Sustainability language in operation of different built environment settings

perceptions, actions and motivations

Anahita Rashidfarokhi
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Anahita Rashidfarokhi

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Abstract

Due to the significant contribution of the built environment to all the sustainability dimensions, it has become a potential sector for achieving sustainable development. To facilitate sustainability integration, a growing number of approaches have been developed. However, ambiguity and conflict in proposed approaches have raised concerns among academics and practitioners. Therefore, further research on the function of scientific sustainability frameworks and methodologies in the practice of the built environment sector is of value.

The overall aim of this dissertation was to increase knowledge on the manifestation of sustainability in the operation of the built environment sector. To achieve this, first the sustainability literature in the context of the built environment was reviewed to identify the existing approaches. Second, the perceptions and actions of two main actors (public and private) in the built environment sector were analysed using the existing or self-created frameworks. Third, the motivations that drive the actors' perceptions and actions were discussed. To address the research aim, a number of qualitative methods were combined. The empirical research involves three case studies in Finland, as well as literature review, content and discourse analysis of the secondary data.

The findings show a large variety of approaches and frameworks to address sustainability. In addition, results reveal that perceptions and actions of private and public actors regarding sustainability are different. Moreover, legal requirements and financial incentives found to be the main motivations for the actors. Based on the findings, this dissertation argues that private and public actors should be treated and evaluated differently. Developing context-specific approaches would better fit the context and increase comparability. In addition, this dissertation suggests that integrating social sustainability into processes could legitimise the trade-off in the process that is caused by inherent conflicts between different actors and between the sustainability dimensions. Furthermore, the present dissertation claims that sustainability is nascent and evolves along with society; therefore, the focus should be on processes in which the change is stimulated.

The academic value of this research is in the understanding it has developed on the complex relationship between the built environment system and sustainability, which is essential for achieving progress in theory and practice. Moreover, this research helps academics to understand how and why diverse actors perceive sustainability differently. This can improve the effectiveness and legitimacy of built environment sustainability strategies in practice. The empirical findings bring new evidence to the stakeholders and help them in obtaining a holistic understanding of sustainability and addressing the shortcomings identified in this research. This can in the longer term advance the integration of sustainability in the built environment.

Keywords built environment, real estate, sustainability, social sustainability, planning policies, planning processes, corporate social responsibility

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List of Publications

This doctoral dissertation consists of a summary and of the following publications that are referred to in the text by their numerals.


Author’s Contribution

Publication 1: Looking at retail location guidance through a sustainability lens: Evidence from public discourse in Finland.

The author of this dissertation is jointly responsible for the research design together with the co-author Laura Yrjänä. The author is fully responsible for the theoretical background (section 2), fully responsible for developing the sustainability framework for categorising the data and writing the respective sections. Yrjänä is responsible for the idea of the study, fully responsible for developing the framework for discourse analysis, fully responsible for the collection and analysis of the discourse data, and is fully responsible for writing the discourse analysis results and has the main responsibility of assessment of the feasibility of the study. The author of this dissertation is jointly responsible for categorising the discourse data under the developed sustainability framework with the co-author Yrjänä. The author had the joint responsibility for theoretical framing and the writing of the remaining sections of the paper together with Yrjänä. Saija Toivonen and Kauko Viitanen provided steering, academic writing guidance, their expertise and suggestions during the writing and editing processes.

Publication 2: Sustainability reporting in the Nordic real estate companies: Empirical evidence from Finland.

The author of this dissertation is fully responsible for the idea of the study, fully responsible for the research design and theoretical framing, fully responsible for data collection, data analysis and interpretations, and fully responsible for writing and editing processes. Saija Toivonen and Kauko Viitanen provided their comments and suggestions during the writing and editing processes.

Publication 3: Social sustainability tool for assessing land use planning processes.

The author of this dissertation is fully responsible for the idea of the study, fully responsible for the research design and theoretical framing and fully responsible for developing the assessment tool, fully responsible for collection and analysis of legislation and mainly responsible for the writing process. Co-author, Laura Yrjänä had a joint responsibility in re-framing the theoretical background and writing of section 2, and in editing the manuscript and the structure of the developed tool. Yrjänä is also mainly responsible for assessing the feasibility of the study. Marjo Wallenius is mainly responsible for providing and analysing the master-planning process data. Saija Toivonen, Kauko Viitanen and Ari Ekroos provided their expertise, feedback and suggestions during the writing and editing processes.
1. Introduction

1.1 Background and motivation of the research

Sustainability can be defined as a holistic approach that meets the needs of the present without compromising the ability of future generations to meet their own needs (World Commission on Environment and Development, 1987). Sustainability is often described as consisting of three overlapping, mutually dependent dimensions: environmental, social and economic (Elkington, 1997).

The built environment is a major sector that significantly contributes to all three dimensions of sustainability. The built environment is closely connected to the environmental dimension through land use change, energy and natural resources consumption, greenhouse gas emissions, waste production and impacts on biological diversity (Forsberg & von Malmberg, 2004). In addition, the built environment relates to the social dimension associated with the supply and design of domestic spaces, social equality, employment, human health and quality of life (Brandon et al., 2017; Hoesli & Gibb, 2003). Moreover, private and national wealth is bound to the built environment, and this sector has a major role in economic growth and supporting the national economy (ARUP, 2016; EPRA, 2016).

Due to the significant contribution to all the sustainability dimensions, the built environment sector has also become one of the sectors with the most potential in global efforts for achieving sustainable development goals (IPCC, 2014; Puppim De Oliveira et al., 2013). Therefore, demands for integrating sustainable innovations into the practice of the built environment have been raised (Toivonen, 2011; Toivonen & Viitanen, 2015, 2016; Yildiz & Ozerim, 2014).

Demands have appeared in different forms, for instance through legal requirements (i.e. tighter policies), institutional obligations, financial incentives and social and customer pressure. To meet these demands, decisions and strategies that facilitate the integration of sustainability should be made at all levels of the built environment sector (Monno & Conte, 2015).

However, ambiguity and conflict in defining sustainability and its elements in the scientific community have caused significant challenges in integrating sustainability into the built environment in practice (Pearce & Vanegas, 2002). As a response to these challenges, a growing number of sustainability approaches have been developed to explore the impacts and generate quantitative and qualitative information for analysing and structuring decision spaces (De Smedt, 2010; Sala et al., 2015). Inherent in these many approaches is a broad diversity of definitions, scopes and indicators (Pearce, 1999).

This variety in approaches has raised clear concerns among academics, market actors and policymakers on possibilities to adequately distinguish and evaluate the sustainability impacts of the sector in a solid and reliable manner (Sala et al., 2015; Wilkinson et al., 2015).
Such concerns are usually linked to the confusion caused by ambiguity and the contested nature of the sustainability concept as well as to the capability of capturing multidimensional impacts and their interconnections with robust and fit-for-purpose indicators (Böhringer & Jochem, 2007).

To address these concerns, further research on the function of scientific sustainability approaches in practice of the built environment sector is required. The previous literature found that significant sustainability improvements could be achieved if stakeholders understand, agree and commit to the approaches and indicators offered by the scientific community (see, for example, Bal et al., 2013; Brandon & Lombardi, 2010; Lombardi & Cooper, 2007; Lombardi et al., 2009).

Therefore, by studying the actors’ perceptions and preferences of sustainability in practice, challenges and barriers within the existing sustainability approaches can be identified, and attempts to improve them could be directed towards those areas. In the long term, this can contribute to transforming scientific sustainability approaches from a simple tool for measuring progress to a process that enhances overall understanding of sustainability, facilitates actors’ capacity building and guides sustainability policy developments in the future (Reed et al., 2006).

1.2 Research aim, questions and the scope

The overall aim of this dissertation is to increase knowledge on the manifestation of sustainability in the operation of the built environment sector. To provide a holistic picture, first the relevant literature that has addressed the concept of sustainability in the context of the built environment is reviewed. Such a review helps to identify the methodologies and frameworks that are proposed for promoting sustainability in the built environment sector. Second, the perceptions and actions of the actors operating in the built environment are analysed by applying and developing scientific sustainability methodologies and frameworks. Third, the motivations and forces that shape the actors’ perceptions and drive their actions towards sustainability are identified and discussed. Two main actors are studied in this dissertation: public (public authorities and politicians) and private (companies and citizens).

This dissertation studies the function of scientific sustainability approaches at the practical level of the built environment with a critical eye, without under-mining the concept of sustainability itself. Instead, the goal is to understand how and why sustainability is integrated into an operating built environment, considering the complexity, multidimensionality and diversity of scientific approaches to sustainability. The research only focuses on sustainability science in the built environment context.

Furthermore, to achieve an objective view, actors were not directly involved in the research process and were not asked to provide their viewpoints concerning sustainability in their operations. Instead, their perceptions and actions concerning sustainability was analysed by the author of this dissertation, using public sources. The dissertation studies cases that actors approach sustainability in their operations deliberately or by compulsion and explores whether those mandatory guidelines have promoted sustainability integration in practice or have increased greenwashing. However, due to the interrelationship between the built environment and sustainability, this research also includes cases that actors take a position towards sustainability and its impacts in different operating fields without being aware of it.
As sustainability is still an immature and scattered field and the related concepts are not yet fully stabilised, this dissertation contributes to this field by conducting three empirical studies in Finland that address the three research questions of this dissertation.

All the empirical studies are based on public sources in order to achieve an unbiased picture of the manifestation of sustainability in the operation of the built environment sector. In the first empirical study, perceptions and actions of the public and private actors regarding sustainability in the public policy discourse were viewed through a sustainability lens. Public discourse has been chosen because it provides a space that involves all the actors and everyone has an opportunity to voice their opinions. For the second empirical study, sustainability reporting at the corporate level was selected, as it provides information on perceptions and actions of private actors regarding sustainability. In the third empirical research, land use planning processes were studied to achieve a better picture on the public actors’ perceptions and actions regarding sustainability. In this research, legal frameworks that guide land use planning processes and reports on implemented processes were assessed.

The three research questions for this dissertation are formulated as follows:

1. **How is the concept of sustainability approached in the literature on the built environment?**

   The first research question presents a review and analysis of the literature to determine the current state of research into the development of indicators and frameworks for sustainability, sustainable development and specifically the assessment of sustainability in the built environment. This question focuses on the built environment on a general level; but as a basis for addressing the aim of the dissertation, it also includes the development of tools and frameworks for relevant subsets and categories of the built environment sector. These frameworks and tools will be used for analysis in the second and third research questions of this dissertation.

   In the first paper, the extant literature is reviewed to understand the linkages between sustainable development and retail planning policies. By analysing the content of the related literature, sustainability indicators are identified. However, the literature review shows a lack of a framework that incorporates a complete and specific set of sustainability indicators in the context of retail planning. Therefore, the identified indicators serve as a base for developing a holistic sustainability framework for retail planning that was missing from the field.

   In the second paper, this question is approached by reviewing the relevant literature to identify the existing sustainability reporting frameworks developed for the real estate sector. Based on the findings from the literature review, a coding system is developed to simultaneously capture both the quantity and quality of information provided in the sustainability reports.

   In the third paper, a literature review revealed that social sustainability has usually received the least attention in the previous planning studies that have aimed to support actors in finding sustainable solutions. Therefore, in this paper, social sustainability is studied in further detail in the context of the planning processes. Through a robust research process covering a large amount of scientific literature and built environment sustainability assessment tools, a social sustainability tool is developed. By developing a tool, we can clarify what social sustainability means and how it can be achieved in the practice of land use planning processes.
2. How can the perceptions and actions of the different built environment actors be translated into sustainability language?

From the ambiguity and conflict in defining sustainability and its elements emerges different interpretations, such as “...various stakeholders and institutions configure a fairly malleable idea to fit their own agendas (Allenby et al., 2009)”. The previous literature suggests that this leads to a large variability between the different perceptions and actions that actors have regarding sustainability in the operating field of the built environment sector. To achieve a deeper understanding of this subject, the second research question views the perceptions and actions of the private and public actors through a sustainability lens. To address this question, the existing and developed sustainability frameworks derived from Question 1 are applied to real-world cases. The results from the case studies are then compared and contrasted with the existing literature.

The first paper of this dissertation investigates the public and private actors’ perceptions and actions regarding sustainability in the context of retail planning policy. To achieve this, the policy discourse of the actors are critically analysed and categorised under sustainability elements by using the self-created sustainability framework for retail planning.

The second paper assesses the private actor’s perceptions and actions regarding sustainability at the corporate level. This paper analyses the quality and quantity of sustainability information provided by real estate companies in their sustainability reports. The content of the reports is analysed by using a coding system that combines sets of existing frameworks.

The third paper aims to discover the perceptions and actions of the public actors concerning social sustainability in processes connected to the built environment. This paper assesses the master planning process of a medium-sized city in Finland and the legal framework guiding it. The self-created social sustainability tool is used as a coding system to reveal how social sustainability themes are perceived and approached by public actors in the case study.

3. What are the driving factors behind the built environment actors’ orientation towards sustainability?

The third research question explores the motivations and forces that drive or affect actors’ perceptions and actions towards embracing sustainability in the different operating fields of the built environment sector. The contribution of this question is in identifying what best influences or drives each group of actors to engage in sustainability practices and the risks and benefits of those factors. This provides a realistic picture for the institutions and governments on the effectiveness of their policies and programs to enforce sustainability.

The first paper studies the motivations and forces that shape the public and private actors’ perceptions and actions towards changes in retail planning policy and its impacts from a sustainability point of view.

The second paper investigates the motivations and forces that drive the private sector to engage in issuing sustainability reports at the corporate level.

The third paper assesses the motivations and forces that drive the public sector to address social sustainability in planning processes.
1.3 Research Methodology

Scholars and methodologists have been engaged in a long-term discussion about the best practices in conducting research. Amaratunga et al. (2002) distinguish between two main research paradigms: logical positivism and the phenomenological interpretive approach. Logical positivism employs quantitative and experimental methods on large samples, aiming to formulate and test hypotheses. The phenomenological interpretive approach deals with qualitative methods to inductively and holistically understand and explain a phenomenon. The basic belief of this paradigm is that the world is socially constructed and subjective (Keller, 2005).

In the phenomenological interpretive approach, neither predefined variables nor pre-set hypotheses exist. Instead, this approach aims to contribute to the knowledge of the social context of a phenomenon or a process by which that phenomenon or process affects or is affected by that social context (Walsham, 1995). Researchers who choose the phenomenological interpretive approach attempt to generate hypotheses through induction from data achieved in small samples that are investigated deeply or over time by applying multiple methods (Amaratunga et al., 2002; Easterby-Smith, 1991; Remenyi et al., 1998; Silverman, 1998).

Understanding the methodological paradigms is necessary in order to recognize which methods are appropriate for conducting research. However, the choice of the methodological paradigm depends on the research aim, research questions, and the resources available (Then, 1996). The aim of this dissertation is achieved through induction from data, therefore it can be concluded that the research is interpretative in nature.

Besides the mentioned approaches, there are several different ways of describing research approaches and logics. Each particular type of research logic addresses a particular research problem (Creswell, 2009). In general, research logics can be divided into three different kinds of reasoning: deductive, inductive and abductive approaches. In the deductive approach, the researcher tests or verifies a theory by studying questions or hypotheses that result from it. The inductive approach is the other way around: a researcher develops a model or theory based on the gathered data (Creswell, 2009; Punch, 2005). The abductive approach is a mixture of deductive and inductive approaches, allowing the research to go back and forth between the theory and the gathered empirical data (Tuomi & Sarajärvi, 2009).

Although the nature of the research is abductive, this dissertation is more inclined to inductive reasoning, which moves from the specific to general. First, some existing theoretical knowledge on sustainability concepts and approaches in the context of the built environment is gained. Second, empirical data are collected from case studies, content and discourse analysis. Third, conclusions are derived in light of results accumulated from comparing existing theories with empirical evidence.

The discussion of research approaches and logic is usually linked with a discussion of two dominant research methods: quantitative and qualitative. The dissertation’s methods are mainly qualitative. Van Maanen (1979) has defined qualitative research as “an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the real world”. Creswell (2014) has explained the process of qualitative research as follows: “involves emerging questions and procedures, collecting data in the participants’ setting, analysing the data inductively, building from particulars to general
themes, and making interpretations of the meaning of the data. The final written report has a flexible writing structure”.

To understand better the nature of qualitative research, Merriam (2014) has referred to four main characteristics: 1) the overall purpose of the qualitative research is to understand and explain the process of phenomenon (rather than the outcome), 2) the researcher is considered as the means of collecting and analysing data, 3) the process of qualitative research is inductive, and 4) the findings of qualitative research are comprehensive, holistic and usually presented in a richly descriptive manner. The design of qualitative research is flexible, and the size of the sample is small, non-random, purposeful and theoretical. Data is collected during interviews, observations and documents. Qualitative research can be conducted in several ways, such as ethnography, field methods, qualitative inquiry, participant observations, case study, naturalistic methods and responsive evaluation (Smith, 1992).

Yin (1994) has suggested that the choice of research approach should be a function of the research situation. He further explains that the type of research questions, a degree of actual control over the behavioural elements, and the chronology of events determine the choice of research methods. The research papers in this dissertation, the selected methods and the data used in each paper are explained below and outlined in Table 1. The combination and mixing of different research methods provided an enormous potential for the robustness of this research.

In the first paper, a literature review, content and critical discourse analysis were employed to identify and categorise the sustainability concerns raised in retail planning policy discourse presented in the Finnish media, mainly in newspaper articles between 1990 and 2015. A critical discourse analysis was employed, as it focuses on understanding the causes, conditions and consequences of pressing social issues, as well as how these issues are framed and understood (McKenna, 2011; Van Dijk, 1993). The data for discourse analysis was mainly collected from newspaper articles. Newspaper articles are a significant source for researching policy discourse, as media has the power to influence knowledge, beliefs, values, social relations and social identities (Fairclough, 1995). To categorise the concerns identified through discourse analysis, a holistic sustainability framework was developed based on a comprehensive review and content analysis of the extant retail literature. The reason for choosing content analysis was that it allows gaining direct information from the literature without imposing preconceived categories. This feature was an advantage for this paper, as the authors wanted to include all the impacts that were identified in the literature.

In the second paper, the literature review was conducted to identify the existing sustainability reporting frameworks for the real estate sector. Based on the findings from the literature review, a coding system was developed by combining existing frameworks. The coding system was used for content analysis of sustainability reports issued by listed real estate companies for the year 2013-14 in Finland. The coding system designed for content analysis in this paper consisted of two tasks: quantitative and qualitative analyses of information. The review of the previous studies investigated sustainability reports in the real estate sector shows that content analysis has precedence in the real estate related research (for example Chen et al., 2016; Glass, 2012; Willetts et al., 2011; Zuo et al., 2012). Krippendorff (2004) has defined content analysis as a research technique for making a replicable and valid inference from texts to the context of their use. Since this research aims to make inferences about the real estate corporate sustainability reporting practices based on public documents, content analysis was considered as a suitable approach to achieve the aim of this paper.
The third paper employed a literature review and content analysis for developing a social sustainability tool for assessing land use planning processes. To develop the tool, the qualitative content analysis was applied to illustrate the range of social sustainability definitions, identify the relevant themes or categories, and bring descriptions for identified themes. Once the tool was developed, it was used in a case study in Finland to assess how social sustainability is approached in a master planning process and the legal framework guiding it. Using a case study helps to analyse how the public actor perceives and acts to achieve social sustainability in the practice of land use planning processes.

### Table 1. Research papers, methods, and data

<table>
<thead>
<tr>
<th>Research paper</th>
<th>Research question</th>
<th>Research method</th>
<th>Sample/Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper 1: Looking at retail planning policy through a sustainability lens: Evidence from policy discourse in Finland</td>
<td>1, 2, 3</td>
<td>- Literature review</td>
<td>- Scientific journal papers - Finnish daily newspaper archives</td>
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<td></td>
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<td>- Content analysis</td>
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<td></td>
<td></td>
<td>- Critical discourse analysis</td>
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</tr>
<tr>
<td>Paper 2: Sustainability reporting in the Nordic real estate companies: Empirical evidence from Finland</td>
<td>1, 2, 3</td>
<td>- Literature review</td>
<td>- Sustainability reporting frameworks</td>
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<tr>
<td></td>
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<td>- Content analysis</td>
<td>- Real estate companies active in commercial real estate development in Finland</td>
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<td>- Corporate Sustainability reports and web pages</td>
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<tr>
<td>Paper 3: Social sustainability tool for assessing land use planning processes</td>
<td>1, 2, 3</td>
<td>- Literature review</td>
<td>- Scientific journal papers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Qualitative content analysis</td>
<td>- Land Use and Building Act and Decree of Finland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Case study</td>
<td>- The master planning process of the city of Lappeenranta, Finland</td>
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### 1.4 Structure of the dissertation

This doctoral dissertation consists of three published research papers and a summary. Each of the three papers addresses all the research questions of this dissertation. All the papers are peer-reviewed and published in international scientific journals.

Paper 1 studied the sustainability concerns linked to retail planning policies raised by private actors (citizens and companies) and public actors (public authorities and politicians) based on the policy discourse communicated in the most read daily newspaper in Finland. The discourse analysis revealed the most highlighted or missing sustainability impacts raised by the public and private actors and the possible reasons behind it in the context of built environment policies in Finland.

Paper 2 investigated the strengths and challenges around sustainability reporting issued by private actors (listed real estate companies), using literature studies and content analysis of the corporate reports. This study showed what elements receive the most attention and what elements are neglected by the real estate companies. In addition, potential motivations and forces driving private actors to engage in sustainability reporting are discussed.

In Paper 3, a social sustainability tool was developed for assessing social sustainability in land use planning processes. The focus of this paper was on the perception and position of the public actors (public authorities and politicians) concerning social sustainability. The assessment tool was applied to a case study from Finland to identify the social sustainability strengths and weaknesses of a master planning process and the legal framework driving it. In
addition, this paper discusses the possible motivations that drive public actors’ approach to social sustainability.

This summary consists of three sections. The first section introduces the research field, the research aim and the research questions. In addition, this section presents the research methodology and structure of the dissertation. Section 2 summarises the three papers included in the dissertation and provides the main conclusions of the individual papers. Section 3 provides answers to the research questions and discusses the contribution of the dissertation. Evaluation and relevance of the research and its methodology are also presented in this section. In addition, suggestions for further research are proposed.
2. Summaries of the research papers

This chapter briefly summarises the three research papers for this dissertation. Each summary includes the objective, methodology, findings and contribution of the respective paper to this dissertation. The research papers are also appended to the dissertation.

2.1 Paper 1: Looking at retail planning policy through a sustainability lens: Evidence from policy discourse in Finland

The first paper of this dissertation explores how the concept of sustainability is approached in retail planning policies and studies the private and public actors’ perceptions and actions concerning sustainability as well as the driving forces behind them. In this paper, the sustainability impacts linked to a built environment regulation (retail planning policy) in Finland were assessed based on a public discourse in newspaper articles between the years 1990 and 2015. Various actors were involved in the policy discourse, including politicians, public authorities, retailers and consumers, who have diverse and often contradictory perceptions about the sustainability of retail planning policies.

The literature review showed that the extant studies on retail planning and policies have mainly focused on specific sustainability problematics in their research. However, in order to capture the complexity of integrating sustainability to retail planning policies, a holistic framework is required to show the interconnections and overlaps between different sustainability dimensions.

To develop such a framework, content analysis was conducted over the existing literature to identify the sustainability impacts linked to environmental, social and economic sustainability. Through content analysis, 45 sustainability impacts related to retail planning were identified. Then the identified impacts were assessed in order to combine the elements with similar content, which reduced the number of elements from 45 to 18 under three dimensions of sustainability. The framework consists of all the impacts that were identified in the literature without giving weight based on the number of times each impact was mentioned. The layout of the framework is presented in Table 2.
Table 2. The sustainability framework for retail planning policy (Yrjänä et al., 2018).

<table>
<thead>
<tr>
<th>General sustainability groups</th>
<th>Sustainability impacts</th>
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<tbody>
<tr>
<td>Economic</td>
<td>- Profitability</td>
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<td>- Economic regeneration</td>
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<td>- Town centre vitality</td>
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<td>- Employment</td>
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<td>- Economic viability</td>
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<td></td>
<td>- Competition</td>
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<tr>
<td>Environmental</td>
<td>- Mode of transport</td>
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<td>- Accessibility</td>
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<td>- Urban sprawl</td>
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<td>- Mix of use</td>
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<td>- GHG emissions</td>
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<td>- Urban freight</td>
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<tr>
<td>Social</td>
<td>- Social inclusion</td>
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<td>- Quality of life</td>
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<td></td>
<td>- Safety</td>
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<tr>
<td></td>
<td>- Sense of community</td>
</tr>
<tr>
<td></td>
<td>- Equity</td>
</tr>
<tr>
<td></td>
<td>- Local employment</td>
</tr>
</tbody>
</table>

The developed framework was used to categorise the concerns identified through policy discourse analysis. When the framework was employed to categorise the discourse, the frequency of the concerns mentioned in the policy debate was considered in order to see what impacts were prioritised by each group of actors. As the policy discourse was analysed chronologically, such an approach provided a picture of the evolution of different perceptions related to sustainability in two eras: the 1990s and the 2000s (see tables 3 and 4).

Table 3. Sustainability impacts in policy discourse in the 1990s (Yrjänä et al., 2018).

<table>
<thead>
<tr>
<th>Concerns identified from the discourse</th>
<th>Sustainability impacts</th>
<th>Sustainability dimension</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>-The death of small stores</td>
<td>Town centre vitality</td>
<td>Economic</td>
<td>38%</td>
</tr>
<tr>
<td>-The viability of small town centres</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Competition between municipalities</td>
<td>Competition</td>
<td>Economic</td>
<td></td>
</tr>
<tr>
<td>-Power of grocery retailers in the market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Increased car dependency</td>
<td>Mode of transport</td>
<td>Environmental</td>
<td>27%</td>
</tr>
<tr>
<td>-Accessibility by public transport</td>
<td>Accessibility</td>
<td>Environmental</td>
<td></td>
</tr>
<tr>
<td>-Increased trip length</td>
<td>Urban sprawl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-The loss of local services, especially for the elderly</td>
<td>Social inclusion</td>
<td>Social</td>
<td>35%</td>
</tr>
<tr>
<td>-The vitality of the neighbourhood</td>
<td>Quality of life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Spatial equity of retail services</td>
<td>Equity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-The loss of local jobs</td>
<td>Local employment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 3, during the 1990s, socio-economic impacts had the major share of the discourse (73% in total). The main concerns of the public actors were related to the vitality of the neighbourhoods, competition and employment opportunities. The private actors were mainly concerned about profitability and employment in local stores, quality of life and equity, especially for the elderly.

In the 2000s, as Table 4 shows, focus of the policy discourse turned to environmental and economic impacts (77% in total). Urban sprawl and GHG emissions were the main concerns of the public actors (especially politicians). However, after the Global Financial Crisis in 2007-2008 and tightening of the retail planning policy in 2011, both public authorities and
private actors heavily discussed the economic impacts of the proposed policy, due to its negative impact on competition and consumer prices.

Table 4. Sustainability concerns in policy discourse in the 2000s (Yrjänä et al., 2018).

<table>
<thead>
<tr>
<th>Concerns identified from the discourse</th>
<th>Sustainability impacts</th>
<th>Sustainability dimension</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The viability of town centres</td>
<td>Town centre vitality</td>
<td>Economic</td>
<td>37%</td>
</tr>
<tr>
<td>- Competition between municipalities</td>
<td>Competition</td>
<td>Economic</td>
<td></td>
</tr>
<tr>
<td>- Legal barriers to entering the market</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Increased traffic if only accessible by car</td>
<td>Mode of transport</td>
<td>Environmental</td>
<td>40%</td>
</tr>
<tr>
<td>- The fragmented retail structure that causes traffic</td>
<td>Urban sprawl</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Urban decentralisation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Accessibility by public transport</td>
<td>Accessibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Effect of increased traffic to climate change</td>
<td>GHG emissions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The loss of local services, especially for the elderly</td>
<td>Social inclusion</td>
<td>Social</td>
<td>23%</td>
</tr>
<tr>
<td>- Neighbourhood degeneration</td>
<td>Quality of life</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Studying the discourse shows how sustainability issues were formulated and communicated between the public and private actors. The findings of Paper 1 show that environmental and social sustainability were mainly used by public actors to push or oppose changes in retail planning policies. Politicians (as public actors) took a very active role in the discourse and were the main drivers of the change in retail planning policies. This is most likely because politicians usually have an agenda of getting re-elected, and they want to get their voices heard and their policy agendas through.

On the other hand, private actors and retailers in particular were mainly concerned about the economic impacts of the changes in retail planning policies and questioned whether the public actors (politicians and public authorities) had forgotten that retailing is a business that needs to be profitable.

According to the research findings, it can be concluded that sustainable development regulations introduce changes to retail planning, but similarly, new retail planning regulations cause new impacts on sustainable development.

Applying the sustainability framework for categorising the actors’ concerns found in the policy discourse showed the difficulty of dividing them among three sustainability dimensions due to their interconnections and overlaps. These attributes can also cause opportunities and challenges in practice, in a way that addressing certain impacts under one sustainability dimension could cause positive or negative impacts (intentionally or unintentionally) on the other dimensions of sustainability. Therefore, it makes it challenging for public actors to achieve a win-win solution that also satisfies private actors.

It is believed that the main challenge is rooted in the contested concept of sustainability that seeks a balance between economic, environmental and social dimensions, despite the inherent conflicts and imbalance between them. To overcome this challenge, Campbell (2016) suggests that practitioners should consider a viable compromise between sustainable and unsustainable practices, instead of seeking an elusive balance between all sustainability dimensions.

However, this paper argues that in order to achieve such a working compromise, both public and private actors need to understand holistically the sustainability impacts of retail plan-
ning and consider the interconnections and conflicts between impacts when existing regulations are modified or new regulations are formulated.

The contribution of Paper 1 to this dissertation lies in revealing how and why the perceptions and actions of private and public actors regarding sustainability vary in the context of retail planning. However, as sustainability is a context-specific concept, to support the findings of Paper 1, further empirical research on private and public actors' perception, actions and motivations regarding sustainability in other contexts would be of value. Therefore, the second paper of this dissertation focuses on private actors in the context of sustainability reporting at the corporate level, and the third paper looks at the public actors in the context of land use planning processes.
2.2 Paper 2: Sustainability reporting in the Nordic real estate companies – Empirical evidence from Finland

The second paper focuses on sustainability reporting at the real estate corporate level. In this paper, the practice of sustainability reporting is investigated in order to understand how private actors on the corporate level perceive sustainability, what actions they take to integrate it, and what motivations are driving them to engage in sustainability reporting.

Sustainability reporting is assumed to significantly enhance the integration of sustainability into core business processes (Wensen et al., 2011). Although sustainability reporting is a voluntary practice, an increasing number of real estate companies are issuing sustainability reports, most likely due to the emergence of the tightened sustainability policies in Europe. Despite the rise in sustainability reporting, the literature review conducted in this paper shows that real estate companies are faced with a lack of a common global approach to standardise their sustainability reports. Among the voluntary standard frameworks, the Global Reporting Initiative (GRI) – Construction and Real Estate Sector Supplement (CRESS), is the most commonly used framework by the real estate sector worldwide.

The study includes the Finnish listed real estate companies active in the commercial sector. In total, 34 documents related to the sustainability of the sample companies for the year 2013–2014 were collected. Content analysis was applied to assess the quality and quantity of the information in the collected documents.

The content analysis consisted of two phases. In the first phase, the quantity of sustainability information was analysed using a coding system based on the GRI G4 CRESS index. The purpose of the first phase was to investigate the quantitative distribution of the information under three themes of economic, environmental and social responsibility. The findings of this phase show a relatively consistent distribution of the information among the three themes, as seen in Figure 1. This could be due to the structure of the indices that all the companies used for issuing their sustainability reports. Considering the codes, economic performance (under economic responsibility), energy (under environmental responsibility), and labour practice and decent work (under social responsibility) were the most mentioned codes identified in this phase.

Figure 1. Quantitative distribution of sustainability codes under each theme (Rashidfarokhi et al., 2018a).
The second phase examined the quality of information, based on three information types derived from Vuontisjärvi (2006), including: 1) Sustainability aims and values, 2) Sustainability measures and practices, and 3) Qualitative and quantitative sustainability performance data. Analysing the quality of information gave a realistic picture of the companies’ approaches to sustainability.

The findings from the second phase reveal that most of the companies provided information that would fall under type 2 (measures and practices). On the other hand, information type 3 (the performance data) related to environmental and social themes was missing from the majority of the documents. Figures 2 and 3 present the detailed description of the types of information related to economic, environmental and social responsibility themes.

![Figure 2. The distribution of sustainability information under defined information types (Rashidfarokhi et al., 2018a).](image)

![Figure 3. Percentage of information types provided for each theme (Rashidfarokhi et al., 2018a).](image)
In addition to the lack of information on environmental and social performance, results indicate diversity in approaches to sustainability reporting, the lack of external assurance, and a systematic approach in the context of materiality in corporate sustainability reporting processes. Addressing these challenges could provide companies with benefits, including business (reputational capital), social (stakeholder engagement), and accountability. However, providing reports that meet all the requirements of the GRI or similar sustainability reporting frameworks could be rather infeasible, especially for small to mid-size companies, as it causes complexity, extra time and resource consumption in the process.

The paper suggests that real estate companies either reported only the information that they had already gathered for internal purposes or reported mostly on the issues that they had the best performance. According to the results, two forces drive companies to engage in sustainability reporting processes on a voluntary basis: the emergence of tougher sustainability policies and institutional guidelines, as well as financial impacts that could negatively or positively affect their business.
### 2.3 Paper 3: Social sustainability tool for assessing the land use planning processes

Paper 3 looks at the public actors’ perceptions, actions and motivations regarding social sustainability in the context of land use planning processes. A review of the literature in the context of land use planning shows that among the three dimensions of sustainability, social dimensions usually receives the least attention. However, addressing social sustainability is a legal requirement for the public actors. Public actors have the most power in decision-making processes connected the living environments. In addition, they have the responsibility to support and consider the interests and concerns of those actors who lack knowledge and expertize in this context.

The previous literature suggests that integrating social sustainability themes could help public actors to build consensus and resolve conflicts among stakeholders involved in the decision-making process in order to legitimise the outcomes. On the other hand, the integration of social sustainability is not a straightforward task and can even introduce negative impacts to the process. One reason is that social sustainability features are sometimes intangible and harder to understand and assess than economic and environmental impacts.

Gradually, an increasing number of studies have attempted to approach social sustainability in the planning context. The literature review shows that social sustainability is mainly viewed as community participation, and technological approaches have been developed to implement it in practice. However, planners have failed to utilise these approaches to increase social sustainability in practice, due to the lack of skills and institutional motivations. It seems that a collective understanding of social sustainability is missing, and there is a clear need for conceptualizing social sustainability in the context of planning processes.

Therefore, in Paper 3, a social sustainability tool was developed to clarify what social sustainability means and how it can be integrated into practice. By providing social sustainability themes and exemplary measures, the developed tool can also help public actors build a consensus, mitigate conflicts and increase the legitimacy of the end results. Public actors need legitimacy for their actions in order to gain continuity, credibility and the support of private actors. To develop the social sustainability tool, we followed four stages, as shown in Figure 4.

![Figure 4. Outline of the strategy for developing the social sustainability tool (Rashidfarokhi et al., 2018 b).](image)

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documents were collected &amp; reviewed. 120 elements were found.</td>
<td>Content of elements analysed, those with similar content combined. 45 elements remained.</td>
<td>Irrelevant elements to the context of the paper removed. 26 elements remained.</td>
<td>Final 26 elements were categorised into six general themes.</td>
</tr>
</tbody>
</table>

For developing the tool, the content of a large number of scientific papers and international built-environment sustainability assessment tools was analysed, through which 120 social sustainability elements were found. To determine the relevant themes in the context of the
paper, identified elements went through several cycles of combination and elimination, which reduced the number of elements to 26. The remaining elements were categorised under six general themes based on their interconnections and overlaps, including equity, social inclusion, social cohesion, social capital, community participation and safety. Table 5 describes each theme in detail and provides practical examples for integrating them in practice. The examples provided should be seen as a base for developing further initiatives in practice.

Table 5. Social sustainability tool for planning processes (Rashidfarokhi et al., 2018b).

<table>
<thead>
<tr>
<th>Theme</th>
<th>Definitions</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>Equal opportunity to participate and access the resources, services and information for everyone in the planning process.</td>
<td>- communicating information through versatile channels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- using maps, tables, and infographics in delivering planning information.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- providing support services to facilitate inter-generational, disadvantaged and minority groups’ participation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- foreseeing targeted activities for the empowerment of women and gender minorities in a planning process.</td>
</tr>
<tr>
<td>Social inclusion</td>
<td>A planning process that includes all the diverse parties and incorporates their knowledge and concerns.</td>
<td>- direct invitation of various generation, ethnic and income groups’ representatives.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- providing planning information and resources in multiple, accessible formats and languages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- systematic collection of the local knowledge and concerns of different parties into a database.</td>
</tr>
<tr>
<td>Social cohesion</td>
<td>The consideration of the degree and pattern of interaction between and within parties involved in a planning process.</td>
<td>- promoting the idea of shared responsibility between public and private parties involved in the process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- active reintegration of vulnerable interest groups.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- awareness and integration of local culture and knowledge to achieve mutual understanding and trust.</td>
</tr>
<tr>
<td>Social capital</td>
<td>Understanding and promoting networks in a society imbued with shared values and norms that enable individuals and groups to trust each other and work collectively in finding a mutual understanding in a planning process.</td>
<td>- locating planning centres in activity hubs for promoting interaction between the networks in order to create linkages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- establishing platforms that provide durable settings for the continuous learning on the existing social environment and development of new values necessary for cross-community activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- focusing on creating bridges between minority groups, majority and planning authority through the implementation of social inclusion and safety.</td>
</tr>
<tr>
<td>Community participation</td>
<td>Possibility to engage in planning processes and influence the decision-making processes.</td>
<td>- inform citizens about the possibilities to influence the planning decisions, for example through public notices, newspapers, and social media.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- provide a continuous two-way flow of planning information through different channels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- organise consultation exercises to ensure that the plan reflects community priorities, and explain how the proposed opinions are considered in the process.</td>
</tr>
<tr>
<td>Safety</td>
<td>Provision of an environment in which residents feel free and safe to express themselves and disagree while participating in collective activities.</td>
<td>- providing a space in which participants can freely attend and express their opinion without fear of attack, loss of social services, or disapproval.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- monitor the participants’ sense of safety and consult with high-risk groups, such as women, children and minorities to take necessary steps for increasing the safety in the planning process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- organise public meetings in a neutral place that is safe for all the community members, especially in the case of segmented communities.</td>
</tr>
</tbody>
</table>

The social sustainability tool was employed to assess how social sustainability is approached in a case study in Finland. The case study included the master planning process of the city of Lappeenranta and the legal framework (Finnish land use planning legislation) guiding it. Using a case study helps analysing how the public actor perceives and acts to achieve social sustainability in practice in land use planning processes. The tool revealed what social sustainability themes are highlighted and neglected by public actors in the case study. In addition, using the tool in the case study showed that it could be beneficial to use the tool to guide the design of a planning process, as it would help public actors think in advance how to integrate social sustainability themes in the process.
According to the results obtained from the case study, community participation was perceived as the main approach by public actors to achieve social sustainability. Shortcomings were observed in the case study, especially in the fields of equality and social inclusion. This is most likely due to the extra costs and time that the provision of services to promote equality and social inclusion introduces to the process.

In general, it can be seen that the studied planning process is a top-down system, and the power is in the hands of public actors. Legislation defines the procedure of land use planning processes and considers the equal right of interest parties to participate in the planning processes. However, the findings from the master planning process show that public authority provided participation opportunities to the interest parties, selectively, and therefore not everyone could participate in the process.

Although social sustainability is one of the objectives in land use planning legislation, the focus is mainly on participation possibilities, and no concrete approach or guideline has been provided to incorporate other social sustainability themes into planning processes. Public authorities (mainly planners) have just followed the exact procedure that is required by the legislation without taking any further initiatives to approach social sustainability in practice. Therefore, it can be claimed that the driving forces behind public actors’ orientation toward social sustainability is the legal requirements and political intentions.

Using the social sustainability tool demonstrated the intensified interconnection between the social sustainability themes and their role in the interaction between the public and private actors involving in the process. Therefore, if the interaction is assumed as an organic concept, social sustainability themes are the factors shaping it, which themselves are affected by the choices and actions of the stakeholders involved in the process. As seen in Figure 5, social capital is rooted in the values, norms and social networks developed by people (as private actors). Public actors are in charge of safety, social inclusion and equity. However, social cohesion and community participation are two-way themes that are affected by the degree and pattern of interaction between public actors and society.

Figure 5. Interaction and social sustainability tool (Rashidfarokhi et al., 2018b).
Paper 3 identified two challenging aspects that slow down the integration of social sustainability into planning processes. The first issue is the lack of knowledge and common understanding of the concept; and the second issue is the feasibility and availability of resources to integrate social sustainability themes into practice. In addition, it was also realised that the integration of social sustainability themes into the planning processes is not a black-and-white issue. Promoting social sustainability does not always lead to an optimal result for all and can have negative side effects, such as slowing down the process, increasing costs, and in some cases even violating human rights.

In line with the concluding remarks of the first paper, this paper also ends with a discussion on the inherent contradictions and imbalance between three dimensions of sustainability that prevent the public actors to always come up with a win-win solution. This paper claims that Campbell’s (2016) suggestion on considering a viable compromise between sustainable and unsustainable practices also better matches the internal contradictions of planning itself.

In addition, as planning has a critical role in transforming societies towards sustainability, this paper raises a question on whether the public actors and public authorities in particular have all the skills and knowledge necessary to deal with the challenges, or should other actors and disciplines also be involved in the process of planning?
3. Discussion and Conclusion

3.1 Summary of the results

The overall aim of this dissertation was to increase knowledge on the manifestation of sustainability in the operation of the built environment sector. To address the aim of the dissertation, three research questions were defined.

The first question studied how the concept of sustainability is approached in the built environment literature. The literature included both scientific articles as well as commercial sustainability frameworks in the context of the built environment. The findings from the literature review also worked as a base for developing tools and frameworks for relevant subsets and categories of the built environment sector. These frameworks and tools were used for analysis in the second and third research questions of this dissertation.

Through a literature review, a broad diversity in the scope, scale and specificity of the methodologies and frameworks for defining and assessing sustainability was identified. There could be two explanations for this: first, the contested nature of sustainability concept; and second, different interests and requirements of different actors in the sector. In addition, in reviewing the literature, it was noticed that the focus of the frameworks and methodologies is on the product and not on the process leading to it. The majority of the defined indicators are oriented towards environmental sustainability—quantitative and distinct from the others—without noticing the intangible aspects and interconnections between the sustainability dimensions.

The number of indicators also varied from a large number to too few. A large number of indicators make the process costly and time-consuming. A too limited number of elements, on the other hand, can result in missing an aspect that is vital for the integration of sustainability. A further issue found was the geographical scope of the tools. The majority of the scientific works and methodologies have been produced in the United States, the UK and East Asia. This can affect the effectiveness of the methodologies and frameworks, considering the fact that sustainability is also dependent on the local features, such as culture and governance.

The second question viewed the perceptions and actions of the public and private actors through a sustainability lens, using existing or self-created frameworks and tools found and developed in research question 1. Research findings reveal differences between private and public actors’ perceptions and actions concerning sustainability. Among the three dimensions of sustainability, public actors give priority to environmental and social sustainability. However, private actors studied in this dissertation mainly elaborate on the economic aspect of sustainability as they are involved in businesses linked to the built environment.

Public actors mainly focus on designing and enforcing spaces for implementation of sustainability in practice. Private actors adopt those guidelines and frameworks that are devel-
Developed by public actors to incorporate sustainability in their operations. Although such a top-down approach pushes different actors to consider all three aspects of sustainability in their actions (as seen for example in papers 1 and 2), it does not necessarily guarantee that sustainability is concretely and holistically implemented in practice (as seen for example in papers 2 and 3).

The different position that private and public actors take towards sustainability suggests that they should be treated and evaluated differently. To address this matter, the present dissertation suggests developing context-specific tools, which could better fit the nature, embrace different features of each context, and allow comparison. In addition, this dissertation proposes integrating social sustainability into processes as a tool to build consensus and resolve conflicts among actors. A socially sustainable process can legitimise the trade-off in the process caused by the inherent conflicts and imbalance between different perceptions of the actors as well as between the sustainability dimensions.

The third research question explored the motivations and forces that drive or affect actors’ orientation towards sustainability in different operating fields. According to the findings, for the public actors, sustainability is seen as the primary goal, and it is compulsory for them to adopt sustainable development goals. The main drivers for the politicians and public authorities can be assumed to be national/international legislations and conventions, peer pressure from other parties, as well as the tasks that are defined for the position that they have occupied. For the private actors in this study, sustainability is a secondary goal for fulfilling the legislation and institutional requirements in order to reduce the legal and financial risks. Recently, however, an increasing number of private actors have recognised the value that sustainability adds to their business.

The present dissertation argues that the concept of sustainability is still nascent and evolves along with society. As societal change continues, rigid sustainability approaches are outdated one after another. Therefore, this dissertation calls that the emphasis should be put on the development of adaptive approaches to changing conditions. To do this, processes in which a change of society and systems is stimulated should be further explored and studied. Culture is one of the main forces that drive change in society. Due to its role in shaping the meaning of development and determining how society acts, many scholars believe that culture should be included as the fourth pillar of the sustainability model (see, for example, Axelsson et al., 2013; Hawkes, 2001).

Therefore, it can be concluded that integration of sustainability and its assessment is not only a scientific or technical process but also social, cultural and political. However, the present dissertation raises this concern on whether by adding more dimensions (for example, politics or culture) to the triple bottom line sustainability model, the imbalance and overlap between sustainability dimensions would be increased. Why we need to have multi-dimensional sustainability models if the dimensions overlap and compete over each other? Should the principles of the sustainability be rethought?

### 3.2 The contribution of the research

The academic value of this research is in the understanding it has developed on the complex relationship between the built environment system and sustainability, which is essential for achieving progress in theory and practice. This dissertation reviewed and created a synthesis of academic literature dealing with sustainability and the built environment, scientific theo-
ries, and sustainability methodologies and frameworks. This provides a holistic picture of the present status of sustainability research, both in scientific and commercial fields of the built environment sector, and underlines the research gaps and challenges in the literature for future improvement.

The focus of the dissertation is on the actors’ perceptions and actions regarding sustainability and the driving forces behind it in the operating field of the built environment sector. It clarifies the current state of sustainability integrated into the built environment practice and challenges around it by using existing sustainability frameworks and self-made tools. This research is important, as it helps the scientific community to understand how and why diverse actors perceive sustainability differently.

Moreover, this dissertation contributes to knowledge regarding the inter-twined impacts and interconnection between the intangible and tangible elements of sustainability. This research shows how to handle integrating and assessing intangible social sustainability elements by supplying a social sustainability tool in the context of the built environment, which includes exemplary measures and assessment methods. In addition, this research demonstrates an approach by which actors’ concerns can be contextualised for the integration and assessment of sustainability at the policy level by linking those concerns to each aspect of sustainability. These contributions would increase the social sustainability of the decision-making processes by providing approaches that involve different actors. In addition, this dissertation contributes to the improvement of the legitimacy of built environment sustainability strategies by showing how social sustainability can be used to justify the trade-off in decision-making processes that happen due to the inherent conflicts and imbalance between sustainability dimensions.

To the author’s knowledge, the empirical work of this dissertation was not carried out before. This dissertation is one of the few to include a study on processes in the context of the built environment, and provides a first-of-its-kind social sustainability tool for the assessment of planning processes. By focusing on the processes, this dissertation offers an insight into the significant role that sustainability processes could play in achieving a sustainable outcome.

The findings obtained from the case studies in Finland also bring new evidence of change in Finnish society. The dissertation elaborated on the different perceptions of the private and public actors concerning sustainability and claimed that they should be treated and evaluated differently. Finally, the findings from the case studies would also help the actors obtaining a holistic understanding of sustainability in the context of the built environment, recognising the shortcomings and taking actions to address the challenges in order to decrease the political, legal and financial risks. In the long term, this can also advance the integration of sustainability into the practice of built environment activities.

3.3 Evaluation of the research

Any review of a research methodology and methods is incomplete without evaluating the research. The quality of this dissertation is evaluated based on four factors suggested by Robson (1993): credibility, transferability, dependability and confirmability.

The first factor, credibility, is defined as the confidence that can be placed on the accuracy of the research (Holloway and Wheeler 2002). In order to enhance the credibility of qualitative studies, Robson (1993) proposed four techniques: prolonged involvement, persistent
observation, triangulation and peer debriefing. Of these, prolonged involvement is more relevant to field studies where the information is derived from respondents, thus not addressed in detail in this dissertation.

The purpose of the persistent observations is to identify the aspects of a situation that are most relevant to the issues being pursued and focusing on them in detail by observing a case study over a sufficient period (Lincoln & Guba, 1985). Persistent observation is specifically related to papers 1 and 3. In Paper 1, policy discourse was studied for a period of 25 years, and in Paper 3, the documents that used to study master planning process covered the length of the whole process, which took 5 years.

Triangulation is defined as a validity procedure where evidence from multiple and different means of research are employed to increase credibility (Robson, 2002). Patton (1999) has defined four kinds of triangulation for qualitative research: (1) triangulation of data sources, (2) triangulation of methods, (3) triangulation of investigator, and (4) theory/perspective triangulation. This dissertation includes triangulation of data sources, triangulation of investigator and perspective triangulation.

In triangulation of data sources, the consistency of different data sources within the same method is examined to draw conclusions. In this dissertation, papers 1 and 3 include triangulation of data sources, where a large number of literature and frameworks were collected and analysed for developing sustainability tools and frameworks. In empirical research, triangulation by data source was also achieved through the diverse range of newspaper articles collected for discourse analysis in Paper 1. In Paper 2, in addition to annual reports, other documents including sustainability booklets, interim reports, websites, and building brochures were used. In Paper 3, several documents related to different stages of master planning process were collected.

In triangulation of investigator, multiple researchers are used to review the research findings. All the research papers were evaluated by comparing them with the findings of the existing literature conducted by other scholars. The findings and conclusions of all the papers were also discussed with other co-authors.

In theory/perspective triangulation, several perspectives or theories are applied to interpret the data. In Paper 2, two different coding systems were applied to the same dataset to see if the results are consistent.

The final technique to enhance the credibility of the research, peer debriefing, is defined as a process in which one’s analysis and conclusions are exposed to a colleague or other disinterested peer, parallel to the research process (Robson, 1993). In this dissertation, peer debriefings with other research group colleagues were held throughout the research process. In addition, due to the article-based structure of this dissertation, all of the research papers have been peer-reviewed and evaluated individually when published in scientific journals.

The second factor for evaluation of the research suggested by Robson (1993) is transferability of the findings. Transferability is defined as a degree to which results of a qualitative research can be transferred to other contexts (Lincoln & Guba, 1985). Transferability can be discussed from two aspects. The first aspect is to describe the research process in sufficient detail, which in this dissertation is supported by providing a detailed description of the methodology in each paper, as well as in this summary. The second aspect is the transferability of the research findings that can be discussed considering: (a) representativeness of the samples and (b) transferability of the findings to other geographical contexts.
The sample in the first paper represents the voice of a wide range of actors in Finland. On the other hand, transferability of the results of Paper 1 to other geographical contexts is more limited. This is due to the fact that the development of public discourse in each context depends on various factors that should be analysed individually. However, when the results of the public discourse were compared with previous empirical studies in Europe, similar trends were observed. In addition, the developed sustainability framework can be employed in other countries for the same purpose, as it is based on a wide range of international scientific literature.

The sample in Paper 2 does not represent the current sustainability reporting practices in all the listed real estate companies in the Nordic region. This, however, does not limit the possibility of transferring the findings to other contexts (Robson, 1993), in which observations in one context contribute to understanding the phenomenon in other contexts (Yin, 1994). Therefore, the findings of Paper 2 can be transferred to other Nordic countries, as all the sample real estate companies are active in the Nordic region and they follow the same strategy in all branches. Moreover, the framework that was used in this paper is the most-utilized reporting framework among companies in Europe.

The sample in Paper 3 includes national legislation and a master planning process. The legislation guides all the land use planning processes in Finland. Therefore, as public authorities follow the same legislation for running planning processes in different cities, the selected planning process can to some extent represent the common practice of land use planning processes in Finland as a whole. The developed social sustainability tool in Paper 3 can also be employed in other planning processes in different cities and countries, although the priority of the themes and the detailed form of applying the tool should be evaluated individually in each case, depending on local specifications.

The third factor for research evaluation, dependability, refers to the consistency and repeatability of findings over time (Bitsch, 2005; Lincoln & Guba, 1985). Triangulation discussed previously under the subject of credibility is one way of assessing dependability that was used in this dissertation. In addition, the dependability of this dissertation was established by documenting research methodology and findings in a clear, systematic and detailed manner which were also reviewed in the publishing process of scientific journals.

The fourth and final factor, confirmability, relates to the objectivity of the research and is referred to as a degree of neutrality or the extent to which the findings of a study are not dependent on the researcher’s bias, motivation or interest (Robson, 1993). In this dissertation, an audit trail is used to support the confirmability of the research. An audit trail is a transparent description of the research process and findings (Lincoln & Guba, 1985).

In this dissertation, the audit trail consists of the raw data (including data from a master planning process), legislation, newspaper archives, and notes from focus groups as well as processed data, including models, frameworks and calculations related to content analysis and categorisation of discourse and case study data. In addition, the provision of a non-Finnish viewpoint by the author of this dissertation to Finnish case studies contributes to the confirmability of the case study findings. After demonstrating how the research is evaluated, potential topics for the future research are presented in the next subsection.
3.4 Future research

In addition to papers 1, 2 and 3, which all included topics for future research this summary has proposed further directions for future research.

This dissertation claims for the inefficiency of a general sustainability framework for the built environment sector as a whole and calls for the development of context- and cultural-specific sustainability approaches. However, to support this assumption, further empirical studies are required. The findings and concluding remarks of this dissertation are based on three cases. In the future, more case studies can be conducted in order to provide more feedback and reliability to the results and evolutionary development of the frameworks and tools studied and created in this dissertation.

In addition, the perceptions and actions of the actors involved in the operation field of the built environment sector were analysed by the author of this dissertation. Therefore, in future studies, the scope can be extended in order to include stakeholders in the research process. This is because this field usually requires joint deliberation and collaboration among academics and practitioners and continuous feedback from implementing the solutions in practice.

The frameworks and tools used in this dissertation had an ex-post approach. Thus, another expansion of this research is to change the stage from ex-post to ex-ante or monitoring stages, which can help decision-makers be more accountable and responsive to challenges. Moreover, the tools developed in this dissertation were without a weight scheme. However, further research can employ a weighting scheme for the elements required in a sustainability framework. Such an approach could increase the possibilities to identify the shortcomings, comparability of the results and evaluation of the integration of sustainability through time.

Finally, to increase the efficiency of the sustainability integration and assessment process, further research can work on defining the tasks of actors in the decision-making processes. Such research could lead to further consensus-building, resolving conflicts and achieving legitimate sustainable strategies in the built environment sector.
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This dissertation argues that the concept of sustainability is still nascent and evolves along with society and calls that the emphasis should be put on the development of adaptive approaches to changing conditions. To do this, processes in which a change of society and systems is stimulated should be further explored and studied. Culture is one of the main forces that drive change in society. Due to its role in shaping the meaning of development and determining how society acts, many scholars believe that culture should be included as the fourth pillar of the sustainability model. Therefore, it can be concluded that integration of sustainability and its assessment is not only a scientific or technical process but also social, cultural and political. However, the dissertation raises this concern on whether by adding more dimensions to the TBL sustainability model, the imbalance and overlap between sustainability dimensions would be increased. Why we need to have multi-dimensional sustainability models if the dimensions overlap and compete over each other? Should the principles of sustainability be rethought?