behavioural change=0.29) while all those who study only have an increase of 0.06 in this domain. This means that they have not changed their habits much and that the change has been positive, but less than for all those who do not study (t(135)=-2.15; p=0.033).

Table 17: Impact of education on behavioural changes source: own representation

	mean (W2-W1 with education no)	mean (W2-W1 with education yes)	mean difference (W2-W1 with yes - W2-W1 with no)	t (df.)	p
car	-2.00	-10.96	**-8.96***	-1.98 (133)	0.049
moped/motorcycle	1.39	0.31	-1.08	-0.65 (132)	0.520
public transport	-11.06	-4.10	6.96	1.59 (132)	0.112
bicycle	3.68	8.56	4.88	1.88 (132)	0.063
foot	1.82	10.68	**8.86***	2.36 (131)	0.020
everyday mobility	0.11	0.05	-0.06	-0.41 (135)	0.681
signature	0.01	0.04	0.03	0.49 (135)	0.627
regional alimentation	0.02	-0.02	-0.04	-0.31 (135)	0.755
repair/reuse	0.29	0.06	**-0.23***	-2.15 (135)	0.033
new consumer goods	0.11	0.00	-0.11	-0.85 (135)	0.398
waste separation	-0.04	0.07	0.11	0.97 (135)	0.334

t (df.)=test variable (number of degrees of freedom); p=probability of error
** The mean difference is significant at the level ≤ 0.05.*

5.8.2 Employment

Table 18 represents the influence of the life event "work" on behavioural changes after leaving school. Only one statistically significant change can be identified: the difference in behaviour in the domain “new consumer goods”. The mean value of the behavioural change of all those who worked within the year is negative in this domain, which means that people acquire more things on average than was the case in W1 (t(135)=-2.21; p=0.029). Apart from that, there are no significant mean differences.

Table 18: Impact of employment on behavioural changes source: own representation

	mean (W2-W1 with employment no)	mean (W2-W1 with employment yes)	mean difference (W2-W1 with yes - W2-W1 with no)	t (df.)	p
car	-7.08	-7.27	-0.19	-0.04 (133)	0.966
moped/motorcycle	-0.25	1.70	1.95	1.23 (73)	0.223
public transport	-5.43	-8.55	-3.12	-0.72 (132)	0.474
Bicycle	5.44	7.45	2.01	0.73 (132)	0.465
Foot	9.82	4.24	-5.58	-1.44 (132)	0.154
everyday mobility	0.08	0.07	-0.01	-0.08 (135)	0.933
Signature	-0.02	0.07	0.09	1.18 (135)	0.242
regional alimentation	0.02	-0.02	-0.04	-0.32 (135)	0.752
repair/reuse	0.13	0.17	0.04	0.40 (135)	0.691
new consumer goods	0.18	-0.08	**-0.26***	-2.21 (135)	0.029
waste separation	-0.03	0.07	0.10	0.88 (135)	0.381

t (df.)=test variable (number of degrees of freedom); p=probability of error
** The mean difference is significant at the level ≤ 0.05.*

5.8.3 Residential relocation

In the following (see Table 19), the behavioural changes are contrasted with the life event "residential relocation". Significant behavioural changes are found here in driving a car and riding a moped/motorcycle. Both groups, moving yes and no, experience a decrease in car usage. However, the behavioural change is much more pronounced for people who have moved (-0.18% compared to -19.85%). The mean difference is -19.67% and highly significant (t(133)=-4.45; p<0.001). Regarding the change in behaviour when riding a moped/motorbike, a mean difference of -3.43% is evident (t(132)=-2.00; p=0.047). While all those who have not moved ride their moped more than they did a year ago, a small decrease can be seen among those who have changed their place of residence (-1.46%).

Table 19: Impact of residential relocation on behavioural changes source: own representation

	mean (W2-W1 with residential relocation no)	mean (W2-W1 with residential relocation yes)	mean difference (W2-W1 with yes - W2-W1 with no)	t (df.)	p
car	-0.18	-19.85	**-19.67****	-4.45 (133)	<0.001
moped/motorcycle	1.97	-1.46	**-3.43***	-2.00 (132)	0.047
public transport	-9.95	-1.71	8.24	1.83 (132)	0.069
bicycle	4.73	9.74	5.01	1.56 (67)	0.125
foot	4.00	12.29	8.29	1.89 (74)	0.063
everyday mobility	0.13	-0.02	-0.15	-0.96 (135)	0.339
signature	0.02	0.03	0.01	0.09 (135)	0.927
regional alimentation	0.05	-0.10	-0.15	-1.28 (135)	0.202
repair/reuse	0.14	0.17	0.03	0.29 (135)	0.775
new consumer goods	0.09	-0.04	-0.13	-1.04 (135)	0.301
waste separation	-0.02	0.09	0.11	0.90 (135)	0.369

t (df.)=test variable (number of degrees of freedom); p=probability of error
*** The mean difference is significant at the level ≤ 0.01. * The mean difference is significant at the level ≤ 0.05.*

5.8.4 Military or civilian service/volunteering

The correlation between the experience of military service, civilian service or voluntary service is demonstrated below. As can be seen in the following table (see Table 20), there are significant changes in behaviour with regard to the use of cars and bicycles as a means of transport. While the group that does not experience this life event uses the car 10% less than when they were at school, there is hardly any difference in behaviour (only -0.96%) among all those who complete military service, etc. The mean difference is therefore +8.83% with t(133)=1.80 and p=0.044. Regarding cycling, a similar development can be observed. The group that has not experienced the life event rides 8% more of its routes by bicycle than one year ago, for all those who have experienced it, there is only an increase of 2.27% (t(132)=-2.04; p=0.019).

Table 20: Impact of military or civilian service/volunteering on behavioural changes source: own representation

	mean (W2-W1 with Military or civilian service/volunteering no)	mean (W2-W1 with Military or civilian service/volunteering yes)	mean difference (W2-W1 with yes - W2-W1 with no)	t (df.)	p
car	-9.79	-0.96	**8.83***	1.80 (133)	0.044
moped/motorc.	0.80	0.70	-0.1	-0.06 (132)	0.956
public transport	-4.90	-12.13	-7.23	-1.5 (132)	0.128
bicycle	8.29	2.27	**-6.02***	-2.04 (132)	0.019
foot	9.02	1.93	-7.09	-1.68 (132)	0.096
everyday mobility	0.02	0.23	0.21	1.25 (135)	0.213
signature	0.04	-0.01	-0.05	-0.67 (135)	0.506
regional alimentation	-0.02	0.03	0.05	0.32 (135)	0.749
repair/reuse	0.11	0.27	0.16	1.38 (135)	0.170
new consumer goods	0.02	0.12	0.10	0.72 (135)	0.473
waste separation	0.04	-0.03	-0.07	-0.53 (135)	0.600

t (df.)=test variable (number of degrees of freedom); p=probability of error
** The mean difference is significant at the level ≤ 0.05.*

5.8.5 Change of relationship status

The following (Table 21) shows the behavioural changes experienced by people whose relationship status has or has not changed in the course of the last year. This can be the start of a new relationship, a break-up, or a start and a break-up.

There is only one significant change in behaviour at the domain “car”. People with a change in relationship status have a greater reduction in driving than those without a change in relationship. The mean difference of the two groups (life event yes and no) is -11.34% (t(133)=-2.26; p=0.026).

Table 21: Impact of change of relationship status on behavioural changes source: own representation

	mean (W2-W1 with change of relation-ship sta-tus no)	mean (W2-W1 with change of relation-ship sta-tus yes)	mean dif-ference (W2-W1 with yes - W2-W1 with no)	t (df.)	p
car	-4.15	-15.49	**-11.34***	-2.26 (133)	0.026
moped/motorcy-cle	0.08	2.72	2.64	1.41 (132)	0.160
public transport	-8.30	-3.55	4.75	0.96 (132)	0.337
Bicycle	6.47	6.55	0.08	0.03 (132)	0.979
foot	5.98	9.54	3.56	0.80 (132)	0.423
everyday mobil-ity	0.08	0.07	-0.01	-0.06 (135)	0.955
signature	0.05	-0.04	-0.09	-1.00 (53)	0.322
regional alimen-tation	0.03	-0.10	-0.13	-0.98 (135)	0.330
repair/reuse	0.14	0.19	0.05	0.36 (135)	0.720
new consumer goods	-0.01	0.21	0.22	1.62 (135)	0.109
waste separa-tion	0.03	-0.01	-0.04	-0.37 (135)	0.710

t (df.)=test variable (number of degrees of freedom); p=probability of error
** The mean difference is significant at the level ≤ 0.05.*

5.9 Correlation of depths of upheaval on behavioural changes

Subsequently, the three predefined indicators of the depth of biographical change (see chapter 5.4) are correlated with the behavioural changes of the young people. Table 22 represents the results of the Pearson correlation analysis.

The aim here is to find out whether a greater upheaval in life leads to more behavioural changes.

It is investigated whether people who experienced

1) Several life events during the year after leaving school
2) Longer-lasting life events
3) Subjectively more profoundly felt life events (i.e., evaluated that life events have a strong impact on life or as a major biographical upheaval)

have changed their behaviour more, i.e., whether there is a correlation between the indicators and the changes in behaviour.

For this purpose, a Pearson correlation analysis was conducted in order to be able to conclude on any significant correlations.

A significant correlation with a correlation coefficient of -0.276 (p=0.001) can be found between indicator 1 “Life events experienced at the same time” and car driving. According to Cohen, this is a weak correlation. The negative sign of the correlation means that the more life events people have experienced the less they drive now than they did a year ago. The opposite combination, i.e., few life events and an increase in driving, is also possible.

Furthermore, there is a significant correlation (p=0.016) between walking and the third indicator "subjective evaluation of the upheaval". Again, it is a weak, but this time positive correlation (r=0.213). It means that respondents who stated that they had experienced their life events as very drastic, i.e., they felt a great impact on their lives, experienced an increase in walking compared to the previous year. Conversely, people who rated the impact of life events as small, started walking less.

In addition, there is another correlation with p=0.025 that is statistically significant. This shows a connection between indicator 3 and the domain "regional alimentation". The correlation coefficient is -0.196, i.e., negative, and weak. The deeper the upheaval experienced because of the life events, the more alimentation shifted to climate-damaging. Part of the domain is the consumption of regional, seasonal food (see Table 12.

According to this, people who are in the middle of a biographical upheaval eat less consciously.

Table 22: Correlation of depths of upheaval on behavioural changes source: own representation

		indicator 1 (life events experi-enced at the same time)	indicator 2 (life events weighted according to duration)	indicator 3 (subjective evaluation of the up-heaval of life events)
car (W2-W1)	**r**	**-0.276****	0.022	-0.171
	p	0.001	0.814	0.053
moped/motorcycle (W2-W1)	**r**	-0.012	-0.025	0.056
	p	0.890	0.793	0.529
public transport (W2-W1)	**r**	0.123	0.108	0.155
	p	0.163	0.255	0.081
bicycle (W2-W1)	**r**	0.151	0.006	0.029
	p	0.085	0.947	0.749
foot (W2-W1)	**r**	0.086	-0.051	**0.213***
	p	0.331	0.591	0.016
everyday mobility (W2-W1)	**r**	-0.011	0.071	0.021
	p	0.901	0.451	0.816
signature (W2-W1)	**r**	-0.025	0.054	-0.054
	p	0.775	0.566	0.537
regional alimentation (W2-W1)	**r**	-0.130	0.175	**-0.196***
	p	0.135	0.061	0.025
repair/reuse (W2-W1)	**r**	0.022	-0.050	0.031
	p	0.800	0.594	0.728
new consumer goods (W2-W1)	**r**	-.097	0.108	-.042
	p	0.265	0.250	0.635
waste separation (W2-W1)	**r**	0.065	-0.053	-0.063
	p	0.458	0.576	0.473

r=Pearson correlation coefficient; p=probability of error
*** The correlation is significant at the level ≤ 0.01. * The correlation is significant at the level ≤ 0.05.*

The Pearson correlation coefficient only looks at linear correlations, i.e., only correlations which go in the same direction. In order to recognise non-linear correlations, scatter diagrams were drawn up.

However, even with these, no non-linear correlations were concluded. As an example, three scatter diagrams follow, which show that “signature” does not correlate with one of the three indicators, not even non-linearly.

The X-axis represents indicators 1,2 and 3 and the Y-axis shows the behavioural changes in signature.

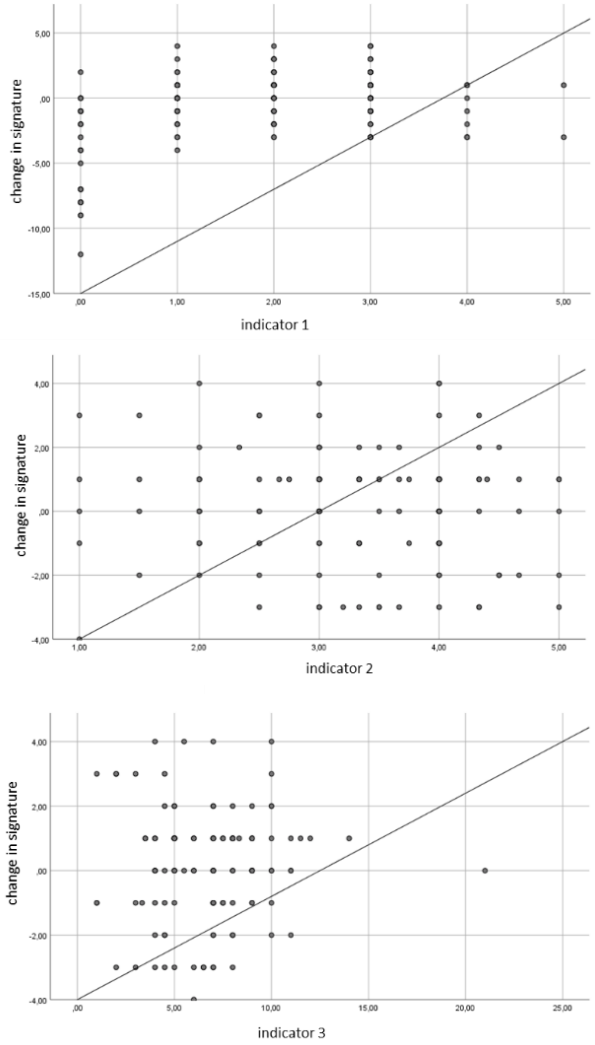

Figure 34: Scatter diagrams of the correlation "signature" and Indicator 1, 2, 3 source: own representation

6 Discussion

In the following, the most interesting findings from the results section are highlighted, discussed, and evaluated. In this chapter, the four research questions are answered, each of which is discussed individually in a sub-chapter. The last sub-chapter of the discussion deals with the outlook for further research.

6.1 Behavioural change of investigated consumption domains

How does the consumption behaviour of young people change within the year after leaving school?

Table 13 in chapter 5.6 demonstrates the results of the means test where the behaviour before and after school graduation are compared.

Surprisingly, there were hardly any behavioural changes in the young people's consumption behaviour after leaving school, which suggests that their habits seem to be very established or that they may have had the freedom to live as they please before. Through Covid-19, it would have been expected that the young people would experience fewer life events, as moving to a new city is less attractive because of the online studying and working. However, as explained in chapter 5.2, the school leavers have experienced events and thus also a certain biographical upheaval in their lives.

The table below (Table 23) represents the significant changes in behaviour before and after leaving school. With one exception, the changes in behaviour were exclusively in mobility. Here it can be seen that young people have driven less since leaving school, as well as used public transport less. However, there was a significant increase in cycling and walking. One reason for the minimisation of car journeys can be that the availability of a car is gone in the case of a move or bicycle infrastructure facilitates a change to another means of transport. These conclusions can be confirmed with Figure 27 and Figure 28 in chapter 5.2, page 47. More than 80% of all those who moved stated that public transport and cycling conditions improved in the new place of residence. The minimised use of public transport could also be explained by Covid-19, as the use of public transport was discouraged/prohibited at least during curfew periods. The increase in cycling and walking could also be an effect of the pandemic, as many jobs could/had to be done from home and the house was only left for short trips, such as shopping. The fact that there was generally more time, as travelling to appointments/work etc. was not necessary and public transport was prohibited, perhaps more people started active mobility, i.e., walking and cycling. This influence of Covid-19 on increased active mobility is also confirmed by studies in England (Cornes et al. 2021). In addition to the described changes in mobility behaviour, there was another significant change in one consumption domain. Compared to the behaviour during school, school leavers began to behave in a more climate-friendly way regarding "repair/reuse". The young people now repair their electronic devices or clothes more often or buy second-hand. The reason for people to

become more conscious consumers regarding repairing may relate to low disposable income (see Table 5) and that devices and clothes are no longer paid for by parents, although the behavioural difference of +0.15 is rather weak.

Table 23: Significant behavioural changes before and after life events source: own representation

 car	↓↓ -7.18
 public transport	↓↓ -7.06
 bicycle	↑↑ +6.49
 foot	↑↑ +6.91
 repair/reuse	↑ +0.15

6.2 Correlation of behavioural change after life events in mobility with other consumption domains

To what extent are behavioural changes in mobility patterns related to behavioural changes in other consumption domains?

Table 16 (chapter 5.7, page 66) is essential in answering the research question on the intercorrelations between changes in mobility behaviour and changes in behaviour in other domains.

An interesting finding of this analysis is that two of the correlations found are inverse correlations, i.e., a climate-friendly behaviour in one domain is associated with a climate-damaging behaviour in the other domain.

On the one hand, there is the inverse correlation between cycling (cycling more = more environmentally friendly) and “everyday mobility” (a higher value stands for an environmentally friendly lifestyle in this area, e.g. rarely being picked up by car and more likely to carpool). The negative value thus confirms the combination "environmentally friendly combined with environmentally harmful item" and shows the contrast.

Furthermore, there is a correlation between riding a moped or motorbike and the domain "new consumer goods". The correlation coefficient here is positive, but since an increase in motorbike riding has a negative effect on the environment and a high value for new consumer good stands for climate-friendly behaviour, the correlation also indicates a climate-friendly-climate-damaging connection. An increased use of the motorbike compared to the previous year thus leads to the purchase of fewer consumer goods, a more conscious, more sustainable consumption.

Besides the two inverse correlations, there are two weak positive correlations: between public transport and everyday mobility, and between cycling and repair/reuse. This means that the behaviour in these two areas has changed significantly in the same direction in relation to climate friendliness (either both more climate-friendly or both more climate-damaging). People who use public transport more than a year ago also have themselves picked up less often or carpool more often (high value for everyday mobility). In addition, people who cycle more often also repair their things more often, such as clothes or electrical appliances, or buy second-hand more often. On the other hand, this could also indicate that people who use public transport less are more environmentally damaging in terms of everyday mobility and people who cycle less repair fewer things.

Overall, there are few significant correlations between behavioural changes in the mobility domain and behavioural changes in other domains, and even those that do exist are weak or inversely correlated. This shows that the behavioural changes of the different consumption domains are not strongly correlated. Thus, no climate-friendly lifestyle change is observable, in the sense that school leavers consistently behave in a more climate-friendly way across different domains than they did a year ago.

It could therefore mean that the switch to more climate-friendly modes of transport depends more on external factors such as car availability, public transport connections,

cycle availability, cycle path network, etc. than on an individual decision to act in this way because it is better for the environment. Young people may have changed their mobility behaviour due to a move and thus new conditions, new distances to be travelled to new education or jobs, and still behave in other consumption domains as they did when they were at school.

The following table (Table 24) shows significant correlations. The pictogram of a tree represents climate-friendly behaviour and an oil barrel represents climate-damaging behaviour. It is therefore evident that there is a positive relationship (both climate-friendly or both climate-damaging behavioural shifts) between public transport and everyday mobility, and between cycling and repair/reuse. However, there are inverse correlations between moped driving and new consumer goods and cycling and everyday mobility, i.e., one behaviour became more climate-friendly, the other more climate-damaging.

Table 24: Correlation of behavioural change after life events in mobility with other consumption domains, W2-W1
source: own representation

	moped/motorcycle	public transport	bicycle
everyday mobility		+ or +	+
repair/reuse			+ or +
new consumer goods	+		

…climate-friendly

…climate-damaging

6.3 Impact of life events on behavioural changes

Do life events after school graduation promote climate friendly behavioural changes in consumption domains?

The theory section already deals with the state of research on the influence of life events on behavioural changes. In the results section, the evaluation of the longitudinal survey follows and compares the mean values of the behavioural differences for two groups: life event experienced, life event not experienced for each event individually.

It is therefore interesting to compare the results of previous research with the results of this survey.

In the theory part, however, the question was treated differently as firstly seven life events were considered (in contrast to the results part where five life events were looked at, as two of the life events were excluded due to the small proportion of respondents who experienced them) and secondly, four consumption domains were dealt with (instead of seven consumption domains as in the results section due to the factor analysis, see chapter 5.5). Another difference between the theory part and the results part is that in the results the up/down arrows indicate the direction of change (increasing, decreasing in mobility behaviour or more environmentally friendly/environmentally harmful in the consumption domains).

With the current state of science, it is not possible to present such a precise representation of the behavioural changes, as the direction depends very much on other factors such as the type of new place of residence, etc.

Table 2 in the theory section (chapter 3.5) summarises the state of research on correlations between life events and behavioural changes. Following this table, Table 25 below presents the findings of the study in the same way. The significant behavioural changes are listed and, as in the theory section, described with arrows depending on the strength of the change. More details on the rating scale with regard to the expression of the increase and decrease can be found in Table 26.

Table 25: Representation of the significant results regarding the impact of life events on consumption domains
source: own representation

	change in education	change in employ-ment	relocation	military or civilian ser-vice/volun-teering	change in relation-ship
car	↓↓ -8.96	o	↓↓↓↓ -19.67	↑↑ +8.83	↓↓↓ -11,34
moped/ motorcycle	o	o	↓ -3.43	o	o
public transport	o	o	o	o	o
bicycle	o	o	o	↓↓ -6.02	o
foot	↑↑ +8.86	o	o	o	o
everyday mobility	o	o	o	o	o
signature	o	o	o	o	o
regional al-imentation	o	o	o	o	o
repair/re-use	↓ -0,23	o	o	o	o
new con-sumer goods	o	↓↓ -0.26	o	o	o
waste sep-aration	o	o	o	o	o

Representation of the mean difference of the behavioural change from W1 to W2 of the group life event experienced minus the behavioural change from W1 to W2 of the group life event not experienced. The more arrows shown, the stronger the change.
-…not investigated; o…no significant change; ↑…significant increase; ↓…significant decrease

Table 26: Details on rating scale table 25
source: own representation

	↑ or ↓	↑↑ or ↓↓	↑↑↑ or ↓↓↓	↑↑↑↑ or ↓↓↓↓
mobility data	0 – 5 (+/-)	6 - 10 (+/-)	11 - 15 (+/-)	16 - 20 (+/-)
consumption domains	0 - 0.25 (+/-)	0.26 - 0.5 (+/-)	0.51 – 0.75 (+/-)	0.76 - 1 (+/-)

As was the case with other statistical analyses before, the small number of significant mean differences is also striking here. This may be due to the fact that there were generally few changes in behaviour, i.e., people who experienced certain life events also experienced hardly any changes in their habits.

In the following, the impact of life events on behavioural changes in the four consumption domains are discussed in more detail.

- ***Impact on mobility:***

At the beginning, significant behavioural differences found in the survey are summarised.

In the previous table (Table 25) the use of the means of transport "car" shows the most significant changes. Four of the five life events have a significant influence on car usage. The events of moving house and change in relationship status have the greatest influence. People who have experienced these two life events have greatly reduced their car use compared to the previous year. On the one hand, this could be explained by the fact that in the case of a move, as well as in the case of the break-up of a relationship, the availability of the car may be eliminated (the car of the parents or the former partner can no longer be used etc.). On the other hand, concerning those who moved, could this be also explained by the better public transport access or better cycling infrastructure at the new place of residence. This is shown in Figure 27 and Figure 28 in chapter 5.2, page 46 where more than 80% of all people who moved stated that public transport and cycling conditions had improved. Another possible explanation is that at the new place of residence there is better accessibility by other means of transport than the car for daily errands, hobbies, etc., which means that the car must be used less often. Covid-19 is also an influential factor here, as people must travel fewer long distances and may have more time for daily errands on foot or by bicycle.

A significant reduction in car use, although smaller, could also be demonstrated for all those who started studying. As shown in chapter 5.2, the life event change in education was very often experienced in combination with other events. 45% and 44% of all respondents who experienced two or more events experienced education and employment and education and residential relocation, respectively, during the year after school. This could explain the significant mean difference compared to all those who did not study. Change in employment did not lead to a significant change in mobility behaviour, but

relocation strongly influences mobility behaviour, which explains the reduction in car use by students.

While the three effects of life events just described are positive for the environment, i.e., they lead to a reduction in car use, it is interesting that only the life event of military service or civilian service/volunteering leads to an increase in car use. People who did not experience the life event used the car less, people in the armed forces etc. used it approximately as often as in the previous year. One reason for this could be that this life event was rarely experienced in combination with a residential relocation. Only 5 of the 94 people who experienced more than two life events experienced “military or civilian service/volunteering” and a move. As shown before, the change of residence has the greatest influence on the use of the car is a possible explanation for this effect.

When looking at the changes in behaviour in relation to moped/motorcycle riding, it can be seen that these are only significantly influenced by the life event of moving. In contrast to driving a car, however, the mean value difference is very small. This can also be explained by the new public transport services at the new place of residence and the possible loss of moped availability.

Although there were significant behavioural changes in public transport use in the overall group (decrease of 7%), there is no significant influence of a specific life event.

As in the case of car driving, the experience of the life event "military or civilian service/volunteering" also causes a significant environmentally harmful change in behaviour in the case of cycling. Here, too, the move, which does not take place in combination, may be an explanation.

Change in education leads to increased walking. Since people often must change their place of residence for training or studies, it may be possible to cover more distances on foot at the new place of residence than before.

The findings in the theory section also show that mobility behaviour is most influenced by life events. Moreover, it is the area that is already best researched.

The expression of the change in the theory section (see Table 2, page 25), which is shown with arrows, largely corresponds to the changes explored in the survey. Again, relocation was found to have the greatest influence on mobility behaviour.

The reasons for this are that habits tend to be broken or weakened in these turning points in life or the availability of mobility tools changes (Beige and Axhausen 2012). Furthermore, in times of relocation, people are more open for information material regarding mobility offers and therefore more willing to try out new means of transport such as scooters, bicycles or carsharing (Bamberg et al. 2003; Harms and Lanzendorf 2007).

While in the theory section change in employment was marked as the second most influencing life event, no influence is significantly demonstrated in the evaluation of the survey.

However, education, military or civilian service and change of relationship influence the behaviour in the area of transport. According to (Harms and Lanzendorf 2007) the willingness to absorb information increases after a change of relationship, which increases the willingness to switch to a new means of transport.

- ***Impact on alimentation:***

According to the current state of research, eating behaviour is influenced by three life events. Education and relocation have been identified as moderately influential events and change in relationship status as a weakly influential event.

In the survey the behaviours concerning alimentation were assigned to the factors "signature" (meat consumption, purchase of organic food) and "regional alimentation" (purchase of seasonal, regional food).

Even though other research papers have identified correlations between changes in dietary behaviour, no significant influences could be confirmed in the conducted survey.

While findings of studies (Herde and Schäfer 2006; Schäfer et al. 2017) link, for example, the level of education with conscious, sustainable consumption, this connection cannot be proven. This could be explained by the fact that the young people surveyed have the same educational level and are only at the beginning of their studies, apprenticeship etc. and may need to study longer before behavioural changes and more awareness in this area occur.

- ***Impact on consumer goods:***

The behaviours concerning consumer goods were divided between "repair/reuse" and "new consumer goods".

The findings of the research are not consistent with the results of the study. Within the framework of the research, the connection with relocation was determined. The evaluation of the survey revealed that a change in education makes people less willing to repair clothes/devices and a change in employment leads to an increase in the acquisition of new consumer goods such as new clothes or new electronic devices. One reason why people who have experienced change in education fix less than they did when they were at school could be that university, apprenticeship etc. requires a lot of time, especially at the beginning of education, which leaves little time for repair.

The relation between work and new consumer goods could be explained by the increase in available money per month due to income.

In both cases, therefore, a negative development in relation to the environment is detectable through the experience of the life events, although this is small due to the minor changes in behaviour.

It is also worth mentioning that “new consumer goods” is the only area that is significantly influenced by work in the survey evaluation.

- **Impact on waste:**

The behaviours related to the consumption domain waste were assigned to signature and waste separation. Correlations between life events and behavioural changes have hardly been researched so far. Only evidence for the influence of a move or the associated change in household composition could be found.

Within the framework of the own research, no significant relations were found. One reason for this could be that there were hardly any behavioural changes regarding waste. One explanation could be that waste separation is generally very important in Austria and is therefore practised in the parental home, as well as later in the shared flat, dormitory, etc.

6.4 Correlation of depths of upheaval on behavioural changes

Does the degree of upheaval after life events promote climate friendly behavioural changes in consumption domains?

The degree of depth of the upheaval was determined with three defined indicators.

The aim was to use the indicators to describe life events more precisely, since more aspects than simply naming an event are decisive for how an event is experienced.

The questionnaire therefore not only asked which event was experienced, but also how long it lasted (although it must be mentioned here that this is not possible for every event; in the case of relocation and change of relationship, the questionnaire only asked about the number of experienced events and not the time slot).

In addition, it was asked how the life event was experienced by the respondents. "How much did the life event change your life?" was the exact question and the five-digit response scale went from 1=everything remains the same to 5=everything has changed.

The three indicators that were assumed to have an influence on behavioural change were as follows:

1) Life events experienced at the same time
2) Life events weighted according to duration
3) Subjective evaluation of the upheaval of life events

As already mentioned in chapter 5.4.4, the three defined indicators to determine the depth of the biographical upheaval did not lead to any significant correlations (see Table 10, page 56). The assumption that people who experience more events or longer-lasting events subjectively go through a higher degree of upheaval could not be proven.

One reason for this could be that the objective and subjective values are decoupled, i.e., there is no correlation between the duration or the number of simultaneous events and subjective evaluation, but rather each life event must be considered individually. For example, a change in relationship status, which can mean a breakup or new relationship, may be perceived by one person subjectively as a very big upheaval, but by another as no change in life. In addition, the lack of correlation could also be due to the fact that the

question was not properly accepted or answered in relation to the subjectivity of respondents, and it would have been necessary to query the subjective influence over several questions.

For this reason, it was not possible to create a holistic indicator that summarises all aspects (number of life events, duration of the events, subjective perception of the events), which is why all three indicators were used individually in the further analysis.

The results of the Pearson correlation analysis, which shows correlations between the three indicators and behavioural change, are summarised in Table 22, page 74.

It is striking that there are only a few significant correlations, and only weak ones at that.

Indicator 1 “Life events experienced at the same time” correlates with only one behavioural change related to car use. The inverse correlation indicates that people who have experienced many life events within the year now use the car less, and people who have experienced few events use the car more. As mentioned in chapter 0, three of the five life events (education, residential relocation and change in relationship) lead to a reduction in car use. It is therefore likely that when experiencing several events, there are events that have a negative influence on the use of a car. When people experience multiple events, it also means that they probably have to travel new routes, e.g., a new way to work, study, etc. Therefore, in many cases, habits have not yet developed, and people have to find out for themselves which means of transport are most attractive for which route. Furthermore, mobility conditions often change as a result, new public transport cards are bought or car availability decreases.

It is surprising that the second indicator “Life events weighted according to duration” does not correlate with any behavioural changes of the young people, i.e., the duration of the events has no influence on the behaviour.

Regarding indicator 3, the subjective evaluation of the upheaval, there are two significant changes in behaviour. There is a weak positive correlation with walking. People who experienced a high degree of upheaval started to walk more. Secondly, there is an inverse correlation with "regional alimentation", which means that people who experienced a major upheaval consumed less regional food.

People who state that their lives are highly changed due to the life events they have experienced mean that they have new conditions due to the upheaval and presumably must reorientate themselves. This is interpretable in the sense that people going through a highly transformative time are tempted to break habits and form new behaviours, requiring cognitive resources. Habits can relieve the cognitive system and reduce stress. Therefore, a time of a big upheaval is in many cases very energy consuming (Wood et al., 2002).

Because of this, people might start to walk more to compensate, to be able to switch off better or to consciously take a break from stress. In relation to nutrition, this could mean that people are overwhelmed by the new situation and therefore cannot devote resources to a conscious, sustainable diet. An example of this is when a person perceives the end of a relationship, the start of an internship or a residential relocation as a very strongly

changing experience, i.e., a very big upheaval. As a result, this person places less value on regional food and tends to consume imported products such as chocolate, coffee, or tropical fruits, which has a negative impact on the climate (von Koerber and Leitzmann 2012).

The analysis in relation to the influence of life events individually on behavioural changes (see 0) shows more correlations than this in relation to the depth of the upheaval.

The reason for this could be that the group of all those who have experienced one life event is more homogeneous than those who have experienced many life events. Changes in behaviour may have been experienced, but not in the same domains, which means that no significant correlations are discernible.

Since the indicators do not correlate with each other and, for example, the indicator that weights life events according to duration does not show any significant correlations, it cannot be guaranteed that the indicators classify the degree of upheaval. As a result, the research question cannot be answered unambiguously.

Table 27: Representation of the significant correlations of depths of upheaval on behavioural changes
source: own representation

	indicator 1 (life events experienced at the same time)	**indicator 3 (subjective evaluation of the upheaval of life events)**
car (W2-W1)	weak inverse correlation	
foot (W2-W1)		weak positive correlation
regional alimentation (W2-W1)		weak inverse correlation

6.5 Outlook for further research

The knowledge gained could be supplemented by further research.

Firstly, it would be interesting to conduct a similar survey with a larger sample. The longitudinal study consisted of survey 1 with 504 participants and survey 2 with 136. Although significant correlations could be concluded, it would still be interesting to survey more people to develop a lower margin of error and to be able to draw better conclusions about the overall population.

Another interesting way to do research would be by looking at life events more specifically. This would require asking more information about life events experienced than was done in this work. As a result, one could differentiate between moving from country to city, city to city, city to country, country to country, or between studying at a university, doing an apprenticeship, starting a new relationship or breaking up etc. The way in which a specific life event is experienced probably also influences the change in behaviour.

Furthermore, as mentioned earlier, this survey was conducted during the Covid-19 pandemic. Although questions were asked in an attempt to determine the impact of Covid, it is unclear in what way the young people's behaviour was changed as a result of the pandemic.

For this reason, it would be interesting to conduct a similar study in the future, also to put the results of this study in relation to the results of this work.

7 Concluding observations

The present master's thesis provides an insight into the current state of research on the influence of life events on behavioural change. It was recognised that some relations are unexplored, like the impact on changes in alimentation, consumer goods and waste, so the aim of the thesis was to close the existing knowledge gaps.

Therefore, a large part of the work deals with the evaluation of a longitudinal study in the period from March 2020 to April 2021.

With the help of the study, answers to the following research questions were tried to be found:

- How does the consumption behaviour of young people change within the year after leaving school?
- To what extent are behavioural changes in mobility patterns related to behavioural changes in other consumption domains?
- Do life events after school graduation promote climate friendly behavioural changes in consumption domains?
- Does the degree of upheaval after life events promote behavioural changes in consumption domains?

From the data collection it emerged that there were few changes in the behaviour of the young people in comparison before and after leaving school. A significantly reduced use of the means of transport "car" and "public transport" and an increased use of "bicycle" and "walking" were detected. Furthermore, the study showed significant results that people became more environmentally friendly in terms of repairing and reusing. This means that people repair devices or clothes or buy second-hand more often since leaving school.

The comparison of behavioural changes in mobility with behavioural changes in the other investigated domains shows four significant correlations, but these are generally weak. An interesting finding is that half of the correlations found are inverse, i.e., an environmentally friendly change in behaviour in one area is related to an environmentally harmful change in another area. On the one hand, this is the case for cycling and being picked up, and on the other hand, it is the case for riding a moped and purchasing new consumer goods. Positive correlations were found between public transport and pick-up and between cycling and repairing things. In general, however, the results of this correlation analysis indicate that behavioural changes of young people with regard to mobility are not strongly related to behavioural changes in other areas, i.e., young people did not consistently become more climate-friendly across several areas.

Furthermore, the aim was to find out which life events promote behavioural changes. The most significant influences were found in relation to car driving. While the life events relocation, change in relationship and change in education led to reduced car driving, an increase was found for people who experienced military or civilian service/ volunteering. Furthermore, the influence of relocation on reduced moped riding was detected and the

influence of education on increased walking. Military or civilian service, volunteering, on the other hand, affects significantly reduced cycling. While the rest of the life events promote positive, i.e., climate-friendly behavioural changes in the mobility sector, the experience of military service etc. leads to climate-damaging changes in the mobility sector. Only two significant changes in behaviour were found in the other investigated consumption domains. It was interesting that these were negative behavioural changes, i.e., people became more environmentally damaging. It was found that education leads to fewer things being repaired and employment has an impact on more consumer goods being purchased.

To answer the research question regarding the correlation between the degree of upheaval and behavioural change, three indicators were determined that represent the depth of upheaval. These describe the number of life events experienced, the duration of the events and the subjective perception of the events. The analysis shows three significant, albeit weak, correlations. A negative relation was found between driving and experiencing many life events. This means that people who have experienced many events drive less than they did a year ago. Furthermore, there are two behavioural changes that correlate with the subjective evaluation of the depth of the upheaval. People who perceived the upheaval as very strong walk more, but eat less regionally/seasonally, i.e., less environmentally friendly.

Through the investigation, new insights were found in relation to how to promote behavioural change among young people. As adolescents are shaping tomorrow's society as adult citizens, it is essential to make the transition to a more sustainable, resource-saving lifestyle at this age.

The knowledge gained could be supplemented by further research. A possibility would be to conduct a similar survey with a larger sample in order to get a lower margin of error and be able to draw better conclusions about the overall population. In addition, it would be interesting to investigate the upheaval in more detail to be able to make clearer statements about relations between life events and behavioural changes. Furthermore, as mentioned earlier, this survey was conducted during the Covid-19 pandemic. For this reason, it would be interesting to compare the results of a study that is not influenced by Covid-19 restriction with this study.

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Appendix

Enclosed is an excerpt of the questions from the second wave of the project “Spillover effects: Understanding and empowering spillover behaviour for low carbon consumption among young Austrians”. These questions were relevant for this master's thesis.

Umweltverhalten

Im ersten Teil geht es um verschiedene Verhaltensweisen in deinem Alltag. Wichtig ist, dass du alle Fragen so ehrlich und so gut wie möglich beantwortest. Es gibt keine richtigen oder falschen Antworten.

Auf einer Skala von „nie“ bis „immer“, wie oft machst du diese Verhaltensweisen?

Bitte kreuze an:

	1-nie	2-selten	3-manchmal	4-oft	5-immer
Mich von meinen Eltern abholen lassen, um vom Ausgehen nachhause zu kommen.					
Kaputte elektronische Geräte wenn möglich reparieren lassen oder selbst reparieren, anstatt sie wegzuwerfen (z.B. PC/Notebook, Spielekonsole, Fernseher, Hi-Fi-Anlage).					
Das Licht abdrehen, wenn es nicht benötigt wird.					
Beim Duschen während des Einseifens das Wasser abdrehen.					
Nichts in den Restmüll werfen, für das es getrennte Mülltonnen gibt (z.B. Papier, Leichtverpackung).					
Fleisch und Wurstwaren essen.					
Neue Kleidung und Schuhe kaufen oder mir schenken lassen, um immer möglichst modisch angezogen zu sein.					
Produkte in wiederverwendbaren Verpackungen kaufen (zum Beispiel in Pfandflaschen).					
Elektronische Geräte von der Stromversorgung trennen, wenn ich sie gerade nicht benutze (z.B. PC/Notebook, Spielekonsole, Fernseher, Hi-Fi-Anlage).					

Eine Fahrgemeinschaft organisieren, wenn ich mit dem Auto zu Freizeitaktivitäten fahre.					
Kaputte Kleidung und Schuhe wenn möglich reparieren lassen oder selbst reparieren, anstatt sie wegzuwerfen.					
Bei Lebensmitteln Bio-Produkte kaufen.					
Papier nur in Mistkübel speziell für Altpapier werfen.					
Gebrauchte elektronische Geräte kaufen (z.B. PC/Notebook, Spielekonsole, Fernseher, Hi-Fi-Anlage).					
Neue elektronische Geräte kaufen oder mir schenken lassen, um immer auf dem neuesten Stand der Technik zu sein (z.B. PC/Notebook, Spielekonsole, Fernseher, Hi-Fi-Anlage).					
Frisches Obst und Gemüse entsprechend der Jahreszeit kaufen.					
Lebensmittel kaufen, die aus Österreich stammen.					
Auf Plastikverpackungen verzichten.					
Kürzer duschen, um Wasser zu sparen.					

In diesem Abschnitt geht es weiterhin um deine regelmäßigen Aktivitäten. Bitte gib jeweils die passende Zahl zur Häufigkeit an. Wenn du unsicher bist, dann versuche eine Schätzung.

Gibt es eine Badewanne in dem Haus oder der Wohnung, in der du lebst?

- Ja
- Nein

Wie oft badest du in einer durchschnittlichen Woche von Montag bis Sonntag?

Wenn du seltener als einmal pro Woche badest, dann gib bitte einen Wert zwischen 0 und 1 an. Zum Beispiel wenn du einmal im Monat badest, dann gib bitte den Wert 0,25 an.

Anzahl der Bäder: ____

Wie oft duschst du in einer durchschnittlichen Woche von Montag bis Sonntag?

Anzahl der Duschen: ____

Wie viele Stunden nutzt du elektronische Geräte an einem typischen Tag während deiner Freizeit? (z.B. PC/Notebook, Spielekonsole, Fernseher, Hi-Fi-Anlage; dein Smartphone zählt nicht dazu)

Wenn du Geräte nicht jeden Tag nutzt, dann gib bitte einen Wert zwischen 0 und 1 an. Zum Beispiel wenn du elektronische Geräte nur jeden 2. Tag für eine Stunde nutzt, dann gib bitte 0,5 an. Wenn du dir nicht sicher bist, versuche eine Schätzung.

Anzahl der Stunden pro Tag: ____

Welche Temperatur hat in der Heizperiode das Zimmer, in welchem du tagsüber die meiste Zeit verbringst?

Als Hilfe für deine Einschätzung: Die meisten Menschen finden in Wohnräumen 19-22 Grad angenehm, wenn sie langärmelige Kleidung tragen. Wenn du keine Temperaturschätzung machen kannst, gehe weiter zur nächsten Frage!

Grad Celsius: ____

Wie viele Stunden nutzt du Video-Streaming an einem typischen Tag (z.B. Netflix, YouTube, Amazon Prime, Sky, …)?

Wenn du Video-Streaming nicht jeden Tag nutzt, dann gib bitte einen Wert zwischen 0 und 1 an. Zum Beispiel wenn du jeden 2. Tag für eine Stunde streamst, dann gib bitte 0,5 an. Wenn du dir nicht sicher bist, versuche eine Schätzung.

Anzahl der Stunden pro Tag: ____

Bist du im Jahr 2020 geflogen?

- Ja
- Nein

Anzahl der Flüge innerhalb Europas (Hin- und Rückflug zählt als ein Flug): ____

Anzahl der Flüge außerhalb Europas (Hin- und Rückflug zählt als ein Flug): ____

Mobilität

Nun beschreibe bitte deine alltäglichen Wege, die du normalerweise jede Woche zurücklegst.

Füll bitte drei Tabellen aus, wie du im letzten Monat unterwegs warst: Zuerst wie oft in der Woche du bestimmte Wege zurückgelegt hast, anschließend wie lange diese Wege waren, und dann welche Verkehrsmittel du dabei verwendet hast.

Wie oft hast du im letzten Monat Wege zu oder von den folgenden Aktivitäten unternommen?

	Arbeit/Ausbildung (z.B. Studium, Schule, Nebenjob, Praktikum, Wehr-/Zivildienst)	**Einkäufe/Erledigungen** (z.B. Supermarkt, Arztbesuch, jemanden abholen/bringen)	**Hobbys** (z.B. Sport, Verein, Musikschule)	**Unternehmungen** (z.B. mit Freunden etwas

				machen, Ausgehen, Veranstaltungen, Konzerte)
Nie				
Einmal im Monat				
An 2 bis 3 Tagen pro Monat				
An 1 bis 2 Tagen pro Woche				
An 3 bis 4 Tagen pro Woche				
An 5 bis 7 Tagen pro Woche				

Wenn du an den letzten Monat zurückdenkst: An wie vielen Tagen pro Woche hast du zuhause im Homeoffice oder Distance Learning für deine Arbeit oder für deine Ausbildung gearbeitet?

- An 0 Tagen pro Woche
- An einem Tag pro Woche
- An 2 Tagen pro Woche
- An 3 Tagen pro Woche
- An 4 Tagen pro Woche
- An 5 Tagen pro Woche
- An 6 Tagen pro Woche
- An 7 Tagen pro Woche

Wie weit sind deine üblichen, regelmäßigen Aktivitäten von deiner Wohnung entfernt?

Bitte gib für jede Aktivität die ungefähre Kilometerzahl an. Wenn du verschiedene Ziele innerhalb derselben Aktivität (z.B. Studium und Nebenjob in der Aktivität Arbeit/Ausbildung) hast, dann gib die durchschnittliche Weglänge an.

	Arbeit/Ausbildung (z.B. Studium, Schule, Nebenjob, Praktikum, Wehr-/Zivildienst)	Einkäufe/Erledigungen (z.B. Supermarkt, Arztbesuch, jemanden abholen/bringen)	Hobbys (z.B. Sport, Verein, Musikschule)	Unternehmungen (z.B. mit Freunden etwas machen, Ausgehen, Veranstaltungen, Konzerte)
Bis 5 km				
Mehr als 5 bis 10 km				
Mehr als 10 bis 20 km				
Mehr als 20 bis 50 km				
Mehr als 50 km				
Ich habe keine solche Wege				

Wie teilen sich deine Wege auf die verschiedenen Verkehrsmittel auf?

Bitte teile die 100% innerhalb jeder Aktivität auf. Die Summe der Prozentwerte in einer Spalte muss 100% ergeben. Zum Beispiel in der Spalte Arbeit/Ausbildung sollen die Verkehrsmittel zusammengezählt 100% ergeben.

Beziehe dich auf die Anzahl der Wege, nicht auf die zurückgelegte Wegstrecke. Falls du auf einem Weg mehrere Verkehrsmittel verwendest, dann beziehe dich auf jenes Verkehrsmittel, mit dem du den Großteil der Wegstrecke zurücklegst.

Wenn du in einer Aktivität gar keine Wege unternimmst, dann trage in dieser Spalte einfach gar keine Werte oder lauter Nullen ein.

	Arbeit/Ausbildung (z.B. Studium, Schule, Nebenjob, Praktikum, Wehr-/Zivildienst)	Einkäufe/ Erledigungen (z.B. Supermarkt, Arztbesuch, jemanden abholen/bringen)	Hobbys (z.B. Sport, Verein, Musikschule)	Unternehmungen (z.B. Mit FreundInnen etwas machen, Ausgehen, Veranstaltungen, Konzerte)
Auto				
Moped, Motorrad				
Öffentliche Verkehrsmittel				
Fahrrad				
Zu Fuß, Longboard				
Sonstiges				

Lebensereignisse im letzten Jahr

Lebensereignisse sind persönliche biografische Veränderungen wie zum Beispiel Wehr- oder Zivildienst, Umzug in eine andere Wohnung oder in eine andere Stadt, Beginn eines Studiums oder Beginn eines regelmäßigen Jobs. Das Jahr nach der Matura ist eine typische Übergangsphase, in der junge Menschen in einem kurzen Zeitraum von vielen verschiedenen Lebensereignissen betroffen sind. Mit den folgenden Fragen wollen wir verstehen, was sich bei dir persönlich in dieser Übergangsphase verändert hat.

Bitte beschreibe, welche Lebensereignisse du im letzten Jahr seit März 2020 erlebt hast und wie sie sich auf dich ausgewirkt haben. In welchem Zeitraum hast du diese Lebensereignisse erlebt? Falls du bestimmte Lebensereignisse mehrmals erlebt hast (z.B. mehrere Jobwechsel oder mehrere Umzüge), dann kannst du mehrere Zeiträume angeben.

Hast du 2020 die Matura bestanden?

- Ja
- Nein

Welche der folgenden Lebensereignisse hast du im letzten Jahr seit März 2020 erlebt?

Falls sich dein Beziehungsstatus geändert hat, kannst du das bei einer eigenen Frage weiter unten angeben. Du brauchst dieses Lebensereignis also nicht hier unter "sonstiges Lebensereignis" angeben.

Falls du ein "sonstiges" Lebensereignis angeben möchtest, beschreibe dieses bitte kurz in dem Feld hinter der Angabe. Das Kästchen wird dann automatisch angehakt.

- Zivildienst, Bundesheer oder Freiwilliges Soziales Jahr
- Arbeiten (Sommerjob, Praktikum, Nebenjob, Fixanstellung, etc.)
- Beginn einer Ausbildung (Studium, Lehre, etc.)
- Wechsel meines Wohnortes
- Längere Reise
- Schwere Krankheit oder Unfall
- Nichts davon
- Sonstiges (Selbstfindungsphase, Geburt eines Kindes, etc.):

Wenn Lebensereignis „Zivildienst, Bundesheer oder Freiwilliges Soziales Jahr“ erlebt:

Von wann bis wann hat das Lebensereignis Zivildienst, Bundesheer oder Freiwilliges Soziales Jahr stattgefunden?

Falls dein Zivildienst, Bundesheer oder Freiwilliges Soziales Jahr noch läuft, gib bitte als Enddatum 04.2021 an.

Zeitraum: ____

Wie sehr hat das Lebensereignis Bundesheer, Zivildienst, Freiwilliges Soziales Jahr dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das Lebensereignis Bundesheer, Zivildienst, Freiwilliges Soziales Jahr beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Wenn Lebensereignis „Arbeiten" erlebt:

Von wann bis wann hast du im letzten Jahr gearbeitet? Falls du mehreren Arbeiten nachgegangen bist, beginne bitte mit der Arbeit, die du zuletzt gemacht hast.

Falls du immer noch arbeitest, gib bitte als Enddatum 04.2021 an. Falls die Arbeit schon vor März 2020 begonnen hat, gib bitte als Startdatum 03.2020 an. Falls ein Zeitraum kürzer als ein Monat gedauert hat, dann gib bitte dasselbe Monat als Beginn- und Enddatum an. Da wir uns nur für Ereignisse seit der ersten Befragung interessieren, kannst du nur den Zeitraum von 03.2020 bis 04.2021 auswählen.

1. Zeitraum Arbeit: ____

2. Zeitraum Arbeit: ____

3. Zeitraum Arbeit: ____

4. Zeitraum Arbeit: ____

Wie sehr hat das Lebensereignis Arbeiten dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das Lebensereignis Arbeiten beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Wenn Lebensereignis „Ausbildung“ erlebt:

Von wann bis wann warst du im letzten Jahr in einer Ausbildung (Studium, Lehre, etc.)? Falls du mehrere Ausbildungen gemacht hast, beginne bitte mit der Ausbildung, die du zuletzt gemacht hast.

Falls du immer noch in einer Ausbildung bist, gib bitte als Enddatum 04.2021 an. Falls die Ausbildung schon vor März 2020 begonnen hat, gib bitte als Startdatum 03.2020 an. Falls ein Zeitraum kürzer als ein Monat gedauert hat, dann gib bitte dasselbe Monat als Beginn- und Enddatum an. Da wir uns nur für Ereignisse seit der ersten Befragung interessieren, kannst du nur den Zeitraum von 03.2020 bis 04.2021 auswählen.

1. Zeitraum Ausbildung: ____

2. Zeitraum Ausbildung: ____

3. Zeitraum Ausbildung: ____

Wie sehr hat das Lebensereignis Ausbildung dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das Lebensereignis Ausbildung beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Wenn Lebensereignis „Wechsel meines Wohnortes“ erlebt:

Wann hast du im letzten Jahr deinen Wohnort gewechselt? Falls du mehrere Wohnungswechsel gemacht hast, beginne bitte mit dem Wohnortswechsel, den du zuletzt gemacht hast.

Da wir uns nur für Ereignisse seit der ersten Befragung interessieren, kannst du nur den Zeitraum von 03.2020 bis 04.2021 auswählen.

1. Wohnortswechsel: ____

2. Wohnortswechsel: ____

3. Wohnortswechsel: ____

4. Wohnortswechsel: ____

Wie sehr hat das Lebensereignis Wechsel des Wohnortes dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das Lebensereignis Wohnortwechsel beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Wie gut kannst du an deinem Wohnort mit dem Fahrrad unterwegs sein (Verfügbarkeit von Radwegen, hügeliges Gelände, Wegstrecken, ...)?

Im Vergleich zu meinem Wohnort vor einem Jahr, ist die Verkehrssituation mit dem Fahrrad an meinem jetzigen Wohnort...

- Viel besser
- Besser
- Gleich
- Schlechter
- Viel schlechter

Wie gut kannst du an deinem Wohnort mit den öffentlichen Verkehrsmitteln unterwegs sein (Anbindungen, Fahrplandichte, etc.)?

Im Vergleich zu meinem Wohnort vor einem Jahr, ist die Verkehrssituation mit den öffentlichen Verkehrsmitteln an meinem jetzigen Wohnort...

- Viel besser
- Besser
- Gleich
- Schlechter
- Viel schlechter

Wenn Lebensereignis „Längere Reise“ erlebt:

Von wann bis wann hast du im letzten Jahr eine längere Reise unternommen? Falls du mehrere längere Reisen unternommen hast, beginne bitte mit der Reise, die du zuletzt gemacht hast.

Falls eine Reise kürzer als ein Monat gedauert hat, dann gib bitte dasselbe Monat als Anfangs- und Enddatum an. Da wir uns nur für Ereignisse seit der ersten Befragung interessieren, kannst du nur den Zeitraum von 03.2020 bis 04.2021 auswählen.

Zeitraum 1. längere Reise: ____

Zeitraum 2. längere Reise: ____

Zeitraum 3. längere Reise: ____

Zeitraum 4. längere Reise: ____

Wie sehr hat das Lebensereignis längere Reise dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das Lebensereignis längere Reise beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Wenn Lebensereignis „Schwere Krankheit/Unfall“ erlebt:

Von wann bis wann hattest du im letzten Jahr eine schwere Krankheit oder warst wegen eines Unfalls stark eingeschränkt? Falls du mehrere Krankheiten oder Unfälle hattest, beginne bitte mit der Krankheit oder dem Unfall, die oder der zuletzt passiert ist.

Falls du immer noch an einer Krankheit oder einem Unfall leidest, gib bitte als Enddatum 04.2021 an. Falls die Einschränkung durch Krankheit oder Unfall schon vor März 2020 begonnen hat, gib bitte als Startdatum 03.2020 ein. Falls ein Zeitraum kürzer als ein Monat gedauert hat, dann gib bitte dasselbe Monat als Beginn- und Enddatum an. Da wir uns nur für Ereignisse seit der ersten Befragung interessieren, kannst du nur den Zeitraum von 03.2020 bis 04.2021 auswählen.

1. Zeitraum längere Krankheit oder Unfall: ____

2. Zeitraum längere Krankheit oder Unfall: ____

3. Zeitraum längere Krankheit oder Unfall: ____

4. Zeitraum längere Krankheit oder Unfall: ____

Wie sehr hat das Lebensereignis schwere Krankheit oder Unfall dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das Lebensereignis schwere Krankheit oder Unfall beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Wenn „sonstiges Lebensereignis“ erlebt:

Wie sehr hat das sonstige Lebensereignis dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf das sonstige Lebensereignis beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Hat sich im letzten Jahr dein Beziehungsstatus verändert?

- Ich habe mich von meinem/r Partner/in getrennt
- Ich habe eine neue Beziehung begonnen
- Ich habe mich von meinem/r Partner/in getrennt und eine neue Beziehung begonnen
- Ich bin weiterhin in keiner Beziehung
- Ich bin weiterhin in derselben Beziehung
- Sonstiges

Wenn Lebensereignis „Änderung des Beziehungsstatus“ erlebt:

Wie sehr hat die Änderung deines Beziehungsstatus dein Leben verändert?

1 = Alles ist gleich geblieben	2	3	4	5 = Alles hat sich verändert

Wie sehr hat Covid-19 deine Entscheidungen in Bezug auf deinen Beziehungsstatus beeinflusst?

1 = Covid-19 hat mich überhaupt nicht beeinflusst	2	3	4	5 = Ich habe das nur wegen Covid-19 gemacht

Angaben zu deiner Person

Alter: _____

Geschlecht:

- Männlich
- Weiblich
- Divers

Wieviel Geld hast du pro Monat insgesamt zur Verfügung?

Bitte zähle deine verschiedenen regelmäßigen Einkommensquellen zusammen: Unterstützung durch deine Eltern, (Neben-)Jobs, Studienbeihilfe, Familienbeihilfe, Vergütung für Wehr-/Zivildienst, Alimente, etc.

Wenn du unsicher bist, dann versuche eine Schätzung.

Euro pro Monat: ____

Wie hoch sind deine fixen Ausgaben insgesamt pro Monat?

Bitte zähle deine regelmäßigen Ausgaben zusammen: Miete, Heizkosten, Strom, Gas, Handy, Internet, ... Zu den Fixkosten zählen all jene Kosten, die regelmäßig anfallen, und zwar in der Regel auf Grundlage vertraglicher Verpflichtungen. Ausgaben für zum Beispiel Essen oder Kosmetikartikel zählen nicht dazu.

Wenn du unsicher bist, versuche eine Schätzung.

Euro pro Monat: ____

Ist dein Lebensstandard im Vergleich zum letzten Jahr...

- Viel besser
- Besser
- Gleich
- Schlechter
- Viel schlechter

Bist du erwerbstätig?

- Ja
- Nein

Wie viele Stunden arbeitest du im Durchschnitt pro Woche?

h/Woche: ____

Hast du ein Auto zur Verfügung?

- Ich besitze ein eigenes Auto.
- Ich kann das Auto von meiner/m Partner/in, von meiner/m Mitbewohner/in oder von meinen Eltern immer verwenden.
- Ich kann das Auto von meiner/m Partner/in, von meiner/meinem Mitbewohner/in oder von meinen Eltern gelegentlich und nach Absprache verwenden.
- Ich bin Mitglied bei einem Carsharing Anbieter.
- Nein, ich habe kein Auto zur Verfügung.

Welche Postleitzahl hat dein Wohnort? ____

Wie wohnst du?

- Wohngemeinschaft
- Studierendenheim oder Lehrlingsheim
- Wohnung/Haus mit dem/der Partner/in
- Wohnung/Haus mit Verwandten (Eltern, Großeltern, Tante/Onkel, etc.)
- Wohnung/Haus alleine
- Sonstiges

In welcher Art von Haus lebst du?

- Einfamilienhaus oder Doppel- oder Reihenhaus
- Wohnung in einem Wohnhaus mit bis zu 10 Wohnungen
- Wohnung in einem Wohnhaus mit mehr als 10 Wohnungen
- Sonstiges

Wie groß ist die Wohnung oder das Haus, in dem du lebst?

Wenn du unsicher bist, dann versuch eine Schätzung.

- bis 44 m²
- 45 bis 59 m²
- 60 bis 89 m²
- 90 bis 109 m²
- 110 bis 129 m²
- 130 oder mehr m²
- weiß nicht

Mit welchem Energieträger wird dein Haus vorwiegend beheizt?

- Öl
- Gas
- Kohle/Koks
- Stückholz
- Wärmepumpe
- Hackschnitzel/Pellets
- Solar
- Fern-/Nahwärme
- Elektrischer Strom
- weiß nicht
- Sonstiges

Wie viele Personen, dich eingeschlossen, leben in deinem Haushalt?

Bitte überprüfe, ob die Summe der Personen in den verschiedenen Altersgruppen mit der Gesamtanzahl an Personen übereinstimmt.

Personen insgesamt: ____

davon Personen älter als 18 Jahre: ____

davon Personen zwischen 14 bis 18 Jahren: ____

davon Personen jünger als 14 Jahre: ____