POLICY INSTRUMENTS AND THEIR IMPACT ON BUSINESS PRACTICE IN THE FASHION INDUSTRY TOWARDS SUSTAINABILITY – LEARNING OUTCOMES FROM THE FOOD INDUSTRY

Thesis for One-Year Master, 15 ECTS
Textile Management
David Dreker
Jacqueline Lampey

2019.18.04
Title: Policy Instruments and their Impact on Business Practice in the Fashion Industry towards Sustainability – Learning Outcomes from the Food Industry

Publication Year: 2019

Authors: David Dreker, Jacqueline Lampey

Supervisor: Vijay Kumar

Abstract:
The fashion industry is not only known for its creativity and innovation, but also for its contribution to environmental pollution, climate change as well as for social imbalances and poverty. Ecological and societal standards have so far only played a minor role in this industry for production and distribution as well as for consumers for their consumption and disposal behaviour. However, in order to achieve the UN Sustainable Development Goals and prevent the maximum damage caused by pollution and exploitation, it is necessary to act more rapidly and consistently. Governmental control instruments can help to address those responsible, to regulate the market and to encourage improvements towards a more sustainable economy.

The aim of this work is to develop a feasible governmental control instrument for the textile sector in order to provide possible solutions for some of the existing problems. Three different cases of already implemented policies in the food sector will be analysed and evaluated in order to detect the best-case policy with regard to sustainability as a basis for a derivation. The findings of the derived outcome will then be examined by experts in order to validate it. Finally, a recommendation summarises the findings of the literature review, the transfer of knowledge as well as the expert assessments.

The result of this research paper is a control instrument derived from the food industry, which was evaluated with the help of expert interviews and has the potential to make the textile market more sustainable in the long term.

Keywords: Policy Instruments, Regulatory Affairs, Public Procurement, Textile Industry, Sustainability, Control Instruments, Knowledge Transfer
# Table of Contents

Index of Figures ........................................................................................................ III
Index of Tables ........................................................................................................... III
Index of Abbreviations ................................................................................................. IV
Acknowledgements ..................................................................................................... VI

1 Introduction .............................................................................................................. 1
   1.1 Background ........................................................................................................... 2
   1.2 Problem Definition ............................................................................................... 3
   1.3 Purpose ................................................................................................................ 4
   1.4 Research Questions ............................................................................................... 4
   1.5 Delimitations ........................................................................................................ 5
2 Methodology ............................................................................................................. 7
   2.1 Research Approach ............................................................................................... 7
   2.2 Research Design ................................................................................................... 8
   2.3 Reflection ............................................................................................................ 14
3 Frame of Reference .................................................................................................. 16
   3.1 Comparison of the Fashion and the Food Sector .................................................. 16
   3.2 Control Instruments ............................................................................................ 20
4 Overview of Policy Instruments ............................................................................. 24
   4.1 C-I: Deposit System for Drinking Packages in Germany ...................................... 25
   4.2 C-II: Public Health Product Tax in Hungary ....................................................... 27
   4.3 C-III: Sustainable Public School Food Procurement and the Adoption of Organic Food in the Municipality of Rome ............................................. 30
   4.4 Summary ............................................................................................................ 33
5 Evaluation and Policy Transfer ................................................................................ 35
   5.1 Evaluation ............................................................................................................ 35
   5.2 Policy Transfer .................................................................................................... 37
6 Results and Discussion ............................................................................................. 45
   6.1 Validation with Expert Interviews ....................................................................... 45
   6.2 Discussion of Results ........................................................................................... 52
7 Conclusion and Outlook ............................................................................................ 57
   7.1 Limitations .......................................................................................................... 57
   7.2 Outlook ............................................................................................................... 57
   7.3 Result ................................................................................................................... 58
Bibliography ................................................................................................................ VII
Index of Figures

Figure 1: Methodological Framework (author’s figure) ......................................................... 8
Figure 2: Workwear Market Value (VF Corporation, n.d.) ...................................................... 38
Figure 3: Turnover Textile and Clothing Industry by Sector (EURATEX, n.d.) ..................... 38

Index of Tables

Table 1: Characteristics of the Food and Fashion Industry in Comparison, author’s table acc. to (EEA, 2014); (Fisher, 1997) and (d’Avolio et al., 2017). .................................................. 19
Table 2: Classification of Policy Instruments acc. to Dunkelmann, 2004 (author’s translation). .............................................................................................................................. 22
Table 3: Advantages and Disadvantages of GCI (author’s table) ........................................ 23
Table 4: Overview of Case Studies (author’s table) ................................................................. 33
Table 5: Evaluation of the Case Studies (author’s table) ....................................................... 35
Table 6: Policy Design of C-III and C-IV (author’s table) ..................................................... 42
Table 7: SWOT-Matrix (author’s table) ................................................................................. 50
## Index of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMU</td>
<td>Federal Ministry of the Environment, Nature Conservation and Nuclear Safety of Germany - <em>Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit (Deutschland)</em></td>
</tr>
<tr>
<td>BMZ</td>
<td>Federal Ministry of Economic Cooperation and Development of Germany - <em>Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (Deutschland)</em></td>
</tr>
<tr>
<td>BVE</td>
<td>Federation of German Food and Drink Industries - <em>Bundesvereinigung der Deutschen Ernährungsindustrie e.V.</em></td>
</tr>
<tr>
<td>BZ</td>
<td>Ministry of Foreign Affairs of the Netherlands - <em>Ministerie van Buitenlandse Zaken (Nederland)</em></td>
</tr>
<tr>
<td>C-I; C-II;</td>
<td>Case I; Case II, Case III and Case IV</td>
</tr>
<tr>
<td>C-III; C-IV</td>
<td></td>
</tr>
<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
</tr>
<tr>
<td>DGB</td>
<td>German Federation of Trade Unions - <em>Deutscher Gewerkschaftsbund</em></td>
</tr>
<tr>
<td>DPG</td>
<td>German Deposit System - <em>Deutsche Pfandsystem GmbH</em></td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GCI</td>
<td>Governmental Control Instruments</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GftZ</td>
<td>Association of Recycling Service Providers - <em>Gemeinschaft für textile Zukunft GbR</em></td>
</tr>
<tr>
<td>GPP</td>
<td>Green Public Procurement</td>
</tr>
<tr>
<td>HDE</td>
<td>German Retail Trade Association – <em>Handelsverband Deutschland e. V.</em></td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
</tr>
<tr>
<td>IOB</td>
<td>Policy and Operations Evaluation Department of Dutch Ministry of Foreign Affairs</td>
</tr>
<tr>
<td>NABU</td>
<td>German Nature and Biodiversity Conservation Union - <em>Naturschutzbund Deutschland e.V.</em></td>
</tr>
<tr>
<td>NCD</td>
<td>Non-Communicable Diseases</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OECD/DAC</td>
<td>Development Assistance Committee</td>
</tr>
<tr>
<td>PHPT</td>
<td>Public Health Product Tax</td>
</tr>
<tr>
<td>RQ</td>
<td>Research Question</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and medium-sized enterprises</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>SUBV</td>
<td>Senate for Environment, Construction and Transport (Bremen) - Senat für Umwelt, Bau und Verkehr (freie Hansestadt Bremen)</td>
</tr>
<tr>
<td>TBL</td>
<td>Triple Bottom Line</td>
</tr>
<tr>
<td>UBA</td>
<td>German Environment Agency - Umweltbundesamt (Deutschland) -</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
<tr>
<td>VerpackV</td>
<td>Packaging Ordinance (Germany) - Verpackungsverordnung (Deutschland)</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
Acknowledgements

This master’s thesis has not only provided us with methodological and practical experience but has also allowed us to gain subject-specific insights. We would like to use this knowledge and expertise for future projects and therefore would like to thank everyone who accompanied, guided and supported us in this process.

First of all, we would like to thank our thesis supervisor PhD Vijay Kumar from the Swedish School of Textiles at the University of Borås. The door to Vijay's office was always open for us when we encountered a demotivation or other uncertainties regarding our research. We could always rely on his feedback when we had questions about our research design or details in content. He allowed us to give this paper our own note by steering us in the right direction while accepting our own perspectives and motivation.

Our compliments also include the renowned experts who participated in the interviews for this research project. Without their passionate participation and their valuable contributions, the validation of our results would not have been possible in this format.

Acknowledging proof-readers and opponents for their motivational comments and further advice, we would also like to express our gratitude. We are appreciative for their very helpful comments on this work.

We especially want to thank our families and friends for their constant support and encouragement during our years of study and through the process of researching and writing this thesis. Without them, this achievement would not have been possible. Thank you very much.

Finally, we would like to express our gratitude to each other for the support, trust and cooperation in processing this paper together.

David & Jacqueline
1 Introduction

The environmental pollution caused by emissions, single-use plastics and harmful chemicals, resulting in climate change and the extinction of species are pressing challenges of our time, for which a solution should be found as quickly as possible.

To address the aforementioned problems, the United Nations (UN) has set a number of sustainability goals to be achieved by 2030. One of these objectives is Goal No. 12, which refers to Responsible Production and Consumption. For many industries, this means changing business practices towards sustainability - including the food and the fashion industry, being among others the most critical industries on ecological and social level. (UN, 2015)

The increasing consumption of fashion and textiles and thus the growing consumption of resources, the need for human capital, the globalisation, logistics and, finally, the waste of production and re-use (Deloitte, 2013) contributes significantly to the emerging threats to social and ecological sustainability (Pedersen, Laursen, and Andersen, 2015). In the past, companies have tried to address consumer behaviour while those demanded transparency and sustainability from companies.

On the one hand, the textile business is prospering and the fashion industry's sales are growing annually. On the other hand, the environment is polluted and people exploited. This problem results from the fact that the market has failed in terms of social and environmental aspects. Therefore, the state should interfere with regulations in order to avert the worst consequences in time (Hubert, 2018). In order to achieve the above-mentioned goals, experts propose external control strategies of the European Commission for the textile industry (Pedersen, Laursen, and Kouroula, 2013).

For other sectors, such as the aforementioned food industry, EU governments are already using control instruments to increase sustainability (European Commission, 2012). These policy instruments either change the distribution and access to resources and public goods or change the behaviour of market participants by changing the framework conditions in which they interact (Bandelow, 2004). Compared to other industries, the food industry is particularly regulated by safety and hygiene standards, but also by sustainability-enhancing regulations (Trienekens and Zuurbier, 2004). Examples for them are direct and indirect control instruments such as educational campaigns which raise consumer awareness and thus change the consumption behaviour (Schubert, 1991) as well as supplementary taxes that levy additional charges on ingredients or products in order to make the consumption of certain products unattractive (Windhoff-Heritier, 1987).

This master's thesis aims to derive a workable public policy tool for the European fashion industry: Three different cases of existing policies in the food sector are analysed and their design as well as the caused results are then examined for their transferability using an evaluation scheme in order to identify and subsequently transfer the best-case policy.
1.1 Background

Experts participating in the online forum of Sociolog.dx\(^1\) which was set up for the research of Pedersen, Laursen, and Andersen (2015) point out, that ‘the fashion industry is having a serious image problem’ and describe it as a: ‘superficial, irresponsible, unsustainable, and/or unethical’ industry. During an earlier survey, the same authors state the major challenges and opportunities of the fashion industry as being: On the one hand working conditions and fair wages, products and materials and on the other hand closed-loop business models, collaborative design, manufacturing, consumption and tapping into local knowledge (Pedersen, Laursen, and Kouroula, 2013). As defined in the Triple Bottom Line (TBL) framework by Elkington (1997), sustainability is a complex subject that includes the three dimensions of economy, environment and society. In conclusion, diminishing the ecological impacts through a reduction of environmental key factors such as footprints, is not leading per se to a more sustainable result. Subsequently, also the social, as well as the economic category, have to be addressed to achieve full sustainability as outlined. (Dyllick and Hockerts, 2002)

WRAP (2012) points out for the UK, that by reducing the footprints\(^2\) of carbon, water and waste by 10 to 20 per cent each, cost of £ 3 billion (€ 3.5 billion) could be avoided per year. Furthermore, it displays the drivers for sustainability in businesses, which are pollution, population growth and climate change might lead to a competition for access to resources which makes sustainability crucial in the future (ibid.). Additionally, Martinuzzi (2011) defines the result of sustainable practises: In the long run production cost might be influenced while quality improves and most importantly the environmental impact decreases. Nevertheless, for now, eco-labelled products are not seen to be suitable for a mass-market but only for niche-markets, since higher standards in production lead to higher manufacturing costs (ibid.). Having in mind the severity of climate change and the importance of sustainable practices in the industries, the expectations towards companies and customers show a bias: Pedersen, Laursen, and Andersen (2015) reflect that experts define the fashion industry as being trapped in a system with a few changes and enhancements for sustainability, giving no feasible rewards or motivation for neither the companies nor the consumers. This indicates a ‘need to fix the prices in the fashion industry, which today provides no incentives for companies as well as consumers to produce and buy socially and environmentally friendly fashion.’ (Pedersen, Laursen, and Andersen, 2015, p. 321).

Both, companies and consumers, seem to show a lack of knowledge regarding the textile supply chain and that might lead to a miscommunication between both. On the one hand, consumers can hardly envision the hidden costs (on the environmental and social level) that the textile supply chain causes. On the other hand, it is also described as difficult for companies to steer the whole supply chain towards sustainability while having limited knowledge about their suppliers and sub-suppliers. (Pedersen, Laursen, and Kouroula, 2013)

\(^1\) ‘Sociolog.dx, a digital qualitative research tool provided by the data provider GfK (Growth from Knowledge) [...] an online forum with restricted access, where a selected group of participants answer questions, solve tasks, and share various material (pictures, links, drawings, etc.)’ (Pedersen, Laursen, and Andersen, 2015).

\(^2\) ‘The impact of a person or community on the environment, expressed as the amount of land required to sustain their use of natural resources.’ (Acc. to Oxford Dictionaries, 2019).
This can be seen in the example of the company Nike, that is working with audits and the NGO Fair Labour Organisation and which started the ‘Nike Sweatshop campaign’ in 1990. The brand still has issues to enhance the working conditions throughout the supply chain because of limited knowledge and steering ability in the sports textile market. (Deloitte 2013)

Furthermore, the fashion industry is defined as a ‘ticking time bomb’ when it comes to sustainable practices, that makes it difficult to drive change in order to address the image problem and unsustainable behaviour that exist until today (Pedersen, Laursen, and Kouroula, 2013, p. 7). Moreover, it seems like customers are pressuring prices lower and lower and get used to sales and low-priced fashion while accepting a shorter lifetime of garments and faster changes in collections. This ‘incentivises them [fashion companies] to cut corners when it comes to social and environmental performance’. (Pedersen, Laursen, and Kouroula, 2013, p. 11)

Governmental Control Instruments (GCIs) in the fashion industry already exist in order to steer the market, examples are control instruments that encourage the application of sustainable production throughout certifications (e.g. GOTS, Blauer Engel or OEKO-TEX) (European Commission, 2012). In addition, there are directives implemented that regulate the use of certain chemicals which are harmful to humans and nature such as REACH (Kuo et al., 2013) or other health and safety laws that guarantee security and decent working conditions (Turcotte, de Bellefeuille and Hond, 2007).

In conclusion, it is necessary for the industry to address sustainability also downwards the supply chain by e.g. reducing the number of garments that are brought to the market and therefore to emphasise the unsustainability in the industry (Pedersen, Laursen, and Kouroula, 2013). Experts in the research of Martinuzzi (2011) further outline that standards are important for the competitiveness of eco-labels and recommend policies for sustainability and CSR to be used in order to avoid the aforementioned bias. Also, the survey conducted by Pedersen, Laursen, and Andersen (2015) discovered that many specialists share a similar view and recommend public policies in order to restrict the textile industry to enable the drive towards sustainability. They furthermore point out the insufficient engagement of governments towards the future of the fashion industry. Nevertheless, policies introduced in the EU legislation addressing the global supply chain in countries outside the European Union are seen to be difficult, because most of the pollution and social exploitation by producing textiles occurs outside the EU. Therefore, the European Environment Agency suggests voluntary guidelines for the industry as for example the Green Public Procurement (GPP) and furthermore states, that especially the impacts of the consumer use, buying behaviour and disposal phases might be reduced by introducing governmental control instruments (EEA, 2014).

1.2 Problem Definition

The bias between environmental and social responsibilities of industry and consumers lead to the necessity of governmental steering. This can be reached by introducing new policies or transferring policies from other sectors that regulate production, consumption and/or disposal towards sustainability. Although on the one hand new policies might lead to higher bureaucracy (Lascoumes and Le Gales, 2007), the effects of those might help to reduce the impacts of the fashion industry significantly on the other hand. Due to its high environmental impacts and the fact that many regulations
are implemented, the food industry was chosen and will be presented as a role model for the fashion industry in order to transfer a feasible governmental control instrument in theory onto the fashion industry. However, it should be noted that the food industry also has its own challenges and cannot be described as a perfect framework for sustainability.

The market failure on ecological and social level, which leads to the above-mentioned distortion in the conception of responsibility between industry and customers, is bringing government control instruments into focus that are intended to steer customer or industry behaviour towards sustainability. While the fashion industry majorly impacts the environment and society, necessary changes seem to be unattractive and difficult to implement for many companies. On the other hand, consumers might not be able to know everything about a certain product or lack understanding of the complex textile supply chain. (Pedersen, Laursen, and Kouroula, 2013)

A pattern where responsibility is passed on to other parties involved and change is perceived as difficult (Martinuzzi, 2011) is seen apart from the fashion industry in other industries as for example the food industry. This industry, having an even higher impact on the environment, has faced similar patterns (EEA, 2014) and therefore might be seen as a role model for implementation in the fashion industry. This thesis addresses the possibilities to steer the market and consumer behaviour governmentally and thereby reducing the industry’s impacts. There are numerous publications and research projects dealing with governmental control instruments and investigating their advantages and disadvantages. Furthermore, there are papers that examine the feasibility of transferring learning outcomes between industries and deal with the possible consequences (cf. European Commission, 2012). These different approaches are combined to transfer sustainability promoting results from the food industry to the textile industry in order to fill the lack of research in this field by using the experiences of the food industry and therefore gaining new knowledge for the fashion industry.

1.3 Purpose

As previously described, the framework conditions for sustainable production methods and sustainable consumer behaviour are not sufficiently developed yet. Therefore, framework conditions need to be further developed to enable improvements to be made at all three levels of sustainability. Therefore, the potential of governmental control instruments to steer the market, to address those responsible and to drive change has to be identified. The aim of this thesis is therefore to apply existing knowledge about positive outcomes within the food industry and transfer them onto the fashion industry by developing a feasible policy. Existing instruments are used in order to develop a suitable governmental control instrument for the textile sector to steer it towards a more sustainable direction.

1.4 Research Questions

In order to determine whether from the food industry derived control instruments are capable of driving change in the fashion industry, the following main research question (Main RQ) needs to be examined:

____________________

3 In the following also called Control Instruments, Policy Instruments, Policies, Steering Tools or Steering Instruments.
**Main RQ:** How can a transferred Governmental Control Instrument (GCI) from the food industry regulate the textile industry to drive change towards sustainability?

Due to the complexity of this context-based main research question, it is divided into three sub-questions that create the structure of this work and lead to the result.

A. To what extent can the food industry be a role model for the fashion industry with regards to sustainability?

B. Which impact do successfully implemented GCIs in the food industry have on business practice and consumer behaviour regarding sustainability?

C. Which existing GCI is able to create a suitable framework for the Textile Industry and how can it be derived?

Addressing the main research question of this thesis, the three sub-questions supplement the research scope and facilitate the analysis:

In the process, the extent to which the food industry can serve as a paradigm for the textile industry, in which similarities and differences are identified, will be clarified at the beginning of the research (A). Afterwards, the influence of introduced control instruments within the food industry on consumer behaviour and business practices with regard to sustainability will be examined. Therefore, a short introduction to control instruments, their functions and their classification is provided (B). Concluding, it is to be clarified which of the examined control instruments can be derived for the textile industry. For this purpose, the GCIs are ranked with the help of an evaluation tool in order to identify the most appropriate control instrument which could form the foundation for a derivative GCI (C). The findings of the three sub research questions (A-C) help to address the main research question and provide valid arguments to be used in the final discussion.

**1.5 Delimitations**

This master's thesis within the research area of textile management focuses on the learning outcomes of another industry and benefits from the food sector as a role model. The broad field of sustainability includes many ways of steering by customers, policy makes or companies that might have been looked at. Nevertheless, this thesis concentrates on the policy maker perspective whereby for this thesis different governmental steering instruments are investigated exclusively, which might have the potential to drive change within the fashion industry. Throughout the field of GCIs, the three presented cases CI-CIII were chosen as role models out of many other examples such as certification schemes, other recycling systems, labelling restrictions, etc.

The role model industry is defined as the food industry as one of the most polluting sectors and it must therefore be considered that the food industry has its own challenges to address and that changes are needed. Nevertheless, there are many GCIs existing in the food industry which have driven sustainable changes and can serve as a foundation for this study. It must be taken into account that in other industries, too, steering instruments can be found that are considered to have been successfully implemented, but the food industry was found to be the most relevant for the purpose of research during the literature review. The food industry is due to its experience and major impacts on the environment as well as its similarities to the fashion industry seen as suitable for a policy transfer, although it differs greatly in the consumption
phase (one-time use and multiuse). This was addressed throughout the selection of the case GCI.

Moreover, the target group of such policies is limited to the European market because of the high market share and its steering competences. Due to the complex policy design and the difficulty of implementation and control, the target group of such instruments is limited to industrialised countries. For the purpose of simplification, the research is limited to the European single market. Therefore, the number of existing policies is limited to the member states of the European Union and the European Free Trade Association.
2 Methodology

This section addresses the methodological framework used for the conduction of the presented thesis. The comparative research studied two different industries and the feasibility of practices in Industry I (food industry) on Industry II (textile industry) in order to benefit from the learnings of Industry I. Thereby the research was divided into two different levels:

1st Level: In order to derive a governmental control instrument that has the potential to drive change towards sustainability in the textile industry (Industry II), three existing policies in the food sector (Industry I) were analysed and their conception as well as the resulting effects were reviewed for their transferability on the basis of an evaluation scheme in order to identify and finally translate the best case policy to the framework conditions of the textile sector.

2nd Level: The derived policy is then evaluated with the help of expert interviews and the results of these interviews are assessed with the help of a SWOT analysis in order to reflect the strengths, weaknesses, opportunities and challenges of such a policy.

2.1 Research Approach

The selected approach is a deductive research strategy where an existing model was applied and tested in a new context (Bryman and Bell, 2011, p. 11). This implied that a hypothesis, derived from the background of the study was to be confirmed after the evaluation of the results of the research (ibid.). This research was therefore based on the Hypothesis:

*Existing Governmental Control Instruments are able to create a suitable framework for the Textile Industry to drive change towards sustainability.*

According to Bhattacherjee (2012) the deductive approach, here also called ‘theory-testing approach’ enabled the researcher to compare different models and evaluate their success in certain circumstances in order to test the aforementioned theory. This approach was therefore chosen in order to determine the possibility to transfer one of the investigated policies onto the fashion sector and make use of the existing model from the food industry.

In order to evaluate the transferability and success of the policy, this research was based on qualitative, secondary data from literature. This data was discussed with experts from practice by conducting expert interviews that address the foregoing findings. The data was collected mainly from governmental institutions and from previous research in the textile and food sector. Since the main focus stayed within the fashion industry few sources were selected from the food industry, as measurements for comparability such as experiences from the food industry must be included to ensure a valid result (Bryman and Bell, 2011, p. 42). Qualitative methods were for example case or action research and consist of non-numeric data in order to reflect on phenomena from existing literature and research (Bhattacherjee, 2012).

The advantage of qualitative methods is that the researcher observes the studied field from the point of view of insiders (Bryman and Bell, 2011, pp. 386). Since the input of different cases was important for this exploratory research, the variety and understanding of different concepts was crucial and therefore chosen for this thesis. Bryman and Bell (2011, pp. 286) furthermore state that in qualitative research, subjective interference and difficulties for replication or generalisation might be seen
as disadvantages. By working with ongoing content analyses and by validating the data with expert interviews this risk should be lowered. Due to the novelty of this topic, it would be necessary for further research implications to furtherly validate the data by quantitative approaches.

2.2 Research Design

The research design of the presented thesis, relied on a comparative design that analysed two different industries and the feasibility of practices in Industry I on Industry II in order to benefit from the learnings of Industry I. It was conducted in a case study design in order to gather data, as rich, detailed and contextualised as possible about the presented cases (Bhattacherjee, 2012). In accordance with the testing of the transferability of a policy, the author (ibid.) furthermore described the case design as being feasible for theory testing. The multi-case study design, or comparative design in which three cases (policies) were compared intended to elaborate a transferred theory (Bryman and Bell, 2011, p. 64). This thesis observed three different policies, evaluated them by a scheme and determines the best-case policy for further research. The comparative design, therefore, provided the possibility to choose the suitable policy throughout the process. By providing context-related and extensive data, cases could give a broad overview of the following evaluation. Since the research comprised a multi-site case by including the two industries food and fashion, a foregoing comparison between the industries had to be made (Bhattacherjee, 2012).

---

Figure 1: Methodological Framework (author’s figure).

Figure 1 displays the framework for the scope of this work. In the first level, the desk research gave an insight into the challenges of the textile industry and the similarities and differences between the textile and the food sector (data collection) in order to evaluate the transferability. This was accomplished by observing the TBL dimensions: economy, environment and society. The authors chose three established cases from the food industry due to the subjective relevance and success. In order to prepare these, governmental control instruments were introduced with regards to their intentions as well as existing types and characteristics. Subsequently, three GCIs, their background,
purposes, policy design and achievements were presented in three cases for an in-depth analysis of successful governmental control instruments in the food industry. The content analysis in level 1 conducted an evaluation of the presented cases in order to select the best-case policy. The indicators for this evaluation were selected by choosing relevant factors that influence environmental and social impacts, provided by the Dutch Ministry of Foreign Affairs\(^4\). Finally, the case studies were revised in a qualitative comparative analysis (Mills, 2010) by evaluating the indicators of the evaluation scheme. After the selection of the most suitable policy, a policy transfer was part of the data analysis, where the collected data from chapter 5.2 was relayed onto the framework of the clothing industry.

The second level discussed the collected data with experts that could compare the theory with the practical framework and thereby verified the applicability on the market. Therefore, expert interviews were conducted in order to validate the results of the theoretical framework in the first level with experts from the relevant fields. The content analysis was based on a SWOT-Analysis, a managerial tool for the measurement of strategy success that clusters the answers of the experts into strengths, weaknesses, opportunities and threats in order to test if such a policy instrument could be successful. (Andrews, 1971)

By selecting a set of different interviewees within the policy-making and textile field, the data validation could be seen as coherent due to the varying expertise within the field of sustainable textiles. The analysis is quite relevant due to the number of stakeholders that take part in the change towards sustainability in the textile industry.

2.2.1 1st Level - Data Collection

The data collected within the frame of reference enabled the comparison in between the food industry and the textile industry and gave a broad overview over governmental control instruments and their application in the food industry in three different cases. In a first step, the comparability of both industries was investigated according to their environmental, social and economic impact, which was conducted by gathering secondary data for the relevant keywords within the field of the fashion and food supply chain such as the sustainability indicators of the TBL framework. The secondary data was collected via the following media:

- Journals (from peer-reviewed publications)
- Internet sources (official pages such as Eurostat, European Commission, ECAP, etc.)
- Relevant research papers from both industries

Data were analysed in a qualitative content analysis that described the aforementioned subcategories and therefore facilitated the generalisation of the research. The referenced keywords led to a set of relevant data from the according industries. Because of choosing a qualitative method, the internal validity is low, due to the lack of evaluating a cause-effect relationship (Bhattacherjee, 2012). It was nevertheless chosen in order to gather contextual data for a derived control instrument.

The following step included a data collection for GCIIs and created therefore the foundation for the data analysis within the theoretical framework. Here, three policies were chosen, in order to analyse them in three cases that were developed from

\(^4\) Ministerie van Buitenlandse Zaken, Ministry of Foreign Affairs of the Netherlands.
collected secondary data. These policies were chosen from different types of GCIs in the food industry that were introduced successfully so that the process and development could be observed. The studied policies were: Case I (C-I): Deposit System, Case II (C-II): Public Health Product Tax and Case III (C-III) Sustainable School Food Procurement. Hereby, those different solutions for the food industry were observed for the entire time period of their implementation. Bhattacherjee (2012) describes the strengths of a content analysis as ‘its ability to discover a wide variety of social, cultural, and political factors potentially related to the phenomenon of interest that may not be known in advance.’

In order to ensure comparability, the following components were analysed for all cases:

- **Background** describes the initial situation before implementation and points out reasons that resulted in the policy.
- **Case** shows a chronological overview and illustrates the case in terms of its geographical location and political background.
- **Purpose** explains the objectives to be achieved by the application of the policy.
- **Framework** shows the various underlying theories that provide the justification for the policy design and therefore possible results.
- **Policy Design** describes the composition and mode of operation of the control instrument.
- **Results** visualises the results produced by the introduction of the instrument.
- **Conclusion** refers to the impact of the steering instrument on the topic of sustainability.

By considering all of the aforementioned topics, the cases provided a holistic view and comparable data in a contextual manner for the evaluation of the best-case policy within the food sector. For this, the secondary data was collected from the following sources:

- Journals from the food and health sector
- Valid and trustworthy internet sources (international institutions, online media, industry associations)
- Relevant research paper from the food, recycling and health industry
- Reports (conference paper, policy analysis reports)

**2.2.2 1st Level - Data Analysis**

This section displays the data analysis, where the evaluation in form of the selection of the best-case policy and the knowledge transfer (policy transfer) take place. The used data were the findings of the aforementioned content-analysis.

**Evaluation:**
The evaluation of the investigated policy instruments was based on the proposed evaluation guidelines set by the Policy and Operations Evaluation Department (IOB), which was a part of the Dutch Ministry for Foreign Affairs. As a member of the OECD/DAC network, the IOB moreover consults evaluations together with the European Union and other international institutions (IOB, 2009). Therefore, the evaluation scheme was governed by EU-standards and was thus relevant for the

---

5 Development Assistance Committee of the OECD.
conducted research. The evaluation began with a policy review and was followed by impact studies. This procedure enabled the evaluation of the case studies and their suitability for the transferred application. The evaluation according to IOB (2009, pp. 17) included the following components:

- **Efficiency**, which is evaluated by examining the employed costs, the time for implementation and the bureaucracy complexity. Therefore, the conflict potential, as well as the compliance with timeframe and budgets, are analysed.
- **Effectiveness** of a policy is assessed by comparing the starting point with the outcome. In addition, adjustments made and goals achieved are considered.
- **Impact** assessment depends on the extent to which performance is measurable. These can be both operational objectives as well as general, overall objectives. In the case of this thesis, the impacts are social and environmental impacts achieved by the implementation of the policy.
- **Relevance** of a policy is assessed by measuring the impact that contributes to achieve the objective and how the policy supports the development towards the aim.
- **Sustainability** valuation should address short and long-term environmental, societal as well as economic impacts. The evaluation of long-term impacts is essential for this purpose.
- **Policy Consistency** is assessed by observing whether there are any inconsistencies with other policies in order to achieve the desired objectives.

In addition to the proposed evaluation levels, the transferability was included in the evaluation in order to fulfil the purpose of the research, to transfer the steering instrument with the best results to the textile industry.

- **Transferability** as a component of the evaluation scheme investigates the similarity of the affected part of the supply chain of both industries in order to determine the degree of transferability.

These indicators were evaluated using the results from the literature review with the evaluation criteria low, medium and high in order to rank the policies to determine the best-case policy. Furthermore, the previously identified theory (policy) was transferred onto the new setting. Because all three chosen cases lay within the area of the OECD-network, the mentioned framework is valid for most of the European market (except for Lithuania, Romania, Bulgaria and Croatia) and therefore relevant for this research.

**Policy Transfer:**
The secondary data for the transfer was used from governmental publications and existing research on the determined best-case policy. The data were analysed in a qualitative content analysis which was based on the defined frameworks in chapter 2.2.1. For coherence, the section ‘C-IV’ covers the same subchapters as previously seen in the case structures of C-I to C-III: Background, Case, Purpose, Framework and Policy Design. Result and Conclusion are in contrast summarised to the section Possible Outcomes in order to illustrate, that the policy transfer is a theoretical transfer.

In this section, the measures were transferred to the equivalent of the fashion industry. Because the authors of the selected sources are the main stakeholders of introducing such new policies the validity of data can be evaluated as high. The limitation for reliability is that only secondary data is used for the process of evaluation and validation (Bryman and Bell, 2011, p. 41).
2.2.3 2nd Level - Data Collection

The second level of this thesis included the conduction and analysis of expert interviews with relevant interview partners in order to validate the results of the policy transfer. Content validity is the evaluation of the representability of the presented data. Due to the exclusive usage of secondary data, the validation of data was necessary for the triangulation of the research (Bryman and Bell, 2011, p. 397). The interviews were conducted in a semi-structured matter. In semi-structured interviews, the main framework of the questionnaire is set but can vary in its sequence and might be amended in latitude, which leads to a general frame of reference compared to structured interviews (Bryman and Bell, 2011, p. 203). In order to ensure the analysis of the data, the open questions regarded the strengths, weaknesses, opportunities and threats as well as the suitability for implementation of the transferred policy. All interviews were conducted via phone or in a personal setting, recorded and subsequently transcribed.

When selecting the interview partners, attention was paid not only to ensure that they were familiar with the technical framework conditions of the textile industry or the food sector, but also that they were included as representatives of relevant interest groups.

The structure of the interviews could only be developed with the completion of the policy evaluation and the subsequent transfer since the interviews involved detailed questions on the contents of the derived policy (C-IV). In order not to anticipate the outcome of the evaluation, the description of the expert selection, the structuring and conduction of the interview as well as their analysis process can be found detailed in chapter 6.

2.2.4 2nd Level - Data Analysis

To evaluate the data, measures were derived from the interviews that indicate the success of the strategy. These were analysed in a qualitative content analysis in order to evaluate the transferability and the possibility to implement the policy. A SWOT-Analysis is a managerial tool that measures the success of a certain strategy by firstly looking at internal strengths and weaknesses and further observe the opportunities and threats that occur from the market of the competitive environment (Andrews, 1971). This tool was selected in order to examine the different perspectives for policy implementation and to categorise the interview responds into the regarding topics. The findings of the qualitative content analysis were clustered into the following categories:

- **Applicability** presents the views of the experts on possible implementation.
- **SWOT parameter**
  - **Strengths** describe the benefits of the policy design identified by an internal analysis in order to visualise the potential to change the procurement framework.
  - **Weaknesses** reflect the policy design limitations identified by an internal analysis to illustrate the potential to change the procurement framework.
  - **Opportunities** symbolise the positive findings of external analysis and identify the opportunities to change the market throughout the implementation of policy C-IV.
Threats are the negative outcomes of external analysis and describe the barriers to changing the market by implementing policy C-IV.

- **Obligation Character** is intended to show the experts' opinion on the degree of an obligation of a regulatory approach to the public procurement of textiles.
- **Administrative Level** presents the various opinions on the field of application in order to rank the statements according to their frequency.
- **Additional Comments** were explored and documented in a concluding discussion following the interview questions.
2.3 Reflection

The presented work is based on the concept of triangulation, which selects more than one kind of data collection. Hereby, one part of the data is collected in a desk research, while the second part relies on a field research with expert interviews. The use of triangulation in qualitative research serves to validate that the observed concepts are interpreted correctly (Bryman and Bell, 2011, pp. 397). In the following, the criteria for evaluation of this research will be discussed further.

2.3.1 Reliability

The Reliability is the level to which ‘the measure of a construct is consistent or dependable’ and warrants if given whether the study is repeatable with the same results (Bhattacherjee, 2012). For qualitative research it is highly discussed if any research can be replicated in any setting that is constantly changing. Nevertheless, Seale (2011) argues that reliability and replicability are important measures for the evaluation of qualitative data. According to Bryman and Bell (2011), such as LeCompte and Goetz (1982) the reliability is divided into internal and external reliability.

**External Reliability** defines the degree for replication of a study, which is often difficult for qualitative research (Seale, 1999). This is due to changes in social settings and circumstances that can affect society and behaviour (Bryman and Bell, 2011, pp. 397). For this research, changes, acceptance and behaviours were observed in the different cases. Although the design would allow researchers to replicate the study, different circumstances and changes in society might affect the results of the qualitative research. Time and setting are important factors that lead to the result of the qualitative data evaluation. Therefore, the external reliability is evaluated as low but is addressed by allowing the reader to follow the evaluation procedure throughout the study due to the presentation of the gained data (Seale, 2011).

Meanwhile, the **Internal Reliability**, which defines whether or not the indicators of a certain measure are consistent, depends on the research design (Bryman and Bell, 2011). Furthermore, LeCompte and Goetz (1982) list five measures to enhance the internal reliability in qualitative research as being: “low-inference descriptors, multiple researchers, participant researchers, peer examination, and mechanically recorded data”. Throughout this work data was gained through various, trustworthy literature from multiple researchers observing the success of GCIs, while the participation of highly experienced professionals in the interviews verifies the results of the transferred GCI. Due to this, the internal reliability can be evaluated as high with regards to the consistent measures for the evaluation of the success of a policy instrument.

All in all there is to say, that the evaluation of reliability in qualitative research shows its difficulties. In this work it is addressed by the careful selection and presentation of data, which helps the reader to follow the evaluation procedure and to gain trustworthy results, since a replication could show different results due to changes in society and settings. Furthermore, expert interviews enhance the consistency of the gained data, by verifying the transfer and its possible outcomes.

2.3.2 Validity

**Internal Validity** defines the coherence of the results and the theoretical idea that is created. Usually, for qualitative research, the internal validity is assumed to be high
due to ‘the high level of congruence between concepts and observations’ (Bryman and Bell, 2011 pp. 397). The cause and effect relationship of this research is based on secondary data in order to ensure the internal validity of the gathered data. Hereby the data is chosen with regards to their trustworthiness.

This thesis uses cases that were introduced in a longer time period and therefore can evaluate the short to long-term effects of the policies. Therefore, the temporal precedence, which increases the degree of internal validity for this research was given (Bhattacherjee, 2012). In order to increase the level of internal validity the conduction of expert interviews is forming part of this thesis. The interviewees’ experience and proficiency is therefore used to enhance the congruence of causes and effects.

The ability to transfer the outcomes onto a social setting is called External Validity, which in most cases is defined low for qualitative research. In order to increase the external validity, expert interviews serves as respondent validation for the resulting policy that was developed within the first level (Bryman and Bell, 2011 pp. 39). This respondent validation enforcens the validation of the result in adequate and multiple ways (Simons, 2009).

Bhattacherjee (2012) furthermore divides the external validity into population and ecological validity. The population validity refers to the ability to transfer the selected sample onto the population. While the cases of this research were chosen, the sample was selected from EU-member states in order to transfer the idea onto the European Union. But it is important to mention, that the organisation in the country’s parliaments are not equal within the EU. Therefore, the population validity might be lowered due to the circumstances. The expert interviews can help to validate the transferability in this case, too. The ecological validity describes in which regard the geographical transfer is possible. The selected pioneer countries might be an indicator for change, but cultural discrepancies have to be taken into account. Due to this only EU-member states were chosen, in order to lower the variety of cultural differences and keep the ecological validity high.

Because the transfer was conducted by the researchers it is important to encounter a bias within the projection of the results and increase the validity. This can be done by triangulation. Its approach consists in the cross-checking and testing the relevance of the arguments, which is also addressed in the expert interviews (Simons, 2009).

In conclusion it is to mention, that in order to ensure and enforce the validity of this thesis, firstly temporal precedence is chosen with regards to the secondary data. This means that the research is based on previous experiences in EU member states. In accordance, the policy transfer itself, which is conducted by the researchers was validated in a respondent validation by a number of experts, which was interviewed with regards to the transfer and its possible outcomes in order to create triangulation. Reflecting the validity and reliability of this thesis, it can be concluded, that even though qualitative data relies on subjective observations, the researchers aim to encounter possible biases by using trustworthy literature and by verifying and cross-checking the results with experts within the field of textiles, food and sustainability.
3 Frame of Reference

The presented thesis transfers an existing policy instrument that already has been introduced to the food sector inside the European Union in benefit to the fashion sector and its sustainability approaches. Therefore, both industries are compared in the following to emphasise its similarities and differences, and thereby the applied factors can be evaluated regarding an implementation onto the fashion industry.

One industry was selected to provide a better comparison of the effectiveness and transferability of the policies examined, as they are subject to similar framework conditions. The food industry was identified as a comparative industry in order to transfer a successful policy. The following subchapters compare the food and the fashion industry.

3.1 Comparison of the Fashion and the Food Sector

The general differences between fashion and food are noticeable from the customer's point of view in which the fashion industry meets the non-essential customer needs, while for food the choice has to be taken day-by-day by customers. Thus, trending products that satisfy emotional and temporary needs exist for both industries. This makes it necessary for those industries to be responsive to the market and to unpredictable demand. (d’Avolio et al., 2017)

Both industries are seen as production-consumption systems and therefore share influencing factors such as ‘prices, income and taxation; trade and global production chains and their impacts on prices; technological advances, new business models and marketing; urbanisation and infrastructure developments; demographic patterns related to the size and structure of the population; and critically, social and cultural factors such as habits, social norms and heritage’ (EEA, 2014). With regards to the supply chain of the food and fashion industries, both deliver innovative products instead of functional ones, this leads to short life cycles, high contribution margin along with high variety (Fisher, 1997).

Impacts, such as emissions of greenhouse gases, acidifying air pollutants along with tropospheric ozone precursors and material, water as well as land use are found to be relevant for both industries. For the food and the fashion industry, products and their components are moved across the globe, this leads to environmental impacts of the life-cycle being recognised abroad more than in Europe itself. Both industries are fighting against high environmental and social pressure while working in a highly globalised supply chain. (EEA, 2014)

In order to evaluate the transferability of policies with regards to sustainability in the food industry onto the fashion industry, both of them are addressed with regards to the Triple Bottom Line (TBL) Theory.

Yildiz et al. (2015) describe the phenomenon that the term sustainability is interpreted differently in the literature: Many publications on sustainability refer to recycling, upcycling and circular economy (De Young, 1989; Lindsay and Strathman, 1997; McDonald and Oates, 2003; Geissdoerfer et al., 2017), whereas other authors focus on ethical production and consumption (Newholm and Shaw, 2007; Jägel et al., 2012; White, MacDonnell and Ellard, 2012; Cornish, 2013; Peloza, White and Jingzhi, 2013). Furthermore, a number of researchers have argued that reducing the consumption of products and avoiding consumption reflect the concept of
sustainability (Taylor and Todd, 1995; Lee, Motion and Conroy, 2009; Cleveland, Kalamas and Laroche 2012). A further topic associated with the term sustainability is energy reduction and efficiency (Roberts, 1996; Baca-Motes et al., 2013; Antonetti and Maklan, 2013).

The Triple Bottom Line Theory TBL is one concept that refers to sustainability as being a concept of three inter-emerging lines that can only work if all of them cover sustainable practices. The three pillars are called environmental impact, social impact and economic impact. (Elkington, 1997) In order to provide a clear definition of the term sustainability in this master’s thesis, the TBL theory is chosen as the framework and explained below by comparing the food and the fashion industry.

3.1.1 Triple Bottom Line

The TBL refers to sustainability as being a concept of three inter-emerging lines that can only work if all of them cover sustainable practices. The three pillars are called environmental impact, social impact and economic impact. (Elkington, 1997) This chapter will emphasise the impacts, that both, the food and especially the fashion industry have on the three sustainability dimensions in order to facilitate the comparison.

Environmental Impact

The UN Sustainability Goals set the aims for social and environmental sustainability to be reached by 2030. Therefore, Goal 12: Responsible Production and Consumption addresses and subsequently affects the fashion industry and likewise the food industry directly (UN, 2015).

Meanwhile the European Environmental Agency (EEA, 2018), named additionally following goals in the 7th Environment Action Programme for the European Union: to protect, conserve and enhance the Union’s natural capital; to turn the Union into a resource-efficient, green and competitive low-carbon economy; and to safeguard the Union’s citizens from environment-related pressures and risks to health and well-being.

While the water use is higher for both industries in comparison to other impacts, the acidifying air pollutant emission is highest for fashion but the third most important for the food sector (European Commission, 2012). EPRS (2019) also shows, that European consumers are held responsible for impacting the environment up to 80 per cent by consuming food, transport and private housing, while clothing contributes with up to 10 per cent. Furthermore, it can be seen, that the food industry has the highest impact on the environment. Especially the consumption of resources like land, water and energy lead to emissions and waste such as social, economic and health-related impacts. Due to high import rates, these impacts are above all measurable in countries outside Europe. Trends like higher available incomes, lower prices, an increasing number of households and cultural factors are increasing environmental impacts even more by making improvements in eco-efficiency more difficult to implement. (EEA, 2014)

Above other industries, the fashion industry is named to be responsible for water consumption of 79 billion m³, CO₂-emissions of 1,715 million tons and waste of 92 million tons only in 2015. Furthermore, those numbers are expected to grow by 50 per cent by 2030 if the industry continues as now. (GFA and BCG, 2017) In addition, the environmental impact of clothing is recorded throughout the whole supply chain,
including the distance textile products travel during their lifetime. This increases the environmental impact of clothing consumed in Europe in countries all over the world. As in the fashion industry, the food industry was changed by factors like ‘the growth in income levels and falling food prices, and globalisation and international trade, with the EU, United States, China, India and Brazil frontrunners in the global market’. (EEA, 2014)

While the global food industry is contributing to freshwater use with 70 per cent, on fossil-fuel use with 21 per cent and to all CO₂ emissions with 30 per cent, the fashion sector in Europe uses up to 46.4 billion m³ of water and emits 195 million tonnes of CO₂. A very important factor in the fashion sector compared to the food sector is the waste: In the European textile sector this was 11.1 million tons in 2018. (EPRS, 2019)

With food, having the highest environmental impact especially water and land use are crucial factors meanwhile in the fashion industry to the water consumption also waste and using of damaging chemicals are important factors to be aware of.

Social Impact
The social impacts of both industries are difficult to measure. Also, in this case, it is important to consider the length of the supply chain and the involvement of many countries. Labour laws, minimum wages and workers protection rights do exist but are different for each country in the world. Many countries are dependent on the fashion and food industry, which needs to be taken into account when changing structures (EEA, 2014). But with the fashion industry employing 1.7 million people in Europe alone in 2017, the security and livelihood of those workers should be considered (EURATEX, 2017).

For long and globalised supply chains, the social impacts are very important, due to the distribution of responsibility, the concomitant health risks from pollution and the resource scarcity can be seen as high for both industries (EEA, 2014).

Economic Impact
The European Parliament Research Service (EPRS, 2019) emphasises that the rising clothing consumption within the EU led to increasing imports in a span of 33 per cent in the year 2004 up to 87 per cent in the year 2012. This can be ascribed to the major challenge for both, the food and the fashion industry, which is the growth of population leading to increasing demand for goods and services along with their environmental impact (EEA, 2014). Furthermore, the main structure of both industries is very similar, such as the large life-cycle, environmental impacts and the challenges that derive from limiting those impacts. While they both remain with economic and social strength the relation of imports to exports is varying significantly (ibid.).

Eurostat (2018) states that in 2017 European households spend their money by 15.4 per cent on food and non-alcoholic while in comparison the expenditure for clothing amounts 6.1 per cent of the available income. This indicates the regularity in which food and fashion items are bought since fashion items have a longer life cycle because they can be reused and are not bought on a daily basis as it is for food or beverages.

3.1.2 Overview
The aforementioned differences and similarities are summarised in the following table.
Table 1: Characteristics of the Food and Fashion Industry in Comparison, author’s table acc. to (EEA, 2014); (Fisher, 1997) and (d’Avolio et al., 2017).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Fashion Industry</th>
<th>Food Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Products</strong></td>
<td>Innovative</td>
<td>Innovative</td>
</tr>
<tr>
<td><strong>Supply Chain</strong></td>
<td>Globalised</td>
<td>Globalised</td>
</tr>
<tr>
<td><strong>Frequency of Need</strong></td>
<td>Non-essential</td>
<td>Day-by-day</td>
</tr>
<tr>
<td><strong>End of the life cycle</strong></td>
<td>Reusable</td>
<td>Consumable</td>
</tr>
<tr>
<td><strong>Variety of items</strong></td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td><strong>Environmental Impact</strong></td>
<td>– Medium Impact (Acc. to EEA, 2014)</td>
<td>– High Impact (Acc. to EEA, 2014)</td>
</tr>
<tr>
<td></td>
<td>– Outside Europe noticeable</td>
<td>– Outside Europe noticeable</td>
</tr>
<tr>
<td><strong>Social Impact</strong></td>
<td>Workers around the globe</td>
<td>Workers around the globe</td>
</tr>
<tr>
<td><strong>Economic Impact</strong></td>
<td>– Imports / Exports ratio (per weight) EU/other parts of the world: 11.2</td>
<td>– Imports / Exports ratio (per weight) EU/other parts of the world: 1.2</td>
</tr>
<tr>
<td></td>
<td>– Household-Spending Europe: 6.1% of income</td>
<td>– Household-Spending Europe: 15.4% of income</td>
</tr>
</tbody>
</table>

Table 1 shows how similar the food and fashion industries are when it comes to the supply chain and its globalisation. By examining the different aspects along the supply chains of each industry it can be seen, that there are many similarities, especially regarding the impacts food and fashion have on the environment. For the European industry, it is important to lower these harms although being operating in other countries. This might be achieved by policies that influence factors inside the EU such as the buying behaviour and the waste prevention since both sectors are relying on resources such as land, water and energy (EEA, 2014). Since the environmental impacts for food are significantly higher than they are for the fashion industry, therefore, the food industry can be seen as a role model. The main difference can be seen in the import/export ratio that may indicate the globalisation of a supply chain, where it is significantly higher in the fashion industry. This must be considered when examining the social impacts as well.

In order to reach the UN Sustainability goals, the introduction of new policies is one approach in order to address both, the industry and the customers. Due to this comparison, it can be said that the food and fashion industries seem to be similar with regards to their supply chain and its environmental impacts. This makes the food industry highly valid for a transfer of policies and thereby to benefit from the industry’s learnings. The food industry is facing major environmental hazards and due to that introduced policies regulate consumption and impact. Examples for this are deposit systems for single-use drinking containers (e.g. Scandinavian countries and

Germany) or ‘soda taxes’ that tax sugar as an ingredient in drinks and snacks (e.g. ‘Sugar Tax’ in Denmark and ‘Junk Food Tax’ in Hungary). (European Commission, 2012)

These policies were able to influence the functions of the food system regarding consumption and production and therefore reduce the environmental impact of the industry (EEA, 2014). In the past, other control instruments were implemented for both industries. These are, for example, the certification schemes that are implemented in the fashion and the food sector (European Commission, 2012).

3.2 Control Instruments

Since its existence, there have been disagreements, based on different ideologies, over the responsibilities of the state as an institution and whose tasks it should assume as well as which goals it should pursue (Fleiner-Gerster, 1980, p. 390). An independent institution like an individual state or an association of states proposes laws, policies and programmes and creates, therefore, a legal framework for its citizens and entities in which they can interact with (European Commission, n.d.). However, reflected goals as well as interests are dependent on the represented population and the elected or not elected government of a country [stakeholder, shareholder] but include basic needs like physiological and safety needs (Maslow, 1943). Global warming is destroying the livelihoods of millions of people and therefore climate protection is one of the fundamental challenges of the coming decades (Sanchez, 2009). For this reason, policy instruments to influence and control social behaviour and economic action are urgently needed to achieve the goal of a more sustainable framework.

Environmental control instruments evolved and further developed in a diversity of directions since the early 1960s, and do not only include corrective regulation. (Pimpinello and Klancko, 2003). Furthermore, change towards sustainability is driven by preventative actions such as the development and application of climate-friendly technologies (Lund, 2007).

The content of the following sub-chapters explains the definition of control instruments, shows their different types and finally visualises the advantages and disadvantages in tabular form.

3.2.1 Definition

Control instruments are governance tools, which require the employment of state authorities or its deliberate restrictions. Policy instruments not only manage mechanisms within the field of political science but they also often affect individual behaviour as well as economic status quos or interactions. (Howlett, 2005)

A state owns a wide variety of governance tools and control instruments to achieve policy goals. In general, steering and managing of a legal framework aim to produce a targeted social order. In this function, control accomplishes the following two purposes according to Bandelow (2004) which are described in detail in the following chapter 3.2.2 ‘Types’:

1. The distribution of social resources which describes the allocation and distribution of limited resources (e.g. labour, capital, land or raw materials) for the production of goods and services.

   → Type of distribution: Planned assignment vs. market-based mechanisms
2. The Coordination of social activity which describes the action of influencing social action direct or indirect.

→ Type: Vertical, state coordination vs. horizontal, social self-organisation

It can thus be concluded that the economic system and its regulations define the distribution of social resources as well as the coordination of social action. The European Union promotes not only the view of a neo-liberal state which controls rather with the market as coordination and distribution mechanism but at the same time also the idea of a cooperative state with individual autonomy and self-organisation (Jervis, 1999).

3.2.2 Types

Control instruments can be divided into different categories depending on their achieved goals as well as on their mechanisms. The following classification developed by Bandelow in 2004, according to Braun and Giraud (2003), shows a variety of policy instruments:

1. Ensuring important public goods and resources

   a. Traditional sovereign rights of the state such as defence and external relations, police, justice, tax and financial rights (Howlett, Ramesh, 1995)

   → Sovereign rights of the state enable tangible and practical action by the state

   b. The state as a provider of goods and services if private actors are not (sufficiently) perceived such as public infrastructure, education, research, legal, environmental protection, culture. Deployment of these goods and services is necessary for a capitalist framework. (Scharpf, 1999)

   The direct provision by a state of such goods and services can differ according to Braun and Giraud (2003):

   i. Goods and services are produced, in case of market failure, for their own use and traded on their own responsibility by states. Example: State Research Institution

   ii. Goods and services are provided by state-owned companies in profoundly protected markets. The goal is to develop and maintain the existing infrastructure. Examples: Energy Supply, Telecommunications

   iii. Goods and services are provided by the state to support its control and influence on social action. Example: Compulsory education results from the construction and developments of schools as well as the recruitment of teachers

2. Influencing social actions (directly or indirectly)

   a. Direct Control Instruments also known as regulative control instruments work through threats, obligations and restrictions in the form of laws, decrees, regulations etc. (Reagan, 1987). The aim is to regulate social or individual action. Therefore, direct control can be
divided according to Windhoff-Heritier into the following categories (1987):

i. Competitive-Regulatory instruments that mainly regulate the market behaviour

ii. Protective-Regulatory instruments should avoid the negative consequential costs of economic production

iii. Socio-Regulative instruments regulate normative social issues

b. Indirect Control Instruments

i. Financial Incentives: Individuals, households, businesses and organisations are convinced by a particular optional behaviour. They aim for the material needs of the addressees. Positive incentives offer a material advantage, while negative incentives offer a material disadvantage. Financial incentives can be found in monetary, credit, tax and fiscal policy. (Scharpf, 1983)

Example: Increase of excise duties on cigarettes and alcohol.

ii. Structuring: Behavioural offers in the form of social observable arrangements seek to influence the attitude of social individuals and organisations. Behavioural offers seek to influence behaviour in the form of institutional opportunities, participation and property rights or procedural rules. (Görlitz and Burth, 1998)

Example: Providing infrastructural services.

iii. Conviction: Through various forms of persuasion, attempts are finally made to influence the behaviour of social actors. Forms of this control are information, political advertising, appeals, education campaigns and propaganda. The aim is that the addressee understands the purpose of the measures. The effect of beliefs is difficult to predict because they are particularly voluntary. (Schubert, 1991)

Example: Advertising campaigns.

Table 2: Classification of Policy Instruments acc. to Dunkelmann, 2004 (author’s translation).

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Influencing Social Actions and Behaviour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types</td>
<td>Direct Control</td>
</tr>
<tr>
<td>Traditional Sovereign Rights of the State</td>
<td>The State as a Provider of Goods and Services</td>
</tr>
<tr>
<td></td>
<td>Regulative Instruments</td>
</tr>
<tr>
<td></td>
<td>Financial Incentives</td>
</tr>
<tr>
<td></td>
<td>Structuring</td>
</tr>
<tr>
<td></td>
<td>Conviction</td>
</tr>
</tbody>
</table>
3.2.3 Advantages and Disadvantages of Control Instruments

The following Table 3 visualises the advantages and disadvantages of government control instruments supported by relevant literature.

Table 3: Advantages and Disadvantages of GCI (author's table).

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum standards can be created to enhance the quality of opportunities</td>
<td>Policy instruments can lead to an extended bureaucracy and therefore affect</td>
</tr>
<tr>
<td>within the market for companies as well as ensuring a secure environment</td>
<td>time and cost (Lascoumes and Le Gales, 2007).</td>
</tr>
<tr>
<td>for consumers and employees (OECD, 2015).</td>
<td></td>
</tr>
<tr>
<td>Responsibility can be accepted by introduced control instruments and thus</td>
<td>Standards may affect freedom of market players - consumer, producer and</td>
</tr>
<tr>
<td>the bias for problems created by the market (market failures) between</td>
<td>institutions (Dempster and Isaacs, 2017).</td>
</tr>
<tr>
<td>producers and consumers becomes obsolete (Hanusch, Kuhn and Cantner,</td>
<td></td>
</tr>
<tr>
<td>2000).</td>
<td></td>
</tr>
<tr>
<td>Goals can be achieved (faster) through framework conditions with direct</td>
<td>Innovation and entrepreneurship can be impaired by policy instruments</td>
</tr>
<tr>
<td>and indirect actions (Howlett, 2005).</td>
<td>(Brockmann and Staak, 2011).</td>
</tr>
</tbody>
</table>

The opportunities, as well as the threats policy instruments bring along can lead to a framework that supports sustainable actions within the market. Therefore, the next chapter introduces the chosen implemented policy instruments in the food industry that encouraged sustainable performance.
4 Overview of Policy Instruments

Based on the definition and classification of governmental control instruments, the following section presents already implemented policy instruments in the food industry inside the European single market which drive change successfully towards sustainability.

The reasons for choosing the food industry as a comparative industry are the similarities between the food and textile industries (cf. chapter 2.2) as well as the variety of control instruments applied in the food industry.

Several control instruments are applied within the food industry to regulate the market, set standards and control them in order to fulfil their objective. Three examples were selected on the basis of an in-depth literature review with the focus on their relevance, their impact as well as on their potential transferability from the food to the fashion industry. All three policy instruments were analysed in the past by international institutions like the EU and WHO, deliver excellent results in their field applied and are therefore highly relevant for this research. In addition, the following cases represent different types of control instruments, which are explained in detail in chapter 3.2.2 ‘Types’:

- C-I: Competitive-Regulatory Direct Control Instruments
- C-II: Protective-Regulatory Direct Control Instrument
- C-III: Structuring Indirect Control Instrument

The following three cases illustrate how the market can be steered and how market participants can be guided towards more sustainable behaviour by implementing control instruments. The review of governmental control instruments from the different European countries Germany, Hungary and Italy has shown that various starting situations, goals and theoretical foundations have led to differing policy designs and, as a result, different outcomes have been generated. Therefore, the analysis of the instruments has been divided into the following sub-categories (cf. chapter 2.2.1) in order to facilitate comparability and ensure clarity:

- Background
- Case
- Purpose
- Framework
- Policy Design
- Results
- Conclusion
4.1 C-I: Deposit System for Drinking Packages in Germany

Background:
Reusable packaging deposit systems have a long history and were introduced to enable a circular economy in the area of packaging and therefore save resources. The first deposit system for beverage packaging with the intention to reuse the issued bottles was introduced in 1885 in Sweden (Allmänna Standardiseringsgruppen, 2019). The difference between this and every later implemented multi-use deposit system as opposed to single-use packaging deposit systems is the purpose of the following practice: Single-use packages are applied with a deposit to make this environmentally harmful method of packaging more expensive and therefore unattractive for consumers to buy (Groth, 2005).

Case:
A legal framework has been established in 1991 in Germany with the purpose of transferring the responsibility for the disposal of certain products and their packaging from the municipalities to the economy (BMU, 2019). Therefore, the packaging ordinance VerpackV has been introduced which includes a mandatory deposit system for single-use drinking packages. The anchored compulsory deposit for disposable beverage packaging became effective on the 1st of January 2003, due to the clear fall of the quota for returnable beverage packaging below the reference value prescribed by the Packaging Ordinance. (Groth, 2005)

Purpose:
The purpose behind the introduced mandatory deposit on single-use beverage packaging was, on the one hand, the promotion of ecologically advantageous beverage packaging that makes the use of environmentally harmful beverage packaging unattractive and thus provides an incentive to make a decision towards more environmentally friendly beverage packaging (Deutsche Umwelthilfe, 2017). On the other hand, a high return rate of single-use packaging to avoid environmental pollution by discarded beverage packaging should be achieved through the application of a compulsory deposit. Furthermore, a single-origin collection of the assembled materials should be performed through the employment of this instrument. (Groth, 2005)

Framework:
A number of theoretical models are supporting the legislation to establish a deposit system for disposable drinking containers of which a selection is listed and briefly described below:

1. Reusable bottles are more environmentally friendly than disposable bottles: The energy and resource consumption for return, transport and cleaning of returnable bottles is significantly lower than the additional production effort for single-use drinking containers. This applies in particular if the distribution is regional and the number of refills is high. (GVM, 2017)

2. High quality of the environment is defined as a non-excludable public good since society as a whole causes environmental problems and is consequently affected by them. In the end, individuals who are not willing to contribute to this benefit will still profit if other private or public entities ensure high ecological quality. (Hubert, 2018)

3. Consumers are exposed to two financial incentives: Firstly, beverages in returnable packaging, which is ecologically more advantageous, will become
relatively cheaper and thus economically more advantageous for the end consumer. Secondly, it makes economic sense to return used one-way drinking containers to the retailer in order to avoid financial damage. (Groth, 2015)

**Policy Design:**

Since January 2003, a Deposit Obligation for disposable beverage packaging exists in Germany, which mainly concerns mineral water, beer and soft drinks, but was amended multiple times (Hubert, 2018). In addition, the ‘deposit collection obligation’, which obliges retailers to charge a deposit on single-use beverage packaging, and the ‘repurchase obligation’, which obliges retailers to take back these packaging, are essential components of the Deposit Obligation: The take-back responsibility determines the relationship between the end user and distributor on the return of disposable beverage packaging from consumption to recovery (DPG Deutsche Pfandsystem GmbH, 2012). Pursuant to § 9 (1) Sentence 7 VerpackV, distributors of disposable beverage packaging are obliged to take them back from end consumers after the use phase. Therefore, the different distributors of single-use beverage packaging developed a variety of deposit systems which made the process of returning empty bottles and cans complicated for both, consumers and the beverage retail trade (Groth, 2006, pp. 44-45).

In order to be able to implement the requirements of VerpackV and to simplify the return process, industry and trade have independently created the required deposit system. For this purpose, the German Deposit System (DPG) was founded in 2005, which provides the necessary legal and organisational framework for the return and deposit refund system. As equal partners, the German Retail Trade Association (HDE) and the Federal Association of the German Food Industry (BVE) hold 50 per cent of the shares each and therefore have the same voting rights. (DPG, n.d., a)

The participants in the deposit system are primarily so-called first-time distributors (manufacturers and importers), traders and consumers. In order to be able to participate in the deposit system, all beverage producers and distributors of drinks within the single-use packaging market, which have to follow the deposit obligation, must first be registered at the clearinghouse for the deposit system. This is accomplished by registering with the DPG by signing a contract that contains the DPG conditions of participation. When registering, each company must decide which roles it wants to fulfil in the one-way deposit system: Beverage manufacturers and importers, for example, take on the role of the first-time distributor, and thus inseparably, the role of the deposit account manager. Wholesalers and retailers fulfil the part of the redemption, but can also act by distributing private labels as first-time distributors and deposit account managers. In addition, retailers and final distributors are also debtors, as they have to pay out commitments to end users. In addition to the involved players, there are service companies in the deposit system that can log in as a deposit account service provider which manages the material as well as the cash flow.

Every company that participates in the DPG system has to pay a roll-dependent fee each year for its participation in the DPG. Only the participants in the role of repayers do not have to pay any fees. Any amounts of money that the retailer had to pay out to consumers can be invoiced as a claim to the first-time distributor, which use the income they generated with the sales of drinks including the deposit amount. This process is described as a deposit settlement or a deposit clearing. Ideally, all beverage packaging will be returned, the deposit accounts are balanced for all members involved and the financial loop is closed. Otherwise, there will be a surplus on the deposit account of the first-time distributors. (DPG, n.d., b)
Results:
The original goal of implementing a deposit system for single-use drinking containers was to increase the reusable drinking packages proportion for the total amount of drinking packages consumed. This aim was not achieved, as the quota for reusable containers has fallen steadily in recent years (GVM, 2017). This situation cannot be explained with a total failure of the deposit system but rather with a change of the living conditions for society and their different consumer behaviour (Umweltbundesamt, 2018). In result, the general environmental objectives resulting from the Packaging Ordinance should not be questioned (Groth, 2005). Furthermore, the deposit system should be supplemented with an environmental levy to make single-use beverage containers unattractive for consumers to decrease the proportion of non-reusable packaging in the beverage market (Hubert, 2018). In contrast to the non-achievement of the original goal, the return ratio of single-use beverage containers significantly increased and therefore pollution through discarded drinking containers decreased substantially, due to the financial incentive on returning one-way bottles and cans (Groth, 2005). Moreover, the conditions for recycling of single-use beverage packaging have strongly improved by firstly, the consistent single-origin quality of the collected material and secondly, the amount of collected material for the recycling processes (bifa Umweltinstitut, 2010, pp. 73-78).

Conclusion:
In conclusion, the deposit system for single-use drinking containers steered the beverage market, not into the desired direction but set the base for more efficient recycling activities, as well as for a less polluted environment through beverage packages in Germany.

4.2 C-II: Public Health Product Tax in Hungary

Background:
Diabetes and obesity have developed into a global dilemma due to excessive sugar consumption of modern society, which also leads to other major risk factors for health such as non-communicable diseases (NCDs) including different kinds of cancers and heart diseases (WHO, 2003). Therefore, governmental control instruments such as fiscal policies can help to reduce the consumption of sugar and other substances hazardous to health. The first sugar tax was introduced in 1841 in Prussia, a former historical prominent state of Germany, but with the different intention of taxing the rising sugar refinery industry to collect money to finance the state budget. The sugar tax was abolished in January 1993 with regard to market harmonisation in the European Community in order to avoid distortions of competition. (manager magazin, 2002)

Recent trends show that taxes are increasingly being introduced in various countries that blame sugar as a trigger for disease patterns and tax it in order to introduce a preventive measure (Nakhimovsky et al., 2016).

Case:
NCDs, mostly caused by unhealthy diet patterns, are the main reason for death in Hungary as well as in other industrialised countries (Eurostat, 2018). Consumption of sugar, salt and caffeine higher than suggested is linked to obesity and thus threatened by side effects such as hypertension, diabetes type II and possibly cancer (Vos et al., 2017). The National Diet and Nutritional Status Survey ‘OTÁP 2014’ (2017) presents the information that nearly two-thirds of Hungary's adult population is overweight or
obese and consequently exposed to a significantly high risk of contracting these serious diseases mentioned above. Furthermore, Hungary's per capita salt consumption is the highest within the European Union which is one reason for the high mortality rate caused by NCDs (Brown et al., 2009). For the reasons aforementioned, a fiscal control instrument has been introduced in 2011 in Hungary - the Public Health Product Tax (PHPT) - to steer supply and demand within the market to increase consumption of hazardous ingredients (WHO, 2018).

**Purpose:**
The aim of introducing PHPT was to increase public health objectives through enhancing dietary patterns of the Hungarian population. Encouraging substitutions of and in products to decrease the salt, sugar as well as caffeine content, for both industry and consumers, is the main purpose of this steering tool. (UK Health Forum, 2017) As a result of the above-mentioned reasons, the objective of the control instrument is to reduce overweight within the Hungarian population and thus minimise the potential health risks (WHO, 2018). Furthermore, the collected revenue through taxation helps to support health services in the public sector (St. Germain, 2017).

**Framework:**
Several theoretical models support the legislation of the PHPT implementation and a selection is listed and shortly described below:

1. The supply and demand assumption which describes the effect of taxes that lead to a rise of the consumer price for a good and lower, therefore, the quantity consumed. Whether the tax is imposed on the consumer or the producer does not matter in this sense, because in both cases the tax is shared by both. (Spaulding, n.d.)

2. Moreover, the competitive advantage theory underlines the adaptation of the producer and its products to the changed market conditions in order to be able to continue offering goods or services in competition (Porter, 1985, pp. 8-10).

3. In addition, the framework of a revenue model that describes the methods for generating revenues is a supportive argument for the application of PHPT and its revenue use: It determines the source to pursue, specifies the value and the type of price as well as the addressee of the revenue (Afuah, 2004, pp. 67-69).

**Policy Design:**
Hungary implemented the PHPT in 2011, a charge levied on foods containing unhealthy ingredients that exceed a certain limit value (Bíró, 2015). Before the PHPT was introduced, laboratories analysed food ingredients to determine unhealthy foods and quantify the amount of sugar, salt and other non-healthy ingredients which have been added. The data collected was combined with information on the consumption of foods rich in salt and sugar to be used as a reference in the process of preparing the tax legislation. This information was later also used as a reference for monitoring and evaluating changes in consumption patterns. The paperwork for the taxation of producers and sellers was considered to be minimal. In addition to its implementation, the tax was modified five times since 2011 to close gaps in the legislation and guarantee its efficiency. The tax is collected at the point of sale from the consumer for food falling into the category of "unhealthy food" as defined by the PHPT as well as from sellers when a taxable item is offered for the first time on the Hungarian market. The tax is levied per unit of product sold and measured in kilograms or litres. Only in exceptional cases is a distinction made according to the amount of the ingredients contained. (WHO, 2018)
Products that by definition are taxable according to the PHPT are listed below:

- Pre-packed sweetened products with a high amount of sugar (candies, biscuits)
- Soft drinks that contain added sugar (lemonades, smoothies and juices)
- Fruit jams and other similar sweetened preserved foods
- Aromatised beer with added sugar and other alcoholic beverages
- Energy drinks
- Oversalted snacks (chips, cracker and other)

In addition, PHPT is defined as an earmarked tax, which means that the steady stream of revenue created by the taxation is destined for public health and helps to compensate health costs for nutritional diseases. (ibid, 2018)

**Results:**

According to Epstein et al. (2012), the experimental literature on tax and subsidy policies shows a consensus that fiscal or subsidy strategies can change the patterns of consumption for targeted products. Due to substitution effects, however, the impacts on human health of such steering tools are controversial.

The PHPT has had a significant impact on the market and consumer behaviour of Hungarian society. Since its introduction in 2011, the consumption of unhealthy food has declined. This is partly due to changes in consumer behaviour among the population but also to changing supply on the market by producers and sellers (WHO, 2018). The Hungarian Institute for Health Development's first evaluation in 2012, cited by OETI in 2015 showed that 40 per cent of unhealthy food manufacturers changed their product formulas to reduce (28 per cent) or eliminate (12 per cent) unhealthy ingredients following the introduction of the tax. The results of the ‘Assessment of the impact of a Public Health Product Tax’ show that the tax has changed the consumer behaviour of the Hungarian population with regard to taxed products (ibid.). In addition, substitution effects on healthier food have reduced the risk of developing dangerous diseases ( Bíró, 2015). The tax generated 61.3 billion Ft. (around €190 million) for public health expenditure in its first four years of operation which corresponds to approximately 1.2 per cent of the governmental spending for health in Hungary in 2013 (OETI, 2015). In addition, the taxation of food classified as unhealthy has led to a public debate that has better informed the population about health risks and triggers (St. Germain, 2017).

**Conclusion:**

It can be concluded that the tax was successful in modifying the consumer behaviour of the Hungarian population as well as the supply of unhealthy food and ingredients by producers into a positive direction in the long run. In addition, the population’s knowledge of unhealthy ingredients has increased and financial resources have been collected for the purpose of upgrading the health system.
4.3 C-III: Sustainable Public School Food Procurement and
the Adoption of Organic Food in the Municipality of Rome

Background:
Consumers do not only pay the visible price in stores for their food, but they also spend money on hidden costs: firstly, when subsidising agriculture and secondly, when managing the pollution caused by contaminating farming practices (Pretty et al., 2000). The consequences of industrialised agriculture and food manufacturing are recognised as having an extensive impact on the environment and are considered to be responsible for 20 to 30 per cent of the various environmental impacts of total consumption and more than 50 per cent of the water pollution within the European Union (IPTS, 2006). Conventional agriculture, in contrast to organic agriculture, contributes with a significantly higher impact on global warming and human health risks by the massive use of poisons (Horrigan et al., 2002). Using pesticides and fertilisers lead to structural problems for the environment such as soil degradation, forest destruction and loss of biodiversity (European Commission, 2008). In addition, pesticides and fertilisers are designed to impact living systems and are therefore suspected of being responsible for cancer and other non-contagious diseases (Blair et al., 2014).

This results in the situation that conventional agriculture achieves poor results in all three sustainability dimensions defined by the TBL theory and thus cannot be classified as sustainable when compared directly to organic agriculture.

Human well-being and health, in harmony with an appreciative approach to nature, are the goals of sustainable food production. Canteens managed by public institutions can make a special contribution by providing food to their citizens. On the one hand, they can be used to advertise information on healthy nutrition and on the other hand to reduce health risks and environmental impacts by using organically produced food. If public canteens buy pesticide-free food that is also produced regionally and seasonally, they can make an important contribution to supporting regional added value. (OCPS, 2017)

Case:
Italy has a long tradition of school canteens, where the majority of pupils and students have access to a warm meal at school. More than 130 years ago, school canteens were introduced and from there up to the 1970s, school lunch was important for securing adequate food supply for everyone at school. Hygiene and nutrition issues were brought into focus in the 1980s and the first ‘nutritionally safe’ menus were set up. (Nielsen et al., 2009)

Food quality became an issue of discussion in some municipalities including Rome in the 1990s and the school meal discourse focused on topics such as product origin and sustainable methods of production (Core Organic, 2010). The discussions were followed by action in the early 2000s in Rome, when the local school meals system has been undergoing a radical reform process under the official motto ‘all for quality’ (Sonnino, 2008). The municipality of Rome is gradually making its procurement practice more sustainable as well as innovative: The main themes considered are guaranteed food origin, food freshness and taste of meals, the variety on the plate, a

7 Includes also public kindergartens.
pleasant, healthy and functional environment, regular and careful controls, nutritional training and a reasonable budget (OCPS, 2017).

**Purpose:**
The objective is to increase the proportion of organically produced ingredients in school meals in order to promote food safety and more environmentally friendly behaviour (GPP News-Alert, 2011). Furthermore, the quality of the food, its nutrition and therefore the health benefits are an important argument for the implementation of this steering tool for public food supply (OCPS, 2017). In addition, the city administration wants to improve the framework conditions for the local agriculture and boost therefore the local economy through the green purchase of regionally harvested organic ingredients (Sonnino, 2008). The three aims listed above are to be summarised under the overall objective of introducing a strategy that leads to more sustainability in all involved dimensions (economy: support the local economy, ecology: reduce the environmental impact and society: improve the nutrition quality and thus health benefits).

**Framework:**
The legislation is based on a variety of theoretical models which support the structural change in food purchase and offer. A selection of the most important theories is listed and shortly described below:

1. Organically produced ingredients for food are healthier, safer, less harmful for the environment and therefore more sustainable than conventionally produced food and thus provide the best basis for modern school catering. (Cerri, Thøgersen and Testa, 2019).

2. Public food supply chains organised and influenced by public institutions have a high impact on the people interacted with throughout education, the demonstration of a particular lifestyle as well as the supply of specific foods and prices (Robin, 2017).

3. Green Public Procurement: Public institutions are large-scale consumers and can use their purchasing power to use environmentally friendly and socially compatible goods and services and thus make an important contribution to sustainable consumption and production (European Commission, 2016b).

**Policy Design:**
The basic program structure in Rome is completely privatised, meaning that private food businesses employ the staff needed to cook and serve meals in facilities owned by the public (Core Organic, 2010). As a result, the city administration adapted the requirements for tenders for the public school catering to the framework of GPP (developed by the Environment Directorate General of the European Commission) and in order to implement the standards, a complex process was necessary, which has been continued to this day and has been optimised from tender to tender (OCPS, 2017). The GPP criteria address the most significant impacts on the environment, are intended to be used with minimum additional verification or cost increases and focus on the implementation of more organic foods, seasonal products, sustainable aquaculture and marine products as well as higher animal welfare standards (ICLEI, 2008). The city of Rome has, therefore, chosen a progressive and creative approach of food procurement and involved the production side as well as the consumption side in the process (Sonnino, 2008). Hence, experts were consulted, who developed recipes that are adapted to the season, the availability of local ingredients and the age of the children and their need for nutrition. In conclusion, a ‘summer menu’ (April-September), as
well as a ‘winter menu’ (October-March), have been developed on the basis of the numerous recipes. One seasonal menu lasts 24 weeks and can rotate three times during this half-year period. In order to achieve the best possible result with all participants, parents and pupils were also invited to discuss their preferences for food and can thus influence the offer (OCPS, 2017).

The tender procedure by the city administration for the provision of food is characterised by two different components: First, the city will be divided into eleven different lots and each lot will be served by a different private company following the official guidelines (Sonnino, 2008). These framework conditions are intended to promote transparency and equal opportunities for competing companies. In addition, all contracting firms are required to obtain the ‘ISO 9001 Quality Certification’, develop a ‘HACCP8 Plan’ and produce a handbook of good hygienic practice indicating all the rules adopted with reference to the hygiene of personnel, equipment and premises. Furthermore, quality assurance is covered by local food inspectors to ensure that contractual agreements are respected and executed: Therefore, additional contracts were negotiated with two private laboratories which analyse different meals on a daily basis to verify the quality and hygiene. (OCPS, 2017)

From a quality management perspective, a panel has been established to enable public institutions, producers and suppliers to meet on a frequent basis to discuss challenges and opportunities within the public food procurement system (Sonnino, 2008). The overall cost for public food procurement by introducing organic food as the main component of school meals increased by 8.5 per cent (Liquori, n.d.).

However, in the years 2007 - 2012, the food supply in the 740 schools (140,000 pupils) of the city has been subsidised with an amount of 700 million €. As a result, families paid less than half the average price for school meals and for low-income families, the amount was reduced by a further 25 per cent, where else very financially disadvantaged families received school meals free of charge. (OCPS, 2017)

In addition, Liquori (n.d.) state that the companies that are involved in Rome’s public food procurement have also agreed to implement the following aspects:

- Replacing plastic cutlery with silverware.
- Distributing surplus food to facilities that feed the financially disadvantaged.
- Increasing recycling by distributing partially used food to shelters for animals.
- Reducing the production of waste throughout the entire process.
- Reducing the number of food kilometres (the distances travelled) to reduce pollution.

**Results:**

The use of regional organic ingredients in school meals in Rome increased from 10 per cent in 2001 to an impressive value of 70 per cent in 2008 (Nielsen et al., 2009). The complex transformation of the school catering led to an increase in quality and sustainability through a common objective of all parties involved in the process (OCPS, 2017). The increase in quality and sustainability led to a moderate price increase of 8.5 per cent and was absorbed by tax revenues and thus not noticeable for children and their parents (Liquori, n.d.). In addition, local agriculture was supported by controlled sales volumes throughout GPP and the motivation was given to convert

---

8 HACCP Plan for hazard analysis and critical control points, is a quality management tool developed for the production and processing of food.
to organic farming. This action, together with other initiatives which support organic farming and consumption, has made Italy one of the countries with the highest organic cultivation area in the world - 15.4 per cent in 2017 (FiBL, 2019).

**Conclusion:**
In the result of promoting a healthy diet, guaranteeing food safety, reducing the environmental impact and supporting the local economy a more sustainable practice and lifestyle have been established in Rome and the surrounding areas. In addition, a higher quality of school meals was achieved and food wastage was reduced.

### 4.4 Summary

The chosen policy instruments which are successfully applied in the food industry and achieve their goals to drive sustainability are presented in the table below to visualise the differences as well as the similarities in order to evaluate them later. The outcomes of the control instruments examined are described in the row 'Results'. The symbols + and - are used to illustrate positive (+) and negative (-) results.

**Table 4: Overview of Case Studies (author’s table).**

<table>
<thead>
<tr>
<th></th>
<th>4.1 Deposit System DPG</th>
<th>4.2 Public Health Product Tax</th>
<th>4.3 Public Food Procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Background</strong></td>
<td>Resource and energy use, environmental pollution, recycling</td>
<td>Health problems based on obesity</td>
<td>Discussions about food quality and needed nutrition for children</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Reduction of the environmental impact by increasing the quota for returnable drinking containers, reduce littering, simplify the conditions for recycling</td>
<td>Reduce sugar and salt consumption to minimise health risks, support the health care system</td>
<td>Increase the food quality, reduce the environmental impact, support the organic agriculture and local economy</td>
</tr>
<tr>
<td><strong>Policy Design</strong></td>
<td>Protective-Regulatory Control Instrument</td>
<td>Competitive-Regulatory Control Instrument</td>
<td>Indirect Control Instrument - Structuring</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td>- The quota for returnable drinking packages has decreased. + The amount of</td>
<td>+ Reduction of sugar and salt content in snacks. + Reduction of consumption of</td>
<td>+ The proportion of organically grown food in school meals rose from 10% to 70%.</td>
</tr>
</tbody>
</table>
pollution throughout drinking containers has fallen significantly.
+ The conditions for recycling have improved through a homogeneous collection of material.
sugary and salty snacks.
+ Minimising of health risks through a change of dietary patterns.
+ Supporting the health care system with the collected tax.
- Price increase for customers for snacks with high sugar and/or salt content.
+ Reduced environmental impact throughout less use of pesticides.
+ Higher quality of the ingredients minimises health risks.
+ Support of local agriculture and economy.
+ Food variety is bigger and ingredients are fresher.
- Costs have risen by 8.5%.
+ Consumers do not have to pay the higher costs.

<table>
<thead>
<tr>
<th>Sustainability Dimension</th>
<th>Economic and Ecological Sustainability</th>
<th>Economic, Ecological and Social Sustainability</th>
<th>Economic, Ecological and Social Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply Chain Part</td>
<td>Sales, After-Use &amp; Disposal</td>
<td>Production &amp; Consumption</td>
<td>Procurement &amp; Production</td>
</tr>
<tr>
<td>Recipient</td>
<td>Drink Manufacturers, Retailer, Consumer and Recycling Companies</td>
<td>Food Manufacturers, Consumer, Health Sector</td>
<td>Supplier, Catering Companies, Public Administration</td>
</tr>
</tbody>
</table>

Table 4 summarises the control instruments in order to evaluate them in the subsequent chapter on the basis of the criteria listed above.
5 Evaluation and Policy Transfer

In this chapter, the three GCIs previously examined are evaluated in order to determine the best-case policy among them with regard to their impact on sustainability. Based on this identified policy, a corresponding GCI is derived according to the framework conditions of the textile industry.

5.1 Evaluation

The evaluation of the three selected cases is conducted on the basis of the policy evaluation scheme that is proposed by the BZ\(^9\), which evaluates policies on a standard of the OECD-framework. This framework addresses the following criteria (cf. chapter 2.2.2):

- Efficiency
- Effectiveness
- Impact
- Relevance
- Sustainability
- Policy Consistency

In addition to the proposed evaluation levels, transferability is included as a criterion

- Transferability

All units to evaluate the policies are described in a range of low, medium and high to enable a rating of the contents in order to rank the policies afterwards. This is done by comparing the investigated policies.

Table 5: Evaluation of the Case Studies (author's table).

<table>
<thead>
<tr>
<th></th>
<th>Deposit System DPG</th>
<th>Public Health Product Tax</th>
<th>Public Food Procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Efficiency</strong></td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>→ time-consuming</td>
<td>→ labour-intensive</td>
<td>→ continuous review</td>
</tr>
<tr>
<td></td>
<td>→ labour-intensive</td>
<td>→ continuous review and</td>
<td>and adjustment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>adjustment</td>
<td></td>
</tr>
<tr>
<td><strong>Effectiveness</strong></td>
<td>Medium</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>→ missed objective</td>
<td>→ substitution of</td>
<td>→ all public</td>
</tr>
<tr>
<td></td>
<td>but relevant</td>
<td>sugar and salt not</td>
<td>institutions included</td>
</tr>
<tr>
<td></td>
<td></td>
<td>necessarily more</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>healthy</td>
<td></td>
</tr>
<tr>
<td><strong>Impact</strong></td>
<td>Low</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>→ main objective</td>
<td>→ objective</td>
<td>→ more regional and</td>
</tr>
<tr>
<td></td>
<td>not achieved</td>
<td>achieved</td>
<td>organic procurement</td>
</tr>
</tbody>
</table>
The table above visualises the categorisation of each policy by the evaluation criteria in a range of low, medium and high. According to the results of the evaluation scheme, C-III, which regulates the public food procurement for school meals in the municipality of Rome, has the most potential to be implemented effectively and efficiently to steer the textile market towards sustainable development.

However, it should also be mentioned that C-I and C-II have been successful in their field of application and that this does not mean that they cannot be transferred to the textile industry simply because they did not succeed in the evaluation. A take-back system for textile products and additional taxation of particularly environmentally harmful fibres or other components can certainly lead to a development towards a sustainable textile market.

<table>
<thead>
<tr>
<th>Relevant</th>
<th>Improvement of health care system (social impact)</th>
<th>Objective achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance</td>
<td>High</td>
<td>→ early implementation of an environmental steering tool</td>
</tr>
<tr>
<td>Sustainability</td>
<td>High</td>
<td>→ impulse setting for Circular Economy, Less Pollution</td>
</tr>
<tr>
<td>Policy Consistency</td>
<td>Low</td>
<td>→ too many exceptions from deposit obligation e.g. milk</td>
</tr>
<tr>
<td>Transfer-ability</td>
<td>Medium</td>
<td>→ recycling conditions differ between single-use drinking containers and garments: • product variety • material variety → high environmental impact of food &amp; fashion waste</td>
</tr>
</tbody>
</table>
Due to the ability to regulate the public procurement of food and thus influence public consumption patterns, industrial production standards can also be influenced. The policy instrument points out structural changes that significantly promote sustainability in the city of Rome. In order to reduce environmental and social impacts while increasing local value creation, the policy can regulate the range of products available to consumers.

In addition, the public sector does not only procure food for its employees but also textiles including work clothes for its employees in the public sector. Therefore, the next chapter discusses a possible transfer of policy C-III from the food industry to the textile industry. The possible steering instrument C-IV that was created from the collected data of the analysis of Instrument C-III with adjustments for the framework conditions of public procurement for textiles is presented in the same structure as the three aforementioned example policies in the next chapter.

5.2 Policy Transfer

In order to transfer the best-case policy C-III to the textile industry, a policy C-IV adapted to the framework conditions of public procurement of textiles is derived. Chapter 5.2 follows the structure of the previous chapters 4.1 - 4.3 in order to maintain a consistent research method. The ‘Policy Design’ contains thereby a table, which illustrates Policy C-III and C-IV, in order to clarify the originating conditions and the derived results. The subsections ‘Results’ and ‘Conclusion’ are combined into the section 'Possible Outcomes', as this is a theoretical instrument.

Background:

The impacts of the textile industry caused by the production, consumption and disposal of fashion, are responsible for global challenges such as climate change, social injustice and extensive pollution (cf. chapter 3.1.1). For this reason, the UN Sustainability Goals have been set to address future problems and challenges so that they can be met by adopting strategic solutions (cf. chapter 3.1.1). The United Nations Conferences on Environment and Development held in Rio de Janeiro in 1992 and on Sustainable Development held in Johannesburg in 2002 emphasised that procurement is an important instrument of product-related environmental protection. The public sector, in particular, should set an example in the implementation of sustainable consumption and production patterns (BMU, 2017).

More than 250,000 public authorities within the EU spend approximately 13.1 per cent of the EU’s Gross Domestic Product (GDP) on the purchase of services, products and equipment excluding utilities and defence (European Commission, 2016a, pp. 4-5). That means that the public sector invests around 1,500 billion € annually by public procurement (BMU, 2017). The central areas of investment are transportation, energy, waste management, social protection and the provision of education or health services (European Commission, 2017). But also textiles are procured and applied by the public sector for the purpose to fulfil public needs. These textiles can be divided into clothing (e.g. workwear), utensils (e.g. bed linen in hospitals), components (e.g. part of seating furniture) and materials (e.g. for infrastructure projects) (Dodd and Gama Caldas, 2017). The developed policy C-IV which is a learning outcome from the food industry, in particular from the investigated policy C-III that deals with public food procurement in Rome, describes exclusively the public procurement of garments in order to steer the garment production and therefore guide the market in a sustainable direction in the long run. Transferability to all textile sectors would be desirable in
order to influence the market with the highest possible demand for textile products by public authorities. Since, however, the procurement structures, product requirements and application areas of the different product groups differ considerably from each other and, in addition, even more, stakeholders would have to be involved in the design process, the transfer from C-III to the textile industry focuses on the product group garments. The effectiveness of the derived control instrument C-IV can be increased at later times by amendments e.g. the admission of other product groups into the tender criteria.

Figure 2: Workwear Market Value (VF Corporation, n.d.)

Figure 2 visualises the market value of workwear worldwide: Textile workwear thus has a total value of $24 billion (€ 21.5 billion).

Figure 3: Turnover Textile and Clothing Industry by Sector (EURATEX, n.d.)

Figure 3 visualises the turnover of the textile and clothing industry by sector for the European Union in 2016. The market for workwear is relatively low at around two per
cent, but since the market for clothing and textile products in the EU 28\textsuperscript{10} is 505 billion € in total, the market value is considered to be around 10 billion € for workwear (EURATEX, n.d.). This means that the European workwear market represents almost half of the total workwear market.

**Case:**
The dilemma that suppliers and customers on the textile market pass on the responsibility for environmental awareness and social responsibility to each other has led to a market failure in terms of supply and demand for eco-friendly and socially accepted textiles. For this reason, it is important that governments assume responsibility and act as representatives for their societies and the values they stand for. The environment is defined as a public good because everybody benefits from a better quality of the environment which implies that the state as the representative of society as a whole is responsible for the maintenance of the environment. (cf. chapter 3)

An essential premise for public procurement is that the outcome must economically meet the needs of the public sector. In practice, however, decisions are often based on short-term considerations, less on longer-term life-cycle costs and rarely on the costs incurred by society to repair environmental damage with all its consequences. (BMU, 2017)

The significant purchasing power of the public sector can be consciously used to steer the market in order to reduce negative impacts, to empower the supply of environmentally friendly and socially acceptable products and services or to specifically support the market entry of innovative products in regard to driving change towards sustainability (Hermann, Benke, and Steyrer, 2019). As mentioned before, guidelines and recommendations have been worked on at international level since 1992, and have so far had relatively little success (BMU, 2017). Since sustainability governance on a voluntarily level has had limited effect on driving change towards sustainability, a governmental control instrument in the form of a structure with regulatory character could be a suitable approach to ensure public influence on sustainable business practice in order to guarantee success.

**Purpose:**
The policy instrument to be implemented aims to steer the public procurement process towards sustainability in order to increase the share of sustainable clothing in public sector consumption and thus influence production as well as distribution. The steering instrument also aims to promote environmentally friendly and socially acceptable behaviour as well as to strive for higher product quality in terms of a longer textile lifespan to minimise the impacts caused by fashion consumption and disposal. From this, the following three objectives can be derived:

- Reduction of negative environmental influences
- Improvement of working conditions of workers in the textile industry
- Empowerment of sustainable business practices

\textsuperscript{10} Refers to the 28 member states of the European Union.
Framework:
The three main theoretical models underlying the argumentation for regulatory legislation for public procurement of textiles are listed and briefly explained below.

1. The public procurement directives which were introduced by the EU in 2014 contain important innovations regarding public procurement accordingly to Umweltbundesamt (2016) which allow adjustments in the procurement procedure:
   - Eco-labels, which are developed on a scientific basis and in an open, transparent procedure for customer orientation, may be required as verification.
   - Companies that have already violated environmental law in public obligations can be excluded for future projects.
   - In addition to the purchase price, the costs during and after the use of products as well as costs incurred by the general public as a result of environmental pollution can also be included in the award decision.

2. Green Public Procurement (GPP): The public sector purchases goods and services on a scale unattainable for private individuals and companies. It can, therefore, use the associated market power to promote environmentally friendly and socially responsible goods and services, thereby taking an important step towards sustainability (European Commission, 2016b).

3. In 1992, the European Union established the EU Eco-Label, which covers the GPP standards, including standards for textile fibres, processes and chemicals, as well as suitability for use, and therefore - according to the German Federal Ministry for Economic Cooperation and Development BMZ (2019) - the Eco-Label covers the basic environmental criteria, but lacks social criteria such as labour rights, social and cultural rights as well as social responsibility like ethical management.

Policy Design:
The transfer process of the steering instrument begins with the analysis of the policy design of Policy C-III and results in the development of Policy C-IV. The components have to be adapted to the framework conditions of the textile industry in order to be transferable. However, not all components are transferred, as the food and textile industries show differences in their structure and therefore some regulations are redundant for the clothing sector.

The tendering and awarding structure for school meals in the municipality of Rome, as well as for workwear in European municipalities, is similar, which means that public authorities advertise projects and private companies implement them after being awarded the contract (cf. chapter 4.3). The public authorities thus have a considerable influence on production conditions by being able to define tender criteria. In contrast, there is also the privatised procurement structure existent, in which private actors are contracted by the public sector to procure from private companies.

The innovative approach of involving all stakeholders in the tender restructuring process applied by policymakers of C-III can also be successful in the field of textile procurement in order to develop a feasible solution strategy together. For precisely this reason, a multi-stakeholder initiative, consisting of policymakers as legislators, industry associations, procurers, disposal representative, labour unions and
environmental NGOs, should jointly develop the approach and criteria in order to drive change towards sustainability.

In C-III, the guidelines of *GPP for Food and Catering Services* were consulted in order to adapt the tender criteria with regard to ecological aspects. The European Organic Label was required as verification to meet the criteria. If this principle is applied to the formulation of criteria for public textile procurement, the guidelines of the Green Public Procurement *GPP for Textiles* can be consulted. The strengths of GPP are seen in the facilitation of introducing standards that improve the environment, the impact on the market and the growing engagement of sustainability in politics and actions (Bauer et al., 2009). In order to meet the proposed aspects of the GPP guidelines, the tender criteria should be adapted accordingly and an appropriate certificate should be selected to substantiate them.

The EU Ecolabel is, therefore, chosen as it has been developed to facilitate the selection of suppliers and is the equivalent of the European Organic Label in the food industry. However, the EU Eco-Label exclusively includes ecological aspects and therefore social aspects should be included as additional tender criteria in order to guarantee human rights and living wages for workers in textile factories.

The methods of Policy C-III reveals that the first step in the process was the identification of the public sector's needs as well as the screening of resources available on the market in order to adapt the procurement specifications. In addition, the school canteen menus were adapted to optimise the use of existing local sources that met the requirements to steer the market in a more sustainable direction. Applied to the textile industry, this means that the public sector must first be evaluated in order to formulate the procurement criteria. In the best case, the local infrastructure is also considered here in order to increase regional value creation and at the same time to minimise the ecological footprint by reducing the travelled distances. Finally, production methods and components of the textiles should also be adapted by the suppliers to enable success.

C-III shows how the cost increase resulting from the adjustment of the tender criteria can be taken over by the legislator. The price for school meals increased overall, but the additional costs were covered by the city administration, so there was no financial impact on pupils and their parents, which led to a high level of acceptance among those affected (cf. chapter 4.3). In all probability, the costs for the public procurement of textiles will raise with increasing social and environmental standards. How the additional costs are dealt with also depends on the procurement structure, for example, whether it is centralised or decentralised. If procurement is decentralised, the increasing cost could become a considerable disadvantage for financially vulnerable regions, which should be prevented in order to increase acceptance among the procurement institutions by transferring additional costs to the highest administrative level (legislator).

As mentioned above, not all elements of policy C-III can be transferred, as the procurement of food and work clothing differs in concerned aspects. The Municipality of Rome has changed the tendering procedure in order to create transparency and equal opportunities for market participants, but this is not possible in the textile sector since the barriers to entry are relatively high in the textile sector which is noticeable in

---

11 Institutions or municipalities are responsible for the public procurement.
the limited quantity of manufacturers for specialised workwear. Another important aspect during the development of policy design C-III was the external quality assurance of the prepared meals. This component of the policy also cannot be transferred in an adapted form, since the difference to the fashion industry is that the value creation ends with the procurement of garments.

The following Table 6 illustrates the previously described components of the policy design of C-III and the derived C-IV. In addition, the bottom row of the table lists supplemental agreements that can contribute to a more sustainable public procurement structure and can be considered in the tender procedure.

Table 6: Policy Design of C-III and C-IV (author's table).

<table>
<thead>
<tr>
<th>Procurement Structure</th>
<th>Sustainable Public Food School Procurement in Rome</th>
<th>Sustainable Public Textile Procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privatised(^{12}): City administration calls for tenders, contracted companies provide the school meals.</td>
<td></td>
<td>Privatised: Public institutions call for tenders, contracted companies provide the demanded garments.</td>
</tr>
<tr>
<td>Criteria</td>
<td>Requirements for food in order to ensure ecological production practices, packaging material and animal protection standards.</td>
<td>Requirements of workwear according to the reduction of social and ecological impacts along the value chain.</td>
</tr>
<tr>
<td>Verification</td>
<td>The criteria are covered by the EU Organic Label, respectively the national organic label.</td>
<td>The criteria are covered by the EU Ecolabel.</td>
</tr>
<tr>
<td>Stakeholder</td>
<td>Involvement of all stakeholders (Production &amp; Consumption Side, City Administration [Legislator]).</td>
<td>Involvement of all stakeholders (Politics [Legislator], Production, Procurement, Disposal, Labour Unions, Environmental NGOs).</td>
</tr>
<tr>
<td>Action</td>
<td>Market research of available resources;</td>
<td>Market research of available resources and needs;</td>
</tr>
</tbody>
</table>

\(^{12}\) Privatised meaning that the public sector buys textile products from private companies.
| **Rearrangement of the procurement specifications;**  
  Adjustment of the school food menu based on the resources available and the requirements needed. | **Rearrangement of the procurement specifications;**  
  Potential adjustment of production and components as a driver for innovations based on the resources available and the requirements needed. |
|---|---|
| **Tender Procedure**  
 Redesign of the tender procedure in order to drive transparency and equal opportunities for all companies. | No adjustments needed |
| **Additional Requirements for Tender**  
 Quality Management System: ISO 9001  
 Hygiene Management Standard: HACCP Plan | Safety and Health Management System: ISO 45001  
 Standard for responsible corporate governance: SA 8000 |
| **External Quality Assurance**  
 Local food inspectors verify the quality and hygiene standards due to the fact that procured ingredients will be processed. | Not relevant |
| **Handling of Additional Costs**  
 Additional costs caused by higher requirements in the procurement process are covered by the legislator (Municipality of Rome). | Additional costs caused by higher requirements in the procurement process are covered by the procurement process are covered by the legislator. |
| **Supplemental Agreements**  
 Increased use of environmentally friendly substitutes;  
 Distribution of surplus food to institutions feeding the financially disadvantaged and to animal shelters;  
 Reduction of production waste during the entire process;  
 Reducing the food mile of ingredients to reduce the environmental impacts, when possible. | Increased use of environmentally friendly substitutes;  
 Distribution of surplus, usable clothing according to directives (prohibition of uniforming) to institutions carrying out social projects;  
 Extending the lifespan of garments through increased repairs with the help of a (regional) repair service centre to be set up;  
 Reduction of production waste |
Reducing the fashion mile of garment components to reduce environmental impacts, when possible.

Possible Outcome:
The impact of the policy is likely to affect all three levels of sustainability. As the tender criteria are adopted, the overall demand for sustainable clothing will increase, and this will result in an improvement of environmental and social standards. Furthermore, local value creation could also be encouraged through appropriate measures. From a financial point of view, it should be emphasised that the prices for work textiles procured by the public sector are rising.

The potential results are only briefly outlined here in order to be discussed with experts from the textile industry in semi-structured interviews in the next chapter. The group of experts derive possible consequences as well as advantages and disadvantages of the resulting control instrument and provide reasons for their assessments.
6 Results and Discussion

The first part of the following chapter focuses on the validation of the policy transfer outcomes by expert interviews. Therefore, the derived policy C-IV will be presented to respondents specialised in public procurement and/or in textiles. The thoughts expressed will be used to validate the outcomes of this policy in qualitative content analysis (cf. chapter 2.2).

In the second part, the findings from literature research, knowledge transfer and validation by expert interviews will be discussed in order to reply on the aforementioned research questions.

6.1 Validation with Expert Interviews

After Policy C-III has been transferred in theory to the textile sector and the resulting Policy C-IV has been comprehensively described in the previous chapter, it is necessary to validate the contents of this policy. The validation process of the results from deriving control instrument C-IV is conducted with the support of expert opinions from the textile sector. In addition to chapter 2.2.3 which shortly describes the interview procedure, the selection of the interviewees as well as the conduction of the interviews are described in the following paragraphs in detail.

6.1.1 Selection of Experts and Conducting the Interviews

When selecting the interviewees, it was not only ensured that the interview partners dealt with the framework conditions of the textile industry, sustainable development or the public procurement sector on a professional level, but also that representatives of all interest groups mentioned in the policy design were consulted. Representatives of legislation, the textile industry, public procurement, environmental and social NGOs, labour unions, disposal service providers and research were contacted in order to portray a variety of differentiated views from the affected supply chain components. With the exception of the industry as an important stakeholder (industry associations from the food or fashion industry, individual companies that produce or distribute workwear for the public sector), all relevant interest groups were persuaded to participate in the validation of the results.

The experts with whom the interviews were conducted not only have expertise in their respective fields but also gained years of experience within and with the private sector or in institutional bodies. This resulted in the fact that they were able to present their individual state of knowledge, their own relevant experiences but also their position on budgetary and business management as well as on procurement and administrative aspects of the developed C-IV model. In addition, the clarity of the policy design, its consistency and effectiveness could be tested. Furthermore, it can be highlighted that some of the selected persons have the possibility, with the help of their influence and expertise, to implement the principles of the derived steering instrument or to introduce it into the political discourse.
The following experts were involved in the validation process and coded with the parameter A-I in order to refer to the interview findings in chapter 6.2:

A. European Commission, Directorate-General for Environment, Department for Sustainable Production, Products & Consumption.

B. Ingo Strube, BMU\textsuperscript{13}: Responsible for Sustainable Nutrition and Textiles and \textit{Bündnis für nachhaltige Textilien}\textsuperscript{14}: Steering Committee.

C. Kristin Stechemesser & Brigitte Zietlow, UBA\textsuperscript{15}: Environmental Policy Officers, Responsible for environmental labelling of products and services, especially \textit{Blauer Engel} and \textit{EU-Ecolabel}, involved in the development of a guideline for sustainable public textile procurement in Germany.

D. Verena Bax, NABU\textsuperscript{16}: Environmental Policy Officer, Specialist for Sustainable Consumption and Reutilisation for Textiles.

E. Frank Zach, DGB\textsuperscript{17}: National Executive Committee - International and European Trade Union Policy Division & \textit{Bündnis für nachhaltige Textilien}: Steering Committee.

F. Rosa Grabe, Femnet e.V.\textsuperscript{18}: Project Officer Fair Public Procurement, Specialist for Public Procurement of Workwear.

G. Müccella Demir, SUBV Bremen\textsuperscript{19}: Project Lead BioStadt Bremen\textsuperscript{20}, Specialist for Public Procurement of Nutritions.

H. Nicole Kösegi, Textile Recycling Specialist on behalf of the Boer Group\textsuperscript{21} and GfZ\textsuperscript{22}.

I. Olga Chkanikova, The Swedish School of Textiles: Senior Lecturer and Specialist for sustainability governance in the food and fashion industry.

\textsuperscript{13} Bundesministerium für Umwelt, Naturschutz und nukleare Sicherheit, Federal Ministry of the Environment, Nature Conservation and Nuclear Safety of Germany.

\textsuperscript{14} Multi-stakeholder initiative with around 130 representatives from five stakeholder groups (German government, industry, non-governmental organisations, labour unions, standard organisations) founded to improve conditions within the textile industry.

\textsuperscript{15} Umweltbundesamt, German Environment Agency is operating under the jurisdiction of BMU.

\textsuperscript{16} Naturschutzbund Deutschland e.V., Nature and Biodiversity Conservation Union, Biggest environmental non-profit organisation of Germany, which is committed to the conservation of the nature at home and abroad.

\textsuperscript{17} Deutscher Gewerkschaftsbund, The German Federation of Trade Unions is the largest umbrella organisation of individual trade unions in Germany.

\textsuperscript{18} Non-profit organisation based in Bonn, Germany, which is committed to the economic, social and cultural rights of all women worldwide, with a specific focus on humane working conditions in the apparel industry that secure the existence of women and ensure social justice.

\textsuperscript{19} Senat für Umwelt, Bau und Verkehr der freien Hansestadt Bremen, Senate for Environment, Construction and Transport of the Free Hanseatic City of Bremen.

\textsuperscript{20} The BioStadt Bremen project is a programme of activities that broadly resembles Policy C-III and aims to strengthen the consumption of ecologically, regionally and fairly produced food with many different actions.

\textsuperscript{21} International all-round textile recycling company based in Dordrecht, Netherlands, whose core activity is the high-quality assortment of clothing and all other textile-related products.

\textsuperscript{22} Gemeinschaft für textile Zukunft GbR, Association of recycling service providers who want to promote the framework conditions for the sustainable use of textiles and the associated high-quality collection, sorting and recycling of used textiles.
Interview Structure and Conduction:
The interviews were conducted in calendar week 19 - 21 by telephone, via Skype and in person. The process of the expert survey was divided into three sections:

1. A handout (cf. appendix A), which was sent to the interview partners in advance and briefly compared Policy C-III and the derived Policy C-IV, was discussed together. The experts were then given the opportunity to ask substantive questions.

2. The interviewees were asked in a semi-structured interview whether the Policy C-IV is implementable and what its strengths, weaknesses, opportunities and challenges are. Furthermore, it was asked which administrative level should implement the policy in order to be successful.

3. Finally, a discussion was conducted, in which comments and suggestions for improvements were documented

The interviews were recorded with the consent of the participants, then transcribed and analysed according to their content.

6.1.2 Interview Analysis
The results from the content analysis were divided into the following categories in order to arrange the statements of the participating experts according to positive and negative conclusions and to present them clearly.

This was done by following subcategories:

1. Applicability
2. SWOT Parameter
   a. Strengths of C- IV
   b. Weaknesses of C- IV
   c. Opportunities by implementing C- IV
   d. Threats by implementing C- IV
3. Obligation Character
4. Administrative Level
5. Additional comments

6.1.3 Findings
In order to validate the derived Policy C-IV and its impact on the textile industry, the results of the categories described above are given. In order to avoid the reader's bias, no names are mentioned in order to keep anonymity.

Applicability:
Experts agree that policy C-IV can be implemented to create a public procurement framework that allows the textile industry to adapt its standards accordingly.

SWOT parameter:
Strengths:
One strength cited by all interviewees is the direct adoption by the public sector of responsibility for environmental and social standards, which implies that these standards can be fully defined and subsequently adopted. In addition, the authorities act as role models and prioritise criteria for sustainable production over price, which could trigger a public debate and subsequently motivate consumers to imitate this behaviour. As a consequence, the demand for sustainable textiles by public
procurement bodies is increasing, which would result in a much higher order volume for this segment and significantly increase its market share in the long term. Another strength of the derived control instrument C-IV that has been mentioned is the feasibility of the policy, as there are already mandatory provisions for the procurement of other product categories that are demonstrating success. A further important aspect which was mentioned is the improvement of the legal framework conditions for procurers who no longer have to make procurement decisions primarily on the basis of pricing. Furthermore, market regulation leads to legal security and certainty for manufacturers if a guaranteed demand for sustainable workwear is created for them. The experts also emphasised the fact that workwear is already highly regulated and the existing requirements simplify the resulting audit process for adapted standards. The experiences of the interviewees in many different areas demonstrate that obligations are more effective than voluntary initiatives or the use of formulated optional criteria in tendering procedures, which speaks in favour of the regulatory character of C-IV. A consistently positive aspect that is perceived is that all stakeholders should be involved in the process in order to jointly develop effective solutions and resolve conflicts as soon as they arise. Furthermore, it was mentioned that the desire of the population (in Germany) for increased social and environmental standards in textile production is present and thus a trend reversal can be initiated politically. Furthermore, it was observed that the acceptance of interventions in the textile industry is considerably higher than that of interventions in the food sector, in which a variety of regulations have already been implemented.

Weaknesses:
The respondents agreed that the price structures of workwear for the public sector might change due to increased requirements in textile production: It is to be expected that prices will rise in any case in the short to medium term. The interviewees summarised that a significant weakness of the control instrument C-IV is that the EU Ecolabel does not cover social standards and that these are therefore not sufficiently represented in the tender criteria. It was also noted that the additional management system SA8000, which should complement the EU Ecolabel in terms of social standards, is not satisfactory to cover ILO core social standards. Furthermore, the interview partners criticised that the EU Ecolabel is irrelevant for textile value chains, as there are hardly any suppliers certified according to this standard. Overall, the issue of labels and certificates has been summarised by the fact that there is no harmonised standard for textile products that address both environmental and societal aspects, meaning that it is infeasible to include only one label in order to incorporate social and ecological criteria. Furthermore, it was pointed out that considerable lead time is needed for policy design and implementation due to the complexity of the textile supply chains due to their advanced globalisation. This complexity will require adjustments, which can also be accomplished under more challenging conditions. According to some experts, special operation clothing (e.g. for military) cannot be included in the tender criteria because the safety of the users has the highest priority here. This means that not all workwear products can be included under the same standard. Furthermore, it was noted that individual procurement structures of public bodies were privatised and thus there is hardly any possibility to influence the procurement process of all public institutions. Beyond that, the implementation can

---

23 Describes the core labour standards defined by the International Labour Organisation.
result in a competitive disadvantage of SMEs, since these cannot spend the same financial means for certifications as big companies.

**Opportunities:**
The experts agree that the most promising opportunity to implement the control instrument is to change the existing market by guaranteeing demand for sustainably produced textiles. The increased volume of orders for sustainable workwear creates a legal framework for producers, which could lead to an increase in certified companies on the market, as companies have the prospect that their investments will be profitable. Some interviewees also believe that this increase in certified producers will have an effect on the whole textile sector (production of fibres and components such as yarn), as the workwear segment is specified but not completely decoupled from the textile market. It is also argued that the exemplary nature of the public sector and the effect of an increased supply of sustainable textiles will have a direct influence on the purchasing behaviour of the rest of society. In addition, some respondents believe that there will be a long-term price adjustment due to economies of scale, which will change the previous price dynamics towards higher costs. Another opportunity described by experts is to promote regional value creation, which also leads to the reduction of external environmental costs in the long run. Furthermore, one expert argued that adjusting the procurement criteria for workwear could lead to freeing the market from unethical and uneconomical acting producers, who have no right to pollute the environment and exploit people.

**Threats:**
One of the most difficult challenges to solve is the definition of an appropriate standard (in the form of certificates, labels or combinations of both), the experts agree in their evaluation. An additional note here is the different interpretation of the concept of sustainability by the various actors involved, which must be summarised. Another often held opinion is that the procurement structure is complicated and heterogeneous in its design and that the responsibilities for procurement are not always clearly formulated. The challenge is to simplify the structure and make it more efficient because capacity bottlenecks (personnel, know-how, etc.) in procurement processes could occur as a result of adapted requirements. Therefore the increase of the personnel capacities and the training of existing personnel are inevitable according to the increased tender criteria. A further challenge could be that in the first years of the conversion only a limited number of manufacturers (certifying and reorganising processes needs time) on the market operates accordingly to the new standards and thereby a shortage and an increase in the price of the products could accompany, some of the respondents concluded. The challenging question of which price markup can be accepted for the public procurement of textiles in order to meet social and ecological standards and at the same time have the ambition to use taxes wisely must also be solved. Furthermore, the point of view that political and economic shifts could result in changes to which manufacturers and consumers can only react slowly were expressed. The complexity of the textile supply chains due to the advanced globalisation of these makes implementation and control more difficult. An appropriate solution would have to be developed to ensure transparency and simplify the quality assurance process.

In order to ensure a better overview of the weaknesses and strengths as well as the opportunities and challenges, the interview results are visualised in a SWOT matrix:
### Table 7: SWOT-Matrix (author’s table)

#### Strengths:
- Effective, due to its mandatory character
- Implementable → theory is transferable to practice
- Responsibility is assumed
- Increasing demand for sustainable garments
- Legal security for manufacturers
- Increasing sense of responsibility
- Direct influence on ecological and social standards
- Legal framework conditions for procurers simplify the decision making
- Role model character
- Willingness of the population for adjustments exists
- Acceptance of interventions is higher than in the food industry
- Large order volume → high market share
- All stakeholders are involved
- Existing regulations for workwear simplify the review process for adjusted standards

#### Weaknesses:
- Product prices increase
- Time expenditure for the procurement process increase
- EU Ecolabel irrelevant for textile products
- EU Ecolabel not sufficient, especially for social standards
- SA8000 not sufficient for social standards
- Sufficient standard is non-existent → several labels are necessary at the moment
- It takes time until implementation due to complexity
- Changes after implementation are time & labour-consuming
- Effects are limited due to partial privatisation (e.g. hospitals)
- Special operation clothing is excluded → Safety has top priority
- Complex supply chain of products complicates the control
- SMEs do not have the financial resources for certifications

#### Opportunities:
- Modifications in the textile market due to changed demand can be accelerated
- Effects on the entire textile market can be achieved through adjustments
- The number of certifications through legal security for suppliers can increase.
- Market adjustment of non-social and non-ecologically operating market participants can be accomplished
- The purchasing behaviour of the society can be influenced
- Regional value creation can be promoted
- Prices may fall in the long term due to economies of scale
- External environmental costs can be reduced

#### Threats:
- An appropriate standard (ecological & social) must be defined.
- Various definitions of the concept of sustainability
- Appropriate cost surcharge must be determined
- The procurement structure is complicated and differs considerably in some cases
- Responsibilities are partially unclear
- Political changes during initialisation, development and implementation
- Difficult control due to complex and globalised supply chains
- Limited number of manufacturers → it might take some time until enough of them change their business practices.
- Capacity shortages can occur (personnel, know-how)
Obligation Character:
The interviewees agree that the control instrument C-IV should be compulsory for public procurement bodies in order to successfully regulate the market. However, the obligation should be preceded by a voluntary initiative to demonstrate the need for an agreement. The experiences from other voluntary commitments for industry and administration show that these are not very successful. Furthermore, it has been suggested by some experts that success can only be achieved with the assistance of possible sanctions for non-compliance.

Administrative Level:
The most stated view is that the national level (for Germany) appears to be the most appropriate level for implementation, as legislation allows direct influence and the volumes of workwear in demand have a high impact on the market. However, it is also noted that the procurement structure is partially very complex and implementations towards the highest administrative level are the most complicated. Therefore, the belief is also expressed that implementation at the local level is most likely to be realised, as procurement structures and criteria can be directly and continuously influenced. The opinion to establish the Policy C-IV on a European scale is also expressed by the interview partners, as a strong statement would be sent from Europe regarding labour rights and environmental standards thus significantly increasing the demand for sustainable public textiles. However, it should be noted that on the European level, no legislation can be made mandatory regarding the public procurement of textiles. In its trade policy, the EU could adopt import conditions for the textile sector and incorporate environmental and social standards to a higher degree. However, this would be another also very interesting control instrument, the result of which cannot be considered in this paper.

Additional Comments:
In a concluding discussion, the interviewees made additional suggestions which could increase the efficiency and effectiveness of the derived Policy C-IV. The suggestions for improvement dealt with adjustments and structural changes as well as with experiences from already successfully implemented steering instruments. The most important additions are listed in the next subchapter 'Discussion' where it contributes to the outcomes when the derivation of the steering instrument C-IV is explained. It should be added that during the informative discussions it was pointed out that a guideline for the procurement of sustainable textiles is currently being developed in Germany. Various stakeholders such as the BMZ24, the BMU representing UBA and other important interest groups are working on the guideline. At the same time, the metalseal25 grüner Knopf26 will be developed, which will be presented to the public in summer and covers social as well as ecological aspects.

The content analysis of the results from the expert interviews reflects the different opinions on Policy C-IV and is used to validate the findings from chapter 5. In the following discussion section, the interviewees’ perceptions are used as supporting arguments to answer the research question and its correspondent sub-questions.

24 Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, Federal Ministry of Economic Cooperation and Development of Germany.
25 An umbrella label that combines different labels / certificates with different requirements.
26 Metaseal which combines the criteria of other certificates and seals to act as an additional label covering environmental and social criteria. Developed by the Alliance for Sustainable Textiles under the guidance of BMZ.
6.2 Discussion of Results

The following section includes the discussion of the previously set

Main RQ: How can a transferred Governmental Control Instrument from the food industry regulate the textile industry to drive change towards sustainability?

In order to do so, addressing the sub-questions will support the argumentation of results.

A. To what extent can the food industry be a role model for the fashion industry with regards to sustainability?

This thesis addresses the food industry as a role model for the implementation of policy instruments in the fashion sector. In order to do so, firstly the extent of comparability of those two industries is reviewed. Because the GCI is aimed towards the improvement of the sustainability of the fashion industry, the TPL dimensions are observed in a macro-perspective in order to compare the environmental, social and economic impacts both industries have on the global market. The comparison in chapter 3.1 shows that both product groups are innovative with regards to the delivery of new products, where the supply chain has to react quickly. Furthermore, the variety of items is quite high. For both product groups, the supply chain is globalised and complex, sourcing different components worldwide. Thus, the main difference is the use-phase. Whereas food and beverages are consumed in one or few uses, clothing is worn many times before its end of the product life cycle that leads to a different frequency of need, which is daily for the food sector and non-essential for daily life in the fashion sector.

With regards to sustainability, both sectors have an enormous impact on the environment, society and economy. Hereby, as furtherly discussed in chapter 3.1.1. the impacts of the food industry are the highest among other producing industries and the effects of the fashion industry somewhat lower. This might also be, due to the difference in consumption. For both of the industries, the main impacts caused by the European market are not only measurable in Europe, but especially in the production countries, and is therefore difficult to address. Another consequence of the complex supply chain are negative social impacts. Both industries employ workers around the globe and therefore a risk of responsibility levy exists. While the European food industry imports 1.2 as many food and beverage products as it exports, the ratio of the fashion industry is 11.2 as many imports as exports, which leads to the impression, that social impacts are non-comparable because most of the employees in fashion supply chains are working outside of Europe and therefore outside of the scope for action. Nevertheless, the interviews in chapter 6.1 indicate, that experts see differences also in the acceptance of change for sustainability.

Moreover, the spendings per households for food amounts to 15.4 per cent of the income while it is more than half of this amount in the fashion industry. Therefore, the main difference is, that the economic impact for the fashion industry is affecting also the outer-European market significantly. Whereby in food a discussion for change would mean a change in lifestyle when it comes to substitution products, the acceptance to substitute fabrics that have similar properties as unsustainable fabrics is higher. Interviewee F and I furthermore reinforce the possible differences in the social impacts the food and fashion industry have with regards to certification schemes and sustainability.

In conclusion and responding the first sub-question it is to say, that there are differences in the food and fashion industry which have to be considered, such as the end-of-lifetime and the economic impact. Thus, the sectors are very similar, especially with regard to environmental and social sustainability. During the interviews, the comparability is rated as very high addressing the product similarities and the ecological sustainability. Therefore, it can be
summarised, that the food industry is suitable to serve as a role model for the fashion industry especially regarding consumer behaviour and the environmental impact. However, the food industry has its own challenges regarding sustainability and cannot be judged as a role model in general. But learning outcomes can be transferred in order to drive change towards sustainability.

After the contemplation of the comparability of the food and fashion industry, the impacts that GCI have in the food industry are considered in sub-question 2.

**B. Which impact do successfully implemented Governmental Control Instruments in the food industry have on business practices regarding sustainability?**

The food industry is evaluated to be a suitable role model in order to transfer its learning outcomes onto the fashion industry. The following step regards these learning outcomes when directing the impact, successfully integrated GCI show within the presented cases of chapter 4.

In general, GCIs are implemented by the state in order to steer the distribution of resources or social behaviour directly or indirectly (cf. chapter 3.2). Disadvantages might be seen in the extended level of bureaucracy and capacity usage. Due to this, the necessity of the implementation has to be considered carefully. Furthermore, one has to consider, that standards and regulations come along with a restricted market and therefore innovation processes, which means that the acceptance of consumer, producer and institutions has to be balanced in order to justify the societal added value. The main advantages can be seen in defining minimum standards that enhance the quality of the market opportunities for all active market participants. GCIs can lead not only to achieve objectives but also take the responsibility for the achievement off the customers or industries but guide them along the way. Further, it was stated by the experts, that regulatory policies might lead to inequality for SMEs due to higher costs of implementation, which small to medium-sized companies can hardly afford (cf. chapter 6.1.3).

For the cases in chapter 4, the authors observed three different GCIs: the Deposit System for Drinking Packages in Germany (C-I), the Public Health Product Tax in Hungary (C-II) and the Sustainable Public School Food Procurement and the Adoption of Organic Food in the Municipality of Rome (C-III). All of the presented cases show positive results with regards to the sustainable development on different levels. In the following, the results of these cases will be summarised briefly:

C-I shows, that although the goal of increasing the use of reusable drinking packages was not reached, the phenomenon of returning single-use drinking containers was created by introducing a take-back-system resulting in less littering. Due to the regulations, the number of drinking packages from the same origin and therefore the collected recycling material increased and helped the sustainable development of the packaging industry. Throughout the interviews, experts mentioned the possibilities of transferring a similar system and referred to a model introduced in France that supports the recycling of textiles and uses the earmarked deposit income for the research and development for new textile recycling techniques (Interview C).

In C-II, the authors observe a tax regulation aimed at reducing the consumption of unhealthy food. Salt and sugar content are taxed in drinks and snacks, which has the consequence that the prices of these foods are increased. Industry and consumers have reacted to this instrument, resulting in fewer products containing sugar and salt offered on the market and, consequently, less consume of these products also due to substitution decisions. The generated earmarked tax revenue is dedicated to the health care system in Hungary.
Additional remarks in the interviews showed, that here a transfer could be conceivable by reducing taxes for sustainably produced textiles (Interview C).

Finally, C-III demonstrates the introduction of Sustainable School Food Procurement in public schools in Rome, where the steering takes place in the procurement of public goods in order to exploit the role model function and the market power of public institutions. In Italy, this measure not only leads to increased usage of regional and organic ingredients in school meals but also promotes local agriculture.

In order to answer the second sub-question, the results of the case studies show, that in the food industry GCIs are able to steer the market addressing the customer behaviour with regards to disposal (C-I) and buying behaviour (C-II), the industry by changing production habits (C-II, C-III) as well as facilitating the conditions for the recycling industry (C-I) and lastly, the public sector by introducing new requirements for public procurement (C-III). The results indicate that success at every stage of the supply chain can be achieved through the introduction of control instruments. Furthermore, it could change the behaviour of every stakeholder involved - consumer, industry and public institutions. Therefore, the levels of improvement range from the public sector until the customer and can be seen as successfully implemented GCIs.

In order to proceed with the analysis of the main research question, a suitable GCI is selected by discussing its applicability onto the practical surrounding. For this reason, a best-case policy is selected with the help of an evaluation scheme.

**C. Which existing GCI is able to create a suitable framework for the Textile Industry and how can it be derived?**

The evaluation in chapter 5.1 showed that all three guidelines have an impact on sustainability. Nevertheless, the assessment has shown that C-III provides the best possible results due to its high scores for the evaluation criteria efficiency, effectiveness, impact, relevance, sustainability, policy consistency and transferability.

The efficiency was ranked medium due to the continuous monitoring efforts and change in the tender procedure. In comparison, C-II was classified equally due to the high labour intensiveness in implementation which is also seen in C-I, ranked as low in efficiency due to time and labour consumption and the continuous monitoring. The effectiveness is categorised high for C-III since it reached a coherent change in the habits of the involved and C-I and C-II shows incoherence when it comes to the outcome. Both C-II and C-III are able to meet their objectives and are therefore ranked as high, while C-I could not change the buying behaviour as intended. With regards to the relevance, all three policies are classified high due to the pioneering role in environmental steering (C-I), triggering of the debate (C-II) and the change of habits (C-III). As the steering of the sustainability is intended for the fashion industry within this research, this was categorised high for C-I, where the circular economy was facilitated and enhanced and C-III since it is able to drive change for suppliers, that reduce their risk of certification. The policy consistency as mentioned beforehand and remains high for C-III. In the case of C-I, there are many exceptions made for the packaging of other products. Both C-II and C-I show high potential for transfer. For C-II the possibility would be to levy a tax on environmentally unfriendly materials or to reduce the VAT on sustainable products. The public procurement exists in both, the food and the fashion sector and functions as a role model. Therefore, the Public Food Procurement (C-III) was chosen for further research.

Moreover, all three levels of sustainability accordingly to TBL are addressed in C-III. Environmental sustainability is addressed by restricting public procurement towards
environmentally friendly products. The society benefits from regional and organic food, and the local economy is supported by the policy instrument.

The transferred GCI, like the example from Rome, is based on the GPP Directive provided by the European Commission and defines possible measures for the implementation of such an instrument. The interviewees affirm, that all GCIs could work in the fashion industry to steer sustainable practices. The final result is, that C-III is transferred onto the fashion industry in C-IV and is furtherly discussed with experts from practice throughout the interviews.

In a following step, the derived policy C-IV is developed in order to answer the research question by means of secondary data and validation of the expert interviews.

**Main RQ: How can a transferred Governmental Control Instrument (GCI) from the food industry regulate the textile industry to drive change towards sustainability?**

The following key statements could be formulated while answering the sub-research questions:

A. The food and fashion industry are comparable with regards to sustainability and can, therefore, be seen as a role model to transfer learning outcomes regarding sustainability for the textile industry.

B. Successfully implemented GCIs in the food industry have an impact on consumer behaviour, industry structures and public institutions.

C. Sustainable public procurement is able to create a suitable framework for the textile industry in order to drive change towards sustainability.

The effect of the transferred, compulsory GCI is evaluated by experts who are representatives of legislation, public procurement, environmental/social NGOs, labour unions, disposal service providers as well as of research within the fields of public procurement and textiles which are therefore very relevant sources to validate the policy C-IV. The interview partners’ opinions are analysed and clustered in a SWOT matrix in order to visualise the strengths, weaknesses, opportunities and threats.

Throughout the interviews in chapter 6.1, the most powerful strength is seen in the direct steering of the market due to the market power and role model function of the public procurement sector. With the adjustment of the tender criteria for public procurement of textiles with a focus on sustainability, a guaranteed market is created due to the regulated demand for workwear which is subject to ecological and social requirements. This provides companies with the certainty that their investments in production with higher social and environmental standards will be profitable in the long term. This will probably lead to more textile producers being certified according to the chosen standard in order to meet the required criteria so that they can apply for the tendered projects and will probably lead to higher environmental and social standards in the medium-term, resulting in a lower environmental footprint and better working conditions for workers and finally to a more sustainable behavioural society. In contrast, the investment could be too high for SMEs and disadvantage smaller players if the certification processes are not subsidised. The adaption, as well as the certifications, might lead to increasing prices of workwear for the public sector for the moment. However, in the long term, these prices could possibly stabilise at the current price level due to economies of scale resulting from an increase in demand.

Another positive outcome is seen by the experts within the responsibility assumption by the government to steer its municipalities towards the control of their supply chain. This monitoring is suggested to conduct with certifications such as the EU-Ecolabel, the ISO-Standard 45001 and the standard for responsible corporate governance SA 8000. These
standards were seen as not sufficient by the experts, and many added, that in existing discussions about a voluntary sustainable public procurement the main threat is to define an appropriate standard that includes all the necessary requirements for sustainable production. In particular, the absence of social standards in the EU Ecolabel was mentioned as a missing standard requirement. In order to face this challenge, BMZ is developing the meta-certificate Grüner Knopf that should help within the process of certification and facilitate the certification scheme for all stakeholders. Furthermore, guidelines are changed with regards to sustainability but experts see that voluntary policies lead to incoherent implementations due to the lack of training and resources.

The complexity of the supply and procurement structure leads to difficulties in the implementation of such a policy and enlarge the process of the implementation, due to the number of involved parties. Especially for workwear, safety measures have to be considered and need to be included in the standards of the procurement policy.

With regards to the TBL framework, the environmental and social aspects would have to be included in the standards or the certifications that the policy is based on in order to ensure sustainability. Therefore, a number of certification schemes would be needed. As for the economic sustainability following change is expected: If external environmental costs such as carbon dioxide emissions were also considered in the tender criteria for public textile procurement, a competitive advantage could be created for local economies, resulting in an increase in local value creation in the long term. The economic benefit is not necessarily transferable since the European textile industry is currently hardly competitive. It has to be remembered, however, that the European textile industry has in the past migrated to other countries with lower environmental standards and labour costs due to regulations on ecological and social standards and is therefore only able to compete in niche markets with the international textile industry, especially the Asian one.

As to answer the main research question, the public institutions with changed purchasing behaviour are acting as role models and thus influencing the market. This could lead to a larger supply of sustainable textiles as there are more companies with certified production on the market and trigger a development spiral towards sustainable production. A transferred GCI from the food industry could regulate the textile industry to drive change towards sustainability if the according standard would be available and the resources to monitor these changes and for educating staff are available. The fact, that the German institutions are already working on guidelines for the public procurement enforce that finding and give a platform for the change onto a compulsory policy.
7 Conclusion and Outlook

The main intention of this research was to find out whether…

... Existing Govermental Controlling Instruments are able to create a suitable framework for the Textile Industry to drive change towards sustainability.

Therefore, the presented thesis verifies the comparability of the food industry and the fashion industry with regards to sustainability.

7.1 Limitations

The limitations that arise in this research are primarily caused by the research design: Since there are not only similarities between the examined food and fashion industry. In particular, the consumption phase differs between single-use products in the food industry and reusable products in the fashion sector which was therefore taken into account when selecting the different GCIs.

Furthermore, the origin of the authors and the associated know-how about existing institutions and organisations in the field of governance with regard to sustainability led to the fact that most of the interview partners come from the EU member state Germany. Not only the origin of the interviewees but also their background with regard to their values and objectives influence the perceptions of the derived policy. More critical voices from business and politics, especially from financial and economic affairs, are not represented, which is caused by the cooperativeness of the requested interviewees. In addition, the presented thesis focused on the perspective of governance tools with looking at potential to drive needed change in the textile industry towards sustainability. This research was conducted within the framework of textile management and therefore deals with the possible effects of the derived policy on business and consumption in order to drive sustainable change and is therefore not concentrating on juridical frameworks and legislation.

Due to the scope of this thesis, these limitations are reasonable and could provide a basis for future research in the field of sustainability enhancing policies.

7.2 Outlook

Relying on valuable sources and the conducted expert validation, it was concluded, that the industries show relevant parallels. Furthermore, it was shown, that GCIs have an influence on customer and industry behaviour with regards to the sustainability of a market. In that context, C-III as a control instrument for sustainable public procurement was examined in order to find out the steering competence for that tool regarding the ability to drive change towards sustainable business practices in the fashion industry. It was deducted that previous approaches of the European Commission were within a voluntary guideline for sustainable public procurement, which allows public procurers to select the suppliers not only by price competence but also by fulfilling certain sustainability factors. Therefore, this thesis builds the basis for further research addressing the implementability on the whole European single market and its member states, which includes study fields such as:

- How can a sustainability standard for textiles that includes social and ecological aspects look like?
- To what extent and in which fields can safety workwear (e.g. protective clothing) meet defined sustainability standards?
• How can additional textile products that are procured publicly be included in the adjusted tender criteria?
• What possibilities does the EU have as an institution to make the textile industry more sustainable?

This thesis contributes to both, research within the field of sustainable textile development and governance with the aim of increasing or implementing sustainability. The approach to transfer a policy instrument from the food sector onto the fashion industry could contribute to the elaboration of new policies for the textile industry, using especially the food industry as a role model. The master's thesis with its findings, in particular, the derived Policy C-IV, could contribute to a discussion on the need to adjust employment criteria to social and environmental aspects. The success of this derived policy might be tested in a practical surrounding or researched in a qualitative approach that enables measurability. Possible outcomes could be that municipalities or public institutions take more responsibility and commit themselves to sustainable procurement criteria.

7.3 Result

Finally, it can be summarised, that the implementation of a compulsory policy instrument includes many factors that are not involved within the scope of this work. Thus the evaluation and validation of the results imply, that the textile industry would benefit from stronger regulations in the procurement in order to drive change towards sustainability. In the following some lessons learned are presented:

• Increased government intervention in the market is necessary in order to achieve the UN Sustainability Goals.
• The high environmental impacts of the food industry make it a role model for the fashion industries when it comes to initiatives and policies.
• GCIs are able to steer customer and industry behaviour with regards to sustainability.
• In order to reach sustainability either a policy mix or policies that cover all three dimensions according to the TBL framework are needed.
• For the steering and monitoring process of sustainable procurement, the elaboration of a feasible standard is necessary.
• Due to the complexity of procurement structures, the implementation process needs time.
• Compulsory directives influence the market better than voluntary agreements.

Furthermore, it was indicated by procurement experts throughout the process of this thesis, that a guideline for sustainable public textile procurement is being elaborated by the BMZ for Germany (cf. chapter 6.1.3). This could have the potential to become a mandatory tool and change the market towards sustainability. Therefore, this work might give an insight into different stakeholder perspectives, especially regarding compulsory implementation and the level of administration.

Since the textile industry is lacking the drive of change towards sustainability especially when it comes to a sustainable behaviour along the supply chain, a suitable Governmental Control Instrument could steer both, the industry, as well as the consumer towards a responsible behaviour and therefore, could be seen as a suitable framework for a more sustainable textile industry.
Bibliography


VII


BMZ. (2019) Siegelklarheit [Internet]. Available at: https://www.siegelklarheit.de/home [Accessed 22nd May 2019].


Dunkelmann, P. (2004) *Steuerungsinstrumente* [Internet]. Available at: https://user.phil-fak.uni-duesseldorf.de/~bandelow/02mkas.pdf [Accessed 11th April 2019].


Oxford Dictionaries | English. (2019) *ecological footprint* | *Definition of ecological footprint in English by Oxford Dictionaries* [Internet]. Available at: https://en.oxforddictionaries.com/definition/ecological_footprint [Accessed 22nd May 2019].


WRAP. (2012) *Valuing our clothes*. UK, WRAP.

Appendix – Handout for Interview Partners
Transferred Control Instrument to the Clothing Industry:
Public Green Textile Procurement

In the following, you can find a table that illustrates the different components of a successfully implemented policy in the municipality of Rome in the year 2001 in order to provide school children with a higher food quality leading to an increase of organic ingredients in school meals from 10 to 70 per cent in 2007. Furthermore, this control instrument results in higher engagement in organic farming due to the increased demand for local and organic products by the public sector.

<table>
<thead>
<tr>
<th>Sustainable Public Food School Procurement in Rome</th>
<th>Sustainable Public Textile Procurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectives</strong></td>
<td>Increase the proportion of organically produced regional ingredients for school food.</td>
</tr>
<tr>
<td><strong>Target Group</strong></td>
<td>Pupils and school personnel in public schools in Rome.</td>
</tr>
<tr>
<td><strong>Procurement Structure</strong></td>
<td>Privatised: City administration calls for tenders, contracted companies provide the school meals.</td>
</tr>
<tr>
<td><strong>Theoretical Framework</strong></td>
<td>Green Public Procurement GPP for Food and Catering Services.</td>
</tr>
<tr>
<td><strong>Criteria</strong></td>
<td>Requirements for food in order to ensure ecological production practices, packaging material and animal protection standards.</td>
</tr>
<tr>
<td><strong>Verification</strong></td>
<td>The criteria are covered by the EU organic label, respectively the national organic label.</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Involvement of all stakeholders (Production &amp; Consumption Side, City Administration [Legislator]).</td>
</tr>
<tr>
<td><strong>Action</strong></td>
<td>Market research of available resources; Rearrangement of the procurement specifications; Adjustment of the school food menu based on the resources available and the requirements needed.</td>
</tr>
</tbody>
</table>

Swedish School of Textiles, Borås

David Dreker & Jacqueline Lampey
**Tender Procedure**

- Redesign of the tender procedure in order to drive transparency and equal opportunities for all companies.
- Due to the needs and the tender of public authorities, the procedure will not be changed. As the barriers to market entry in the fashion industry are higher than in the food industry and there is a limited number of suppliers especially for workwear in the market.

**Additional requirements for tender**

- Quality Management System: ISO 9001
- Hygiene Management Standard: HACCP Plan
- Safety and Health Management System: ISO 45001
- Standard for responsible corporate governance: SA 8000

**External Quality Assurance**

- Local food inspectors verify the quality and hygiene standards due to the fact that procured ingredients will be processed.
- The value creation process ends with the procurement, due to this, there are no additional quality assurance mechanisms needed.

**Handling of additional costs**

- Additional costs caused by higher requirements in the procurement process are covered by the legislator (Municipality of Rome).
- Additional costs caused by higher requirements in the procurement process are covered by the legislator.

**Supplemental agreements**

- Increased use of environmentally friendly substitutes;
- Distribution of surplus food to institutions feeding the financially disadvantaged and to animal shelters;
- Reduction of production waste during the entire process;
- Reducing the food mile of ingredients to reduce the environmental impacts, when possible.

- Increased use of environmentally friendly substitutes;
- Distribution of surplus, usable clothing according to directives (prohibition of uniforming) to institutions carrying out social projects;
- Extending the lifespan of garments through increased repairs with the help of a (regional) repair service centre to be set up;
- Reduction of production waste during the entire process;
- Reducing the fashion mile of garment components to reduce environmental impacts, when possible.

---

1. Which strengths and weaknesses occur in your opinion for the transferred control instrument?
2. Which opportunities and challenges do you see for the implementation process?
3. Do you think that it is possible to implement the control instrument in order to drive change towards a more sustainable textile industry? If so, in which level do you think it is conceivable (local, regional, national, european)?
4. Do you have further complements or suggestions for improvement with regards to the practicability and design of the policy?
Übertragenes Steuerungsinstrument auf die Bekleidungsindustrie:
Nachhaltige öffentliche Beschaffung


<table>
<thead>
<tr>
<th>Nachhaltige Öffentliche Beschaffung in Rom</th>
<th>Übertragenes Steuerungsinstrument für die Bekleidungsindustrie</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Zielgruppe</strong></td>
<td>Schüler und Lehrpersonal in öffentlichen Schulen Roms.</td>
</tr>
<tr>
<td><strong>Herangehensweise</strong></td>
<td>Einbeziehung aller Interessenvertreter (Produzenten, Konsumenten, Stadtverwaltung als Gesetzgeber).</td>
</tr>
<tr>
<td><strong>Vorbereitungen</strong></td>
<td>Marktanalyse von vorhandenen Ressourcen; Anpassung der Beschaffungsanforderungen;</td>
</tr>
<tr>
<td>Policy Instruments and their Impact on Business Practice in the Fashion Industry towards Sustainability - Learning Outcomes from the Food Industry</td>
<td></td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td><strong>Anpassung des schulischen Speiseplans auf der Grundlage der vorhandenen Ressourcen und Anforderungen.</strong></td>
<td><strong>Potenzielle Anpassung von Produktion und Bestandteilen als Treiber für Innovationen auf der Grundlage der vorhandenen Ressourcen und Anforderungen.</strong></td>
</tr>
<tr>
<td><strong>Ausschreibungsverfahren</strong></td>
<td><strong>Ausschreibungsverfahren</strong></td>
</tr>
<tr>
<td><strong>Zusätzliche Ausschreibungs- voraussetzungen</strong></td>
<td><strong>Zusätzliche Ausschreibungs- voraussetzungen</strong></td>
</tr>
<tr>
<td><strong>Externe Qualitäts- sicherung</strong></td>
<td><strong>Externe Qualitäts- sicherung</strong></td>
</tr>
<tr>
<td>Regionale Lebensmittelkontrolleure überprüfen die Qualitäts- und Hygienestandards, da die beschafften Lebensmittel weiterverarbeitet werden.</td>
<td>Der Wertschöpfungsprozess endet mit der Beschaffung, daher ist keine zusätzliche Qualitätssicherung nötig.</td>
</tr>
<tr>
<td><strong>Handhabung zusätzlicher Kosten</strong></td>
<td><strong>Handhabung zusätzlicher Kosten</strong></td>
</tr>
<tr>
<td>Zusätzliche Kosten, die aufgrund steigender Anforderungen im Beschaffungsprozess entstehen, werden vom Gesetzgeber übernommen (Stadtgemeinde Rom).</td>
<td>Zusätzliche Kosten, die aufgrund steigender Anforderungen im Beschaffungsprozess entstehen, werden vom Gesetzgeber übernommen.</td>
</tr>
<tr>
<td><strong>Zusätzliche Vereinbarungen, die mit den Vertragsparteien beschlossen wurden</strong></td>
<td><strong>Zusätzliche Vereinbarungen, die mit den Vertragsparteien beschlossen wurden</strong></td>
</tr>
</tbody>
</table>

1. Welche Vor- und Nachteile gibt es ihrer Meinung nach für das abgeleitete Steuerungsinstrument?  
2. Welche Chancen und Herausforderungen sehen Sie bei der Umsetzung?  
3. Glauben Sie, dass sich das Steuerungsinstrument erfolgreich implementieren lässt, um den Markt für Textilien langfristig nachhaltiger zu gestalten? Wenn ja, auf welcher Verwaltungsebene wäre dies denkbar (lokal, regional, national, europäisch)?  
4. Haben Sie Ergänzungen oder Verbesserungsvorschläge in Bezug auf Umsetzbarkeit und Design des Steuerungsinstruments?