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TITLE: Toward a Framework for Retail Innovation Policy – A Case Study from Stavanger

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Toward a Framework for Retail Innovation Policy – A Case Study from Stavanger

ABSTRACT

The results of the financial crisis, the decline in oil prices and global climate changes are forcing the need of restructuring the economy; moving towards a more diversified economy, a more competitive, effective and efficient innovation system, and improving research efforts and quality of higher education. Further, global competitive pressure, fluctuating purchasing power and social responsibility is reducing consumer wallet size as well as share of wallet.

As a result, retailers are challenged with new technologies aimed at the service industry which are increasing competition and escalating consumer demands. Given the importance of retail as a contributor to economic viability, cultivating innovation within the industry is an area worthy of policy attention.

The aim of this study is to identify how policy can stimulate innovation and facilitate diffusion within the retail industry. Using Stavanger, Norway as a case study, we conduct a qualitative analysis which explores retailer response to innovation as well as the effectiveness of existing innovation policies within the industry. Research was carried out utilizing a multi-operational approach, whereby findings from in-depth interviews were combined with supplementary perspectives and secondary data in effort to produce a holistic account of the phenomena.

We find evidence that cognitive barriers and financial anxiety among retailers, as well as lack of innovation policy instruments applicable for the retail industry are negatively influencing innovation adoption. This impact is particularly evident among small, locally-based retailers. Therefore, we propose a framework for retail innovation policy to complement the existing innovation support schemes in the stimulation and diffusion of innovation within the retail industry.

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Celia M. Vrnak   Malin Woie

Stavanger, 17.06.2019

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1. INTRODUCTION

1.1 Overview

The world is interacting ever more closely with the rise of globalization over the past few decades and modern retailing is no exception as retail markets in many countries are influenced by global changes in supply chain, product assortment, store format and branding (Reinartz, et al., 2011). Advancements in digital technologies and sustainable initiatives have shifted how and when consumers demand goods. As a result, retailers must reshape their practices and create a new shopping experience for consumers. With continued increase in the scope of retailing and firm globalization, competition intensity, rapid technology development and resource scarcity, retail innovations are crucial for businesses to successfully overcome challenges and take advantage of opportunities for successful competition (Reinartz, et al., 2011; Sorescu, et al., 2011; von Briel, 2018). However, many retailers do not yet fully comprehend the implications and advantages of new technologies and the possibilities for business innovations. Thus, cultivating innovation remains a major priority for retail businesses and is an area in which policy can make a valuable contribution.

Retailing has a significant impact on the economic viability and regeneration of a nation as it constitutes a large share of both GDP and employment (von Briel, 2018; Yrjänä, et al., 2018). Accordingly, retail planning policy as well as trade and sustainability regulations play an important role in the capabilities of retail businesses, impacting customer traffic, sales volumes and ultimately profitability (Hallsworth & Coca-Stefaniak, 2018; Yrjänä, et al., 2018). Though a majority of research on innovation relates exclusively to patents and R&D efforts, recent studies have demonstrated the importance of innovation activities in services independent of manufacturing (Trigo, 2013; Pantano, 2014). As such, the increasing volume and diffusion of new technologies focused on innovating and enhancing the retail process warrants the attention of policy makers.

1.2 Purpose

1.2.1 Research Question

The primary goal of this paper is to identify how policy can stimulate innovation and facilitate diffusion in the retail industry. Using the metropolitan city of Stavanger, Norway as a case study, we examine the extent to which technological and environmental innovations are diffused among local retailer firms. We also aim to understand which, if any, existing regulations are impacting retailers' capacity to adopt innovations as well as the effectiveness of innovation policy to foster innovation in the retail industry. Additionally, we identify the challenges and opportunities retailers face in adapting to industry changes.

Main research question:

How can policy stimulate innovation and facilitate diffusion in the retail industry?

Secondary research question 1:

How are retailers responding to innovation and to what extent?

Secondary research question 2:

To what extent is policy effectively stimulating innovation & facilitating diffusion among retailers?

1.2.2 Contribution

By providing evidence through in-depth, qualitative analysis, this paper contributes toward a more nuanced understanding of the diffusion of innovation among retailers. A holistic presentation of the innovative forces impacting the retail industry may provide useful insights for managers interested in an innovation strategy. Additionally, we identify key limitations in the ability of existing innovation policy to spark innovation and facilitate adoption. Finally, we propose a program framework which compliments existing programs in a way which appropriately compensates for existing gaps in educational and fiscal resources.

1.3 Organization of paper

The remainder of this paper is organized as follows: Section 2 reviews literature regarding the concept of innovation in economic, organizational and policy contexts. We present the current

drivers of innovations in the retail industry in section 3, while section 4 details the research method design, approach, scope and sampling of our research study. In section 5, we present primary findings from the research study. The following two sections review our secondary data in relation to the economic status of Norway and its retail industry as well as the country's political structure, existing regulations related to retail and existing innovation policy programs. In Section 8, we discuss the study findings and secondary data, identifying key challenges for retailers in adapting to industry changes. We also identify how current and planned policy contribute to retailers' challenges. In Section 9, we present framework for a retail innovation education and funding program. Finally, we present research limitations and present questions intended to stimulate future research.

2. Literature Review

2.1 Organizational Innovation

2.1.1 Economics

Joseph Schumpeter, a pioneer in economic analysis, declared innovation to be an essential element of economic change, defining innovation as "*the carrying out of new combinations*" of new or existing resources which are put into commercial practice (Schumpeter, 1934). Peter Drucker, a well-known contributor to modern business foundations and philosophy, adds to this definition by explaining innovation also involves new business opportunities, stating "*Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service. It is capable of being presented as a discipline, capable of being learned, capable of being practiced.*" (Drucker, 1985). Innovations in business are driven by a firm's capacity to recognize opportunities and capitalize on them (Tidd & Bessant, 2013). A firm's ability to adopt and implement innovations, or its innovativeness, represents a qualitative measure of organizational performance and ability to respond to market changes (Pantano, 2014; Moos et al., 2010).

Modern literature agrees with Schumpeter's assertion of innovation as an essential element for accelerating or sustaining the rate of economic growth, both regionally and globally (Baumol, 2002; Fagerberg, et al., 2005; OECD and EuroStat, 2005; Tidd & Bessant, 2013). Economic growth cannot be explained by only increasing capital and labor (Schumpeter, 1934; Solow, 1956). It is also important for those desiring to strengthen economic strategy and improve quality of life. On a firm level, those which continually innovate are able to develop and maintain a competitive advantage, regardless of economic or social conditions (Tidd & Bessant, 2013).

2.1.2 Classifications

Innovations are often described by their degree of novelty in comparison to existing options whereby they are categorized as incremental or radical (Freeman & Soete, 1997; Fagerberg, et al., 2005). An innovation may be considered new to an organization, industry or to the entire world. This typology is also used to describe an innovation's relative importance on resulting firm changes as well as overall market impact. Radical innovations result in new functionalities or technologies which undermine an existing market, while incremental innovations or adaptations are those which result in an improvement upon an existing

concept, generally through value chain adjustments such as improved efficiency, increased quality or reduced costs (Christensen, 1997; Pantano, et al., 2013).

Schumpeter emphasized the economic importance of radical innovations and technological revolutions however, modern literature asserts the realized benefits from radical innovations generally require a series of incremental improvements (Fagerberg, et al., 2005). As such, a majority of economic benefits are derived from incremental innovations. For example, the success of Google's self-reinforcing page rank search engine algorithm was the result of incremental advances made by preceding companies who experimented with information organization services and advertising supported business models.

There are four dimensions of innovations in terms of business outcomes. Product or service innovations are the creation of a new or improved good or service provided by an organization (Fagerberg, et al., 2005; Tidd & Bessant, 2013). Process innovations refers to a change in the method through which goods and services are created and delivered to customers (OECD and EuroStat, 2005; Tidd & Bessant, 2013). This differs from product/service innovation in that it involves significant changes in the equipment or techniques used to produce or perform, the product or service, respectively (OECD and EuroStat, 2005). Marketing innovations are the result of a change in the context in which a product or service is delivered to market (Tidd & Bessant, 2013).

The fourth dimension of innovation, business model innovation, articulates the firms value proposition and structure of the value chain (Chesbrough, 2010). This involves new methods of conducting economic exchanges resulting in either the creation of a new market or a new form of transaction in an existing market and ultimately redefining an industry (Kahn, 2018; Zott & Amit, 2007). This can be achieved by, for example, "*connecting previously unconnected parties, linking transaction participants in new ways or designing new transaction mechanisms*" (Zott & Amit, 2007). Sorescu et al. (2011) put together an excellent summation of business model innovation explaining, if a business model is defined as a firm's system for the creation and appropriation of value, then business model innovation is a change, which has not yet been put to practice, in one or more elements of the business model. They further clarify business model innovations result in system-wide alterations, whereas product/service, process and positioning innovations are isolated occurrences. As such, business model innovation may encompass or transpire in combination with product/service, process and positioning innovations (Schumpeter, 1934). Business model innovation is becoming an increasingly common method for businesses to create and/or

maintain a competitive advantage as the returns to business model innovation have been shown to exceed those of traditional product or process innovations (Lindgardt, et al., 2009).

2.1.3 Retail Innovation

The retail trade is characterized by the direct sale service of goods to consumers and households. This industry includes product categories such as grocery, clothing, home goods and electronics (Meld. St. 9, 2018-2019). "Retailers," as referred to in this paper, are representatives of a firm which conducts retail trade directly to end-user consumers.

Sorescu et al. (2011) explain Retail Business Models (RMBs) have two unique core characteristics. The first is that retailers place more importance on *how* they sell versus *what* they sell. As they generally depend on others for production, they are less likely to extract sustainable benefits from product exclusivity. The second characteristic is that direct interaction with end-user consumers requires retailers to focus on enhancing customer experience in order to strengthen the relationship and optimize value.

Within a retail business model, innovations are aligned in one of two directions: operational or consumer (Sorescu, et al., 2011). Operational retail innovations are driven by input objectives, such as margin and inventory turnover, and focus on innovating through operational efficiency. Conversely, consumer retail innovations are driven by output objectives focused on creating customer value, such as shopping experience, service and co-creation.

Traditionally, service firms are more prone to marketing and organizational innovations (Trigo, 2013). As such, technological innovation research and development (R&D) efforts in the retail industry are primarily focused on product development rather than service delivery improvement (Pantano, 2014). As such, retailers tend to rely on innovations diffused from manufacturing firms (Pantano, 2014). In general, the retail trade is characterized as non-R&D intensive and minimally innovative.

2.1.4 Diffusion of Innovation

Diffusion is one of the key drivers behind the successful introduction and commercialization of innovations (Hall, 2005). Within innovation literature, diffusion is characterized as a process by which new technologies or innovations are adopted among individuals and firms in a socio-economic system (Hall, 2005; Pantano & Vannucci, 2019). Yet, diffusion is also an innate mechanism within the innovation process as a form of feedback which is produced during the learning and imitation phases and used to improve the innovation (Hall, 2005).

Much of modern literature regarding innovation diffusion among organizations is based on the work of America sociologist, Everett M. Rogers. His theory on innovation diffusion provides a framework for understanding causes, mechanisms and the rate at which innovation is adopted. Rogers (1983) defined diffusion as "*the process by which innovations are communicated through certain channels over time among members of a social system*".

Within this definition, Rogers emphasizes it is the *perception* of newness by an individual or group which characterizes an innovation, regardless of its first use or discovery. Further, newness involves the attitude toward an innovation and decision to adopt, as well as knowledge of it.

In attempt to explain the variance in speed among adopters, Rogers identified a set of five factors which are used to assess an innovation for adoption: (i) relative advantage, the degree to which the innovation is perceived as superior to the current solution; (ii) compatibility with the current business model; (iii) complexity, the ease of comprehension and use (iv) trialability, the degree of possible experimentation; and (v) observability, the ease of performance evaluation.

Through his research on organizations and firm strategies, Rogers developed five categories of adopters based on speed of adoption. *Innovators* are technology trailblazers who believe new technology will yield substantial benefits and are willing to make the investments necessary. *Early adopters* aim to maximize technology benefits by integrating new technologies during their infancy stage. The *early majority* group is interested in technology but waits for it to be proven and more widely accepted, generally adopting as a means of status, while the more conservative *late majority* group adopters are uncomfortable with technology but ultimately adopt due to pressure from social norms and reference groups. Finally, *laggards* are averse to technology in general and skeptical of benefits realized from the adoption of new technologies.

Everett Rogers' Diffusion of Innovation Model
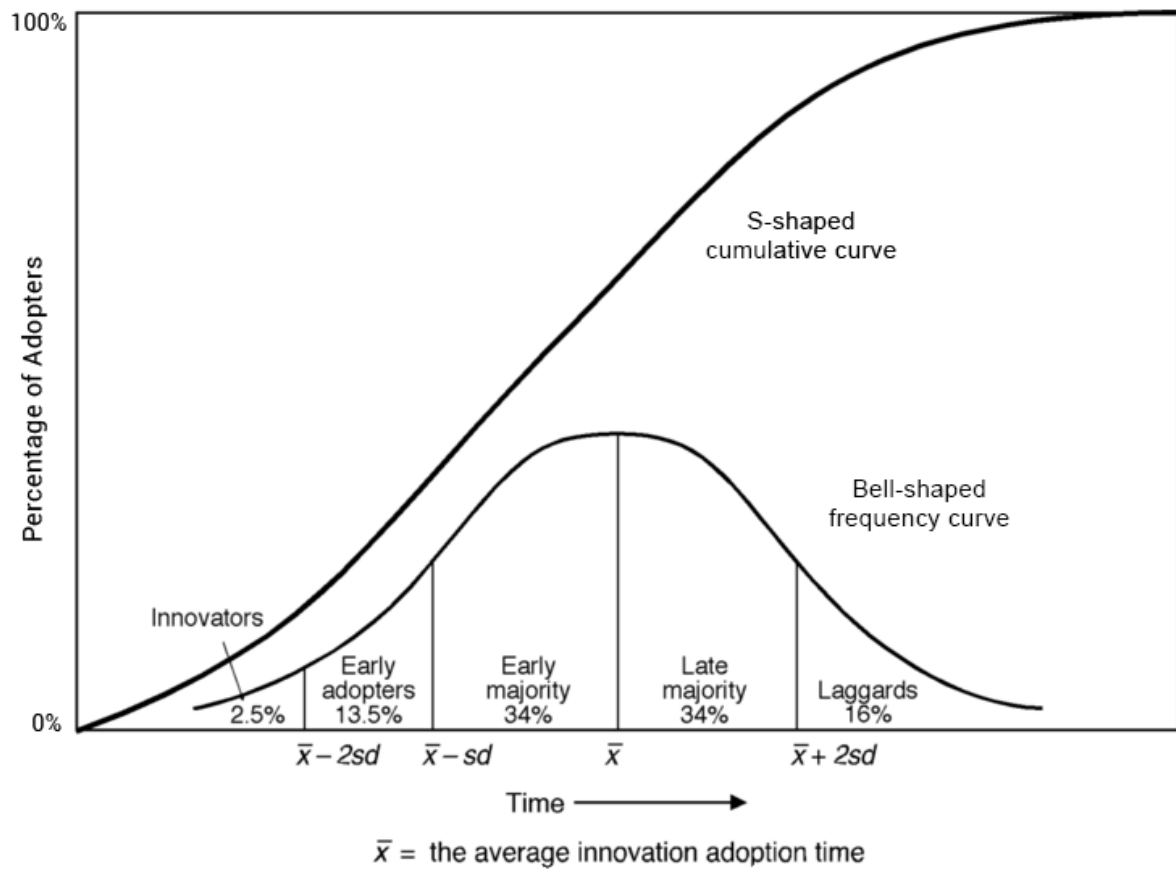
Figure 1: Rogers' Diffusion of Innovation Model (Rogers, 1983)

2.2 System of Innovation

2.2.1 Definition and Concept

Edquist (2005) defines System of Innovation as being the determinants of innovation processes. This being the economic, social, political, organizational, institutional, and all other important factors that contributes to the development, diffusion, and use of innovation.

Liu & White (2001) suggest a framework that focuses on five fundamental activities that are related to the innovation processes within a system: 1) Research, 2) Implementation, 3) End-use 4) Linkage and 5) Education.

Further, the System of Innovation approach focuses on three kinds of learning: Innovation (product and/or process innovation in firms leading to the creation of structural capital and

organizational learning), Research and Development (carried out in universities, public research organizations and firms which leads to creation and potential sharing of knowledge), and Competence building (individual learning such as training and education from school, universities and firms that lead to the creation of human capital) (Edquist, 2005). Building competence involves learning, renewal of skills and the acquisition of insight necessary in order to innovate. Therefore, the system of innovation approach may be seen as a framework for both innovation and competence building (Lundvall & Borrás, 2005).

The innovation system concept can be used in a broad or narrow view as both national, regional and sectoral systems are commonly cited in the literature. Freeman (1987) defines national system of innovation as being *"the network of institutions in the public and private sector whose activities and interactions initiate, import, modify and diffuse new technologies"*. Innovation and technological development are results of complex relationships among various actors such as businesses, universities and public research institutes that produce, distribute and apply different kind of knowledge. The basis for the concept of national innovation system is the idea that the key to improving technological performance is to understand the linkages between the actors involved in innovation processes (OECD, 1997). An understanding of the innovation system can be useful for policy makers when identifying areas for improving innovative performance and overall competitiveness.

Further, Regional innovation systems are often created through increased collaboration between businesses, local universities and R&D institutes. This type of clustering can often be seen as a result of policy intervention in order to increase innovation capacity and collaboration (Asheim & Gertler, 2005). Innovation differs across sectors in terms of sources, actors, features, boundaries and organizations, and impact of general policies may drastically differ across sectors. A sectoral approach to innovation systems can be a useful tool for policy makers in order to comprehend the differences in sectors and identifying the specific actors that should be influenced by policy (Malerba, 2005).

2.3 Innovation Policy

Slow periods in economic growth has led policy makers to be more concerned about the role of innovation for economic stability and international competitiveness which has led the term 'innovation policy' to become more commonly used. (Edler & Fagerberg, 2017; Lundvall & Borrás, 2005).

The National Innovation System framework has for decades been primarily aimed at fostering economic growth. Innovation policies within the framework aim at facilitating innovation activity, spur job creation, increase competitiveness and GDP growth. The occurring environmental changes has led to the need of a second framework for innovation policy, the System of Innovation. This policy approach combines technology and social innovations to tackle systemic problems and is designed to transform sociotechnical systems into more environmentally sustainable configurations (Huges, 2018).

Lundvall & Borrás (2005) distinguishes between innovation policy as those initiatives aiming at promoting innovation within the institutional context and those aiming at changing the institutional context in order to promote innovation.

There is a strong relationship between science policy, technology policy and innovation policy. While the focus of science policy is the production of scientific knowledge and the focus of technology policy is the advancement and commercialization of sectorial technical knowledge, the focus of innovation policy is the overall innovative performance of the economy. Innovation policy includes the same instruments as policy of science and technology and is therefore often referred to as STI policies (Lundvall & Borrás, 2005). When analyzing innovation policies Edler & Fagerberg (2017) raises the question of which policies to include; should the analysis only consist only of policies designed for influencing innovation, such as the STI policies, or take into account other policies that primarily are created for other purposes, but which may affect the innovation activity.

Sandro Mendonça suggests seven normative principles for designing STI- policies (Lundvall & Borrás, 2005):

1. **Robustness:** *"decisions and social structures should withstand the occurrence of different future scenarios."*
2. **Flexibility:** "*In the occurrence of sudden socio-economic change institutions must be able to change direction rapidly."*
3. **Internal diversity:** *"Structurally dissimilar characteristics must be built in to allow survival if the selection environment changes"*
4. **External diversity:** *"Variety of links to different kinds of agents will help adaption when change in the environment arises."*
5. **Window of opportunity:** *"Attention to timing and sequence in face of path-dependent systemic context."*

6. ***Incremental approach:*** *"The whole can be changed only through the cumulative impact of small steps."*
7. ***Experimentation and prudence:*** *"New policy ideas should be submitted to trial in localized context before full deployment."*

Policy instruments are tools used by the government to pursue a desired outcome. STI policy instruments include, but are not limited to, Public research funds and procurement, tax incentives to firms, higher education, intellectual property rights and improving access to information (Lundvall & Borrás, 2005).

Measuring the impact of science, technology and innovation policy have been subject of interest for several decades. Attempts on measuring efforts in science have been made by relating R&D expenditure to national income and relating scientific articles to the resources used. Moreover, in technology, patent statistics have been used to compare national systems in terms of technological specialization and advantage. When measuring the impact of innovation policy, these measurements are useful, but not sufficient in order to analyze the overall innovative performance of an economy. The OECD studies of national innovation systems direct attention to other factors, such as the actors and linkages of interaction within the system which gives new insight into the innovative and economic performance of the member countries (Lundvall & Borrás, 2005; OECD, 1997).

3 Drivers of Retail Innovation

3.1 Technology

Despite a traditional dependence on manufacturers for innovations, a surge of innovative technologies for selling goods and services has emerged, facilitating an important transformation in the retail industry. The diffusion of these technologies has significantly changed the consumption of products and services, business models and purchasing processes across the industry (Pantano & Vannucci, 2019; Brynjolfsson, et al., 2011; Demirkan & Spohrer, 2014).

3.1.1 Commercial internet

Increased internet usage and security has made e-commerce a more effective and efficient method of information and product exchange for both retailers and consumers (McGrath,

2010). For some product categories, digital technology is driving a shift toward replacing physical products entirely, as is the case with books, music and movies. Information technologies enable retailers to reach the right customers at a lower cost, while consumers enjoy more informed decisions, targeted and more beneficial offers, and faster service (Grewal, et al., 2017).

The onset of digital technology has made the competitive landscape of retail far more dynamic. Consumers now have access to items which were previously unattainable or difficult to obtain; retailers can no longer rely on geography and consumer ignorance to aid marketplace competition (Brynjolfsson, et al., 2013; Verhoef, et al., 2015). Global sourcing has shifted the focus of competitive advantage from input costs to productivity (Porter, 1998) resulting in the creation of many new, and often more efficient and/or effective digitally-enhanced sales channels (McGrath, 2010; Pantano & Viassone, 2015). Retail firms based on purely digital transaction platforms are altering the cost structure and profitability of the business model for brick-and-mortar operations.

In addition to an increasing number of sales channels for consumers to choose from, the internet has facilitated selling across channels (Reinartz, et al., 2011; Sorescu, et al., 2011). As such, retailers are increasingly adopting omnichannel business models which utilize advanced technologies to integrate activities between all channels from communication and distribution (Ailawadi & Farris, 2017). This seamless interaction across channels creates a single purchase experience for consumers and reduces redundancy for retailers. For example, Nordstrom's webstore and physical store inventory database integration facilitates fulfillment from the nearest shop should the item be out of stock in the web warehouse (Reinartz, et al., 2011). Another common example is a "click&collect" system whereby users purchase an from a retailer's website, then pick it up in-store.

3.1.2 Information Communication Technologies

Mobile technologies and devices have changed the game for brick-and-mortar stores. Many consumers use mobile phones to view product inventory online or location while in-store. Others use mobile applications to for product purchase yet prefer to collect in-store. Mobile is also driving the use of self-service technologies in retail. For example, Walmart's self-service registers provide a QR code with which customers can use their mobile phone to scan and make a digital payment.

Additionally, endless access to the internet as well as mobile applications and geo-targeted offers facilitated by smartphones has enhanced retailers' connectivity with consumers and ability relate timely, relevant offers (Grewal, et al., 2017). For instance, location data embedded in mobile applications can be used to notify consumers of promotions when they reach a certain proximity to the store. Digital technologies and mobile devices usage have also facilitated the rise of mobile transaction services, such as PayPal, ApplePay and Vipps. These ubiquitous mobile payment mechanisms facilitate fast, secure and convenient payment for consumers while retailers enjoy reduced transaction costs and increased customer loyalty (Johnson, et al., 2018).

3.1.3 Big data, advanced analytics and machine learning

The nature of retail provides a host of relevant information which can be captured from a variety of technology sources such as transactional data within enterprise software; customer demographics generated by loyalty, website and social systems and captured in customer relationship management programs; and location and timing intelligence supplied by mobile devices (Grewal, et al., 2017). Big data is a system with which this information is aggregated and analyzed to produce meaningful and valuable insights. An increase in ubiquity and cost-effectiveness of data collection, storage and processing has resulted in more and more retailers taking advantage of the power of big data to exploit the rapidly continuing onslaught of available information (Brynjolfsson, et al., 2011; Grewal, et al., 2017)

Machine learning algorithms coupled with the power of big data is enabling retailers to better manage a variety of issues, accommodate shifting trends and develop operational efficiencies which contribute to firm profitability (Grewal, et al., 2017; Kumar, et al., 2017; Pantano, 2014). For example, online sample sale retailer, Rue La La, partnered with MIT to develop a machine-learning algorithm which analyzes market data to create a price-demand relationship model and generate a daily report with optimal product pricing (Supply Chain Navigator, 2016). Additionally, retailers are utilizing machine-learning algorithms to generate customized product recommendations.

3.1.4 Customer experience

Technology is escalating experience expectations and generating customer demand for more innovative services and experiences (Rai, et al., 2018; Pantano, 2014). Consumers have access to more and better-quality information, making them more knowledgeable and in turn

more selective about which products they want to purchase, and at what price. Thus, the purchase experience will become more important than ever.

Traditional retail sales service no longer provides the same added value; once highly-coveted sales team experience knowledge is now replaceable with user-generated, in-depth product information and performance reviews available online. Retailers are now going beyond product knowledge and utilizing technology to create unique, augmented experiences which boost loyalty and retailer brand equity (Sorescu, et al., 2011). A truly enhanced experience combines emotional stimulation and immersive product engagement to create an authentic, meaningful encounter which increase perceived value (Grewal, et al., 2017; Sorescu, et al., 2011). For instance, luxury designer, Burberry, enables consumers to scan a bar code on a product in store which triggers a video of the designer sharing his or her design creation story. Similarly, Nike uses advanced camera technology in the SoHo store's demonstration facilities to analyze a customer's gate and recommend the best shoe. A holistic customer experience approach also includes elements outside the retailer's control, such as purchase intent and social influence (Grewal, et al., 2017).

Social media is an increasingly important channel for retail as the accessibility of relevant information and ability to participate in dynamic conversations provided by social media enhances consumers' desire to engage with brands (Grewal, et al., 2017). Additionally, retailers are capitalizing on the social structures and relationships of social media by collaborating with influence users (those with a highly established credibility among a large audience) to further increase reach and facilitate consumer engagement (Torres de Oliveira, et al., 2019). In addition to emerging purchase opportunities, such as shoppable Instagram posts and stories, retailers are leveraging social media to enhance customer service. Retailers can quickly respond to customer questions, issues or concerns, thereby developing close customer relationships and improving loyalty. Further, social media can be used as a co-creation mechanism to involve customers at various stages of product design and test new services. In this way, retailers are able to use consumers, rather than manufacturers, as source of knowledge to foster innovation.

Many consumers expect real-time interaction from companies (Salesforce.com, 2018). In addition to social media, retailers have taken advantage of AI technologies, such as website chatbots, to provide continuous customer support. AI-based response systems increase customer satisfaction by aiding in product search, answering questions and making tailored

suggestions based on historical data and predictive analytics (Grewal, et al., 2017). The use of AI-powered interfaces in retailing is expected to continue to rise due to ease of availability, use and quality (KPMG , 2018).

3.2 Social Responsibility

Social responsibility is expanding on a global scale and the United Nations is leading the charge. The organization's 2030 Agenda for Sustainable development includes seventeen sustainable development goals to stimulate global action, six of which are directly related eco-friendly measures (UN.org, 2018). The clout of these goals has been augmented through adoption and promotion from highly influential partners including the European Union, the Global System of Mobile Communications Association, six of the world's largest advertising agencies and over 100 media outlets worldwide (UN.org, 2019). As a result, consumer conscious has significantly increased (KPMG , 2018) and a new paradigm of production and consumption has emerged.

As consumers become more socially aware, they are looking to firms to help address societal issues, from environmental impact reduction to fair labor conditions and philanthropic ventures (Zappulla, 2019). They are interested in building relationships with firms who hold similar values and are often willing to pay more for it (KPMG , 2018; Kumar, et al., 2017; The Nielsen Company, 2018). Accordingly, more retailers are integrating corporate social responsibility principles in their business model as a means of differentiation. For example, TOMS shoes, a pioneer in social advocacy business models, has embedded social conscious values throughout its entire business model – from product materials to manufacturing and delivery services (TOMS, 2012). Similarly, online fashion retailer, Everlane, has developed a business model based on hyper-transparency whereby consumers can access information on all aspects of the product value chain, including factory working conditions (Everlane, 2017).

Socially conscious consumers are also modifying their own consumption habits and shifting toward collaborative consumption practices as well as used, recycled products. Subsequently, a growing body of sharing economy services, or organized system of trading and swapping across a community of peers, is challenging retailers to reevaluate their own business models. Online second-hand commerce has seen significant growth in the person-to-person platforms such as Ebay, Offerup, Craigslist, Leboncoin and Finn (Padmavathy, et al., 2019). The US in particular has seen a surge in thrift retail. A study from Global Data expects the US consumer goods resale market will reach $51bil by 2023 (ThredUp, 2019).

4 METHOD

4.1 Research Design

4.1.1 Qualitative Approach

The discovery of answers through systematic procedures is core to the purpose of research (Berg, 2000). However, the creation of a research design which structures and organizes the process of a study is required in order to produce valuable findings (Kumar, 2011).

A quantitative research design is used to test large aggregates of data, and examine cause and effect relationships in a formal, objective and systematic process (Berg, 2000). However, quantitative studies which reduce human behavior to statistical aggregations risk developing conclusions which do not fit within reality (Berg, 2000). Conversely, qualitative studies enable researchers to capture unquantifiable factors such as symbolism, meaning and understanding. This is achieved by analyzing rich, dynamic data through the deduction of grounded and analytic themes and consideration of relevant theoretical explanations (Berg, 2000). Additionally, the aim of qualitative studies is to understand the perceptions and decision-making processes of others by exploring social settings and their inhabitants (Berg, 2000).

The basis of our research questions lay in sociology as they aim to acquire an understanding of how retailers perceive and react to their social reality.

Main research question:

How can policy stimulate innovation and facilitate diffusion in the retail industry?

Secondary research question 1:

How are retailers responding to innovation and to what extent?

Secondary research question 2:

To what extent is policy effectively stimulating innovation & facilitating diffusion among retailers?

Thus, as our research involves understanding meaning related to particular persons of phenomena occurring with a social context and stems from an open-ended inquiry, rather than a hypothesis, this study is best suited for a qualitative research design.

4.1.2 Data Collection and Analysis

Qualitative data in the form of participant observations are often subject to biases which may threaten the validity of information provided. Additionally, researcher interpretation may be subject to error. However, a multi-operational data collection approach combines and relates information from multiple data-gathering techniques, for interpretation and analysis, so as to counteract potential biases (Fielding & Fielding, 1986). Further, this approach is best suited for capturing sociological explanations among the different levels of structure and agent on which social phenomena operate (Moran-Ellis, et al., 2006). Thus, we have chosen to use a multi-operational data collection approach for a thorough and more nuanced understanding of the dynamic social nature of our research questions. Additionally, we employ a multiple researcher technique whereby two researchers are involved in the collection, interpretation and analysis of data. Utilizing a team approach to process data further enriches perspectives and increases the likelihood of creative and astute observations (Hunter, et al., 2002).

Our content collection and analysis strategy for the primary data draws upon grounded theory, whereby tentative comparisons are abstracted from field data and linked to social processes in a theoretical way (Berg, 2000). Primary data insights were gained through discovery-oriented, semi standardized depth interviews and in-store observations. We developed a set of sub questions based on secondary research regarding the innovation in the retail industry which were used as the basis for interviews. (See "Interview guide" in appendix). All interviews, except for one, were audio-recorded and transcribed verbatim for analysis. Short-hand notes were constructed during and immediately after the interview with the participant who declined permission to be recorded. Interview transcripts and ancillary notes were reviewed several times by both researchers to clarify data individually and independently charted the for comparison. We then cross-examined the charted data as a means of "inter-coder reliability check", confirming the validity of interpretations (Berg, 2000).

In line with our multi-operational strategic effort of obtaining a multitude of perspectives, we collected supplementary primary and secondary data from representatives within local government departments and associations, as well as one shopping center, to supplement our primary retailer interview findings. These organizations and corresponding representatives

were chosen for their in-depth knowledge of policy procedures and motivations as well as engagement with retail industry would contribute to a more comprehensive understanding of the dynamic relationship between retailers and policy. Organizations engaged with include: Rogaland Fylkeskommune, Forus Næringspark, Næringsforeningen i Stavanger-regionen, Stavanger Sentrum AS and Arkaden Torgterassen.

In effort to expand our insights further, we needed to acquire additional information regarding the Norwegian economy, retail industry and policy. These secondary data insights were acquired via national public and private statistical databases, published organizational reports publicly published business information and published government documents. Additionally, theoretical literature research was conducted utilizing *Oria.no*, which provides access to established databases of scholarly articles such as Elsevier, ProQuest, EBSCOhost Business Source Complete, Wiley Online Library and SpringerLink.

Last, an integrative analysis technique was employed, whereby charted interview findings were combined with supplementary perspectives and secondary data in effort to produce a holistic account of the phenomena (Moran-Ellis, et al., 2006). The entire catalogue of information was rigorously and repeatedly reviewed, examined for patterns and categorized into concepts concerning perception of industry changes and challenges, perception of innovation, actual technology adoption, actual sustainability adoption, and perception of policy impact.

4.1.3 Scope

The scope of this research is centered on Stavanger City of Rogaland County in Norway. The selection site was chosen primarily due to the ease of the researchers' ability to obtain access to policy information and study participants

Maintaining the vitality of the city center is an important priority for the Norwegian authorities. As the retail industry has a significant impact on the ability to draw residents into town, focusing on the city center of Stavanger will contribute to a better understanding of accomplishing this goal. Therefore, our scope was further narrowed to the mainland area within zip codes 4005, 4006, 4012 and 4013 as a representation of the city center.

4.1.4 Sampling

The logic behind subject sampling is to make an inference regarding a larger population for which individual data collections is too cumbersome. Quantitative studies often employ a probability sampling strategy to select subjects, which is based on the idea that a sample selection can mathematically represent a larger population and often requires large-scale surveys (Berg, 2000). Conversely, qualitative studies such as ours examine phenomenon in which the large-scale and restricted needs of a probability sample cannot be accomplished (Berg, 2000). Therefore, to achieve our learning objectives, a nonprobability sampling technique was utilized, whereby we selected the sample based on research purpose and subject availability, as well as selective judgement which is further explained below.

Firm selection was limited to those within the retail sales industry. However, food and beverage product categories, such as restaurants and grocers, were intentionally excluded as they face a greater number of supply chain challenges which may have created a bias-altering affect in responses. Grocers in particular represent a 'primary need' category which is less susceptible to economic pressures and may have also created a bias in response data. Firm selection was further filtered to locations established in the Stavanger city center for a minimum of 10 years to increase the likelihood of informants being familiar with the local political landscape.

Of the remaining firms within the above specified criteria, we aimed to accumulate responses from businesses with varying organizational structures (independent/franchise, single-location/multi-location) and product category groups in effort to create a fuller representation of the retailing industry.

To gain an understanding of retailer response at the firm level, we selected representatives who are responsible for store operations within the senior management level and above. We further narrowed the retailer interviewee criteria to include only representatives with at least 10 years of experience in retail with the purpose of increasing the likelihood of interviewees being well-versed in industry operations and strategies.

Retailer Sampling

Store2	Participant	Relative Size	# locations	Structure	Product Category
Store 1	Regional Manager	Large	37	Chain	Clothing
Store 2	Owner	Large	26	Chain	Cultural/Recreational Goods
Store 3	General Manager	Medium	5	Chain	Household Goods
Store 4	Owner	Medium	3	Chain	Cosmetics/Toiletries
Store 5	Owner	Small	1	Independent	Cultural/Recreational Goods
Store 6	Owner	Small	1	Independent	Clothing
Store 7	Owner	Small	1	Franchisee	Cosmetics/Toiletries

Table 1: Retailer Sampling

In total we conducted interviews across seven retail firms, one shopping mall representative and four government representatives. Qualitative research requires consideration of characteristics of the study, the nature of the phenomenon under investigation, goals of the study and richness of the data (Baker & Edwards, 2012). As such, our sample size was limited in order to support the complexity of our objectives and depth of our analysis which required obtaining richly-textured information relevant to the phenomenon under our investigation.

The response to participation has been exclusively encouraging as our contacts have shown great interest for our topic. All interviewees exhibited positive, open demeanor and appeared comfortable discussing the topics addressed.

5 Primary Data findings

5.1 Industry changes and challenges

Retailer participants agree that the dynamics of competition have changed however, there is some variation in the level and direction of concern among respondents. The greatest threat conveyed by respondents lies in maintaining business vitality amidst the change in competitive landscape. Many use terminologies along the lines of "*survive in the fight against the big ones*."

More than half of the respondents are of the opinion that big box stores and other large chains will continue to gain market share, over taking smaller shops. A few believe shopping centers are a driving force behind this trend, giving preferential treatment to larger competitors. One of the respondents mentions competing for space in malls is difficult due to high rental prices and the prioritization of higher turnover rates produced by bigger stores. Respondents who are part of a chain also stress the issue of pinched margins due to excessive discounting conducted by larger chain retailers.

Many respondents expressed a concern with over-establishment in the retail industry, citing the increase of chain stores and big boxes has led to high density among product categories as many chain stores have multiple locations within Stavanger city center and the immediate surrounding area. Further, the chains are said to offer much of the same items as incumbent retailers. Two of the respondents question the extensive development and rebuilding of shopping malls in order to get more stores, claiming their method for filling the malls contributes to increased density of stores within the same product category without fulfilling any missing consumer needs.

Five of seven retailers identify an industry-wide shift toward the specialization of stores among small and medium enterprises (SMEs). This is not surprising as all of the retailers interviewed are themselves classified as specialized retailers and feel their particular choice of product assortment is a key differentiator among competitors. Nearly half of respondents are utilizing a product exclusivity model whereby they offer either only the firm's own products or seek out brands with limited distribution. A majority of respondents explicitly express SME retailers who don't move toward specialization will lose out to large chains or big box stores.

The popularity of e-commerce is not lost on retailers, but its perceived industry impact varies. A majority of retailers have implemented some form of online sales into their business model. The establishment of online shops is relatively new among many in this group and widely

regarded as a "necessary evil" to maintain market share. One medium sized retailer described the store's online sales as a completely separate entity, referring to it as a direct competitor:

"And what is difficult is to know is how big of a proportion our physical stores miss because they shop in the online store… it is interesting to see how much is cannibalism."

Despite some hesitance toward e-commerce, retailers confirm the channel comprises a notable share of business, averaging a little over 10%, a figure which is expected to grow. Respondents generally recognize convenience and accessibility affects purchasing decisions. One retailer notes even customers located only a few minutes walking distance from the shop places orders online and requests delivery. Another retailer explicitly identified consumer emphasis on fast delivery yet has the highest average wait time for direct delivery and in-store pickup at four days.

One retailer, a single location entity, did not consider digital sales integration to be an appropriate fit for the business model, arguing products must be experienced in person prior to purchase. Two retailers place heavy emphasis on the power of physical interactions and the ability of in-store associates to provide product expertise, arguing consumers do not achieve the same satisfaction with online purchases. One retailer likened e-commerce to a fad, stating *"I think there will be less e-commerce eventually."*

Notably, two stores explicitly state they do not have any competitors, at least none who they feel are encroaching on their market share. Yet one of these retailers cites "lowest prices" as a top demand from customers, which inherently implies the existence of at least one concerning competitor. Only one retailer notes the increase in interest for second-hand stores or person-to-person sales platforms.

Though physical stores are still viewed as the primary touch point for consumers, many retailers are quick to note the utilization of the internet, mobile devices and social media in the shopping experience. Retailers agree, increased access and quantity of information available has made consumers more knowledgeable, selective and subsequently more demanding.

5.1.1 Perception of Innovation & Innovative Activity

The demand for premium customer service, noted by all, is translated into a need for enhanced in-store experience which retailers aim to meet by focusing on superior product

knowledgeability and in-store attentiveness among their sales staff. Interestingly, many retailers note a failure among peers to provide quality customer service.

Only three retailers go beyond transactional services to offer experience enhancement opportunities. One retailer offers traditional, passive experiences in the form of "customer nights" whereby customers are invited to an off-hours event at the shop to passively participate in a product presentation or demonstration once per quarter. Only two retailers offer a more immersive experience, both of which utilize a service value-add concept to actively engage customers and enhance experience. None of the retailers interviewed reported any form of customer involvement in service process development. Two retailers, one of which is a larger chain, didn't seem to grasp the concept of an enhanced experience and when pressed, reverted to describing product assortment.

Many retailers struggle to respond when asked about innovative practices and often provided conflicting thoughts. For example:

> "Innovative and innovative…[pauses to think] *We have been the way we are for many years, but we feel that we have a breadth, which is much larger than everyone else, and knowledge, so I think we score a little there. I hope at least."*

Shortly after this response, the informant refers to the retailing business as an exciting, yet challenging venture for which "keeping up with the times" is important.

Deferring to product breadth or newly released items when probed about innovation was a common occurrence. This aligns with the assertion that manufacturers are viewed to be the initiators for innovation in the industry.

Further, responses such as this demonstrates both the compatibility and complexity elements of (Rogers, 1983) innovation assessment. Retailers are confused about technologies and how they fit into their existing business models.

5.1.2 Technology adoption

In general, retailers seem unaware of the extent to which technology can benefit business practices. Only the most ubiquitous, consumer-facing technologies (website, email and social media) have been widely adopted, of which retailers only scratch the surface of their usage potential. All retailers interviewed, except for one, have established a company website which displays the product catalogue and store location information. In regard to social media, all retailers have established a presence however, none are taking advantage of the opportunity to

actively engage with customers and gather valuable intelligence. Rather, social media posting is utilized as traditional advertising mechanisms to blast generic promotional messages, most of which is unedited content provided by brand partners. Utilizing social media as a customer service enhancement tool is another missed opportunity. Larger retailers have a slower average response rate on social media, with an average reply rate at up to 1 day, versus smaller shops who respond within a few hours. Larger retailers do employ a chat feature on their respective websites, which may explain the slower social media response times. However, as these chat applications are manually operated and only available during standard business hours, they offer little added customer benefit.

The use of internal technologies is limited and discontinuous among retailers. For instance, a majority of retailers do not manage customer information beyond basic accounting systems. Two retailers only collect historical data for online purchases. Another firm manages its customer loyalty program entirely offline, manually recording customer transaction histories in a register book. Of those who do collect some form of customer information, it is used for distributing e-newsletters with product announcements. Again, this is a largely missed opportunity for the collection of valuable insights as well as operational efficiency improvement.

None of the retailers interviewed are utilizing self-service technologies, mobile applications or mobile payment options in-store. However, a majority of stores mention an interest in implementing mobile payment technology should Vipps develop a feasible solution. Internal technology beyond internet-based systems and transaction registrars are not mentioned. Overall, the minimal use of these ICT technologies such as data collection and/or customer service tools is notable given the relatively low trialability costs associated with these technologies.

However, there is one exception, a retailer who is part of a larger chain. This firm puts emphasis on data collection and the opportunity to gain insights as well as develop customized product suggestions delivered via email. This firm is also the only retailer to integrate transactional and inventory data between online and offline systems.

5.1.3 Sustainability adoption

Surprisingly, the smaller retailers are a bit more responsive to sustainability innovations. These retailers have adopted corporate social responsibility into the supply chain which focus on environmentally-friendly materials and fair-trade manufacturing. The largest chain retailer

also makes claim to sustainability adoption via the initiatives of its parent entity. However, the remaining retailers fall short in this category.

Of the five retailers who sell online, two do not offer the option to pick up purchases in store. Four retailers charge at least four times the fee for home delivery option, three of which advertise using a "climate neutral" partner. One retailer mentioned concern for home delivery shipping as the resulting increase in individual deliveries is both inefficient and harmful to the environment.

Small retailers aside, the low-level of sustainability focused strategies and innovations is particularly interesting given the country's relatively high emphasis on green initiatives. However, one retailer implies green policies which aim to minimize private transportation are trivial.

"I am generally very little afraid of the car, as the center is now so car-free already. So now they work for people not to be able to get to the periphery by car. I am strongly opposed to that. I am biased for this is my livelihood, but at the same time, from a personal perspective, I can't see how we can manage to maintain an effective society if we are to get rid of the car. And now the electric car is on its way in, which means that I really do not see the problem, I find it childish the whole thing, but that is another discussion."

This resistance to green initiatives may be a result of an abundance of green initiatives already in place. The cumulative result of which makes it difficult for retailers to see how additional actions are beneficial.

5.1.4 Perception of Policy

As noted above, retailers are primarily concerned to with policies aimed at reducing the use of private transportation. Many interviewees believe the increasing cost of parking and reduction of availability is driving customers away.

The implementation of toll stations surrounding Stavanger city center and the rush hour fee is a hot topic among respondents, but not one on which they all agree. Some retailers are merely annoyed by the hike in toll prices, describing the impact as an unpleasant but short-lived adjustment period. Others insist the implementation of the toll system is keeping customers out of the city center, pushing them toward suburban shopping centers and online stores. This effect is noted by some to be exacerbated by a lack of sufficient public transportation. While retailers seem to accept the consequences of these regulations, many imply a reduction in the

cost of tolls and parking would improve business prospects. Interestingly, one retailer notes the past fiscal year (which experienced a new toll booth implementation and rate increase), was the store's best performance to date.

Retailers are in general looking forward to the abolishment of the duty-free limit of 350 NOK on imports. Two retailers indicate they expect to see sales increase as a result.

Two other retailers, both multi-location operations, lament the tax burden on new business establishments. One retailer describes this as "*a wealth tax that causes companies that do not make money to pay dividends that they really do not have a basis for paying*", ultimately putting businesses and jobs in danger. The other retailer explains no one is interested in investing in retail, putting a heavy financial risk on owners looking to expand.

6 The Norwegian Innovation System

6.1 Economic conditions

The Norwegian economy is experiencing moderate and broad-based growth while the registered unemployment is at the lowest it has been for ten years. In the national budget for 2019, the government continues policy that facilitates continued growth, restructuring and the Green Shift (Meld. St. 2, 2019).

In 2018 the total value creation in the business sector was 3,140 billion NOK equivalent to a GDP per capita of 665,378 NOK. Statistics Norway predicts a 2 percent increase in GDP for 2019, 3.1 percent increase from 2019 to 2020 and 2.2 percent increase from 2020 to 2021 (Statistics Norway, 2019n).
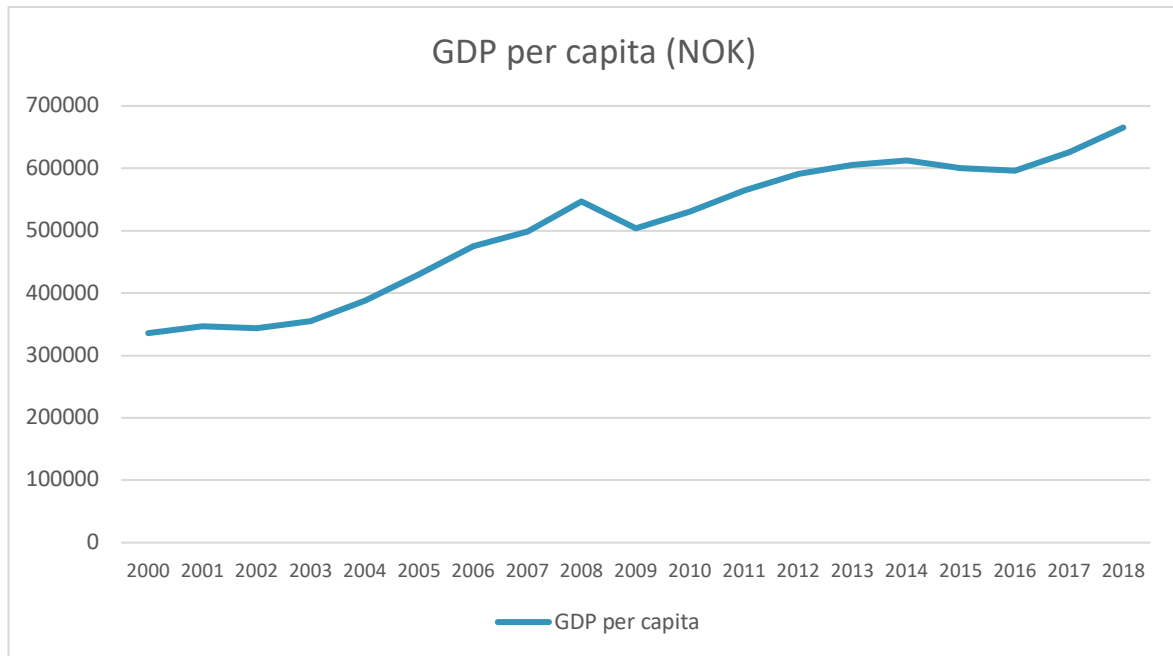
Figure 2: GDP per capita development 2000-2018 (Statistics Norway, 2019l)

6.2 Population and Employment

By the first quarter of 2019, the number of inhabitants in Norway was approximately 5.3 million (Statistics Norway, 2019k). In recent decades, Norway has experienced strong growth in population due to high net immigration, relatively high fertility and a smaller share of elderly persons. Growth is expected to flatten out over the next ten years before hitting a decline due to an increase in the aging population. However, the population growth is expected to be positive and reach 6 million by 2040 (Statistics Norway, 2018m).

Figure 3: Inhabitants and employment 2000-2018 (Statistics Norway, 2019j).

Millennials account for one third of Norway's population and represent the largest generational group in the country, followed by the older, more afflue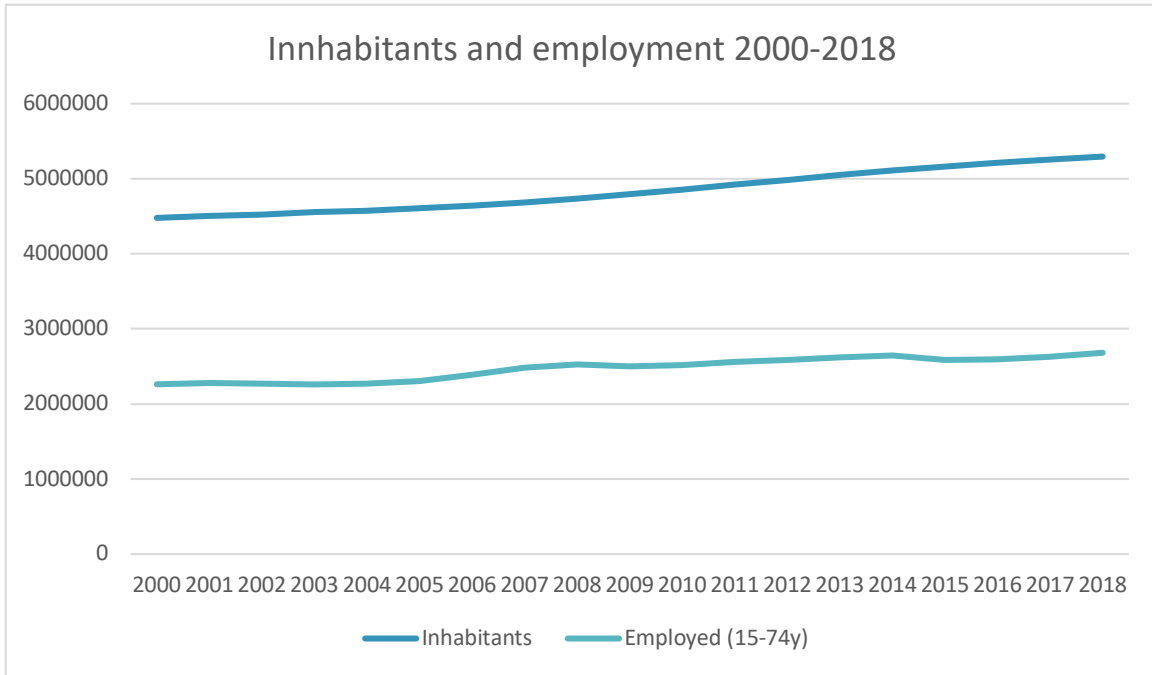nt group Generation X. This age distribution is reflected on both the country, county and city level (Statistics Norway, 2019i).
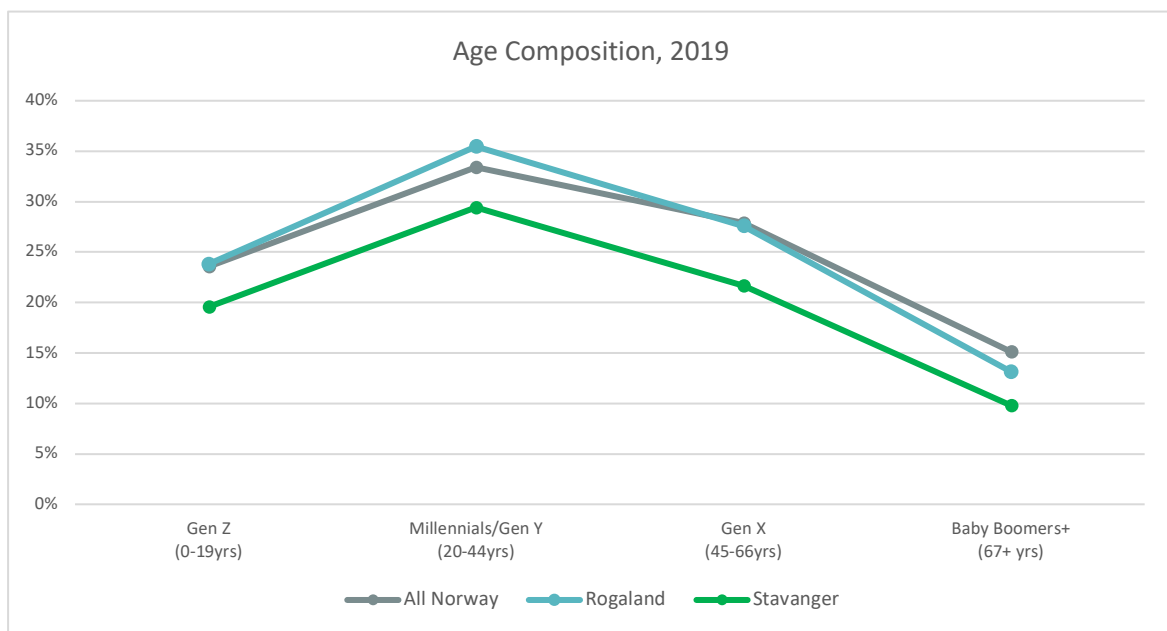

Figure 4: Age composition (Statistics Norway, 2019i)

In the 4th quarter of 2018, 67 % of the population in the ages between 15 and 74 years were employed (Statistics Norway, 2019). 78% of employment is in the service sector (commerce, public services etc.), 20 % in production (industry, energy etc.), and 2% in the primary industry (agriculture, forestry and fishing). Health and Care is the sector with highest employment and the second largest producer in terms of gross product. Oil and Gas is the sector with highest production, but it is the second lowest sector in terms of employment. Merchandise is the second largest employer and third biggest producer in terms of gross product (Statistics Norway, 2019k).
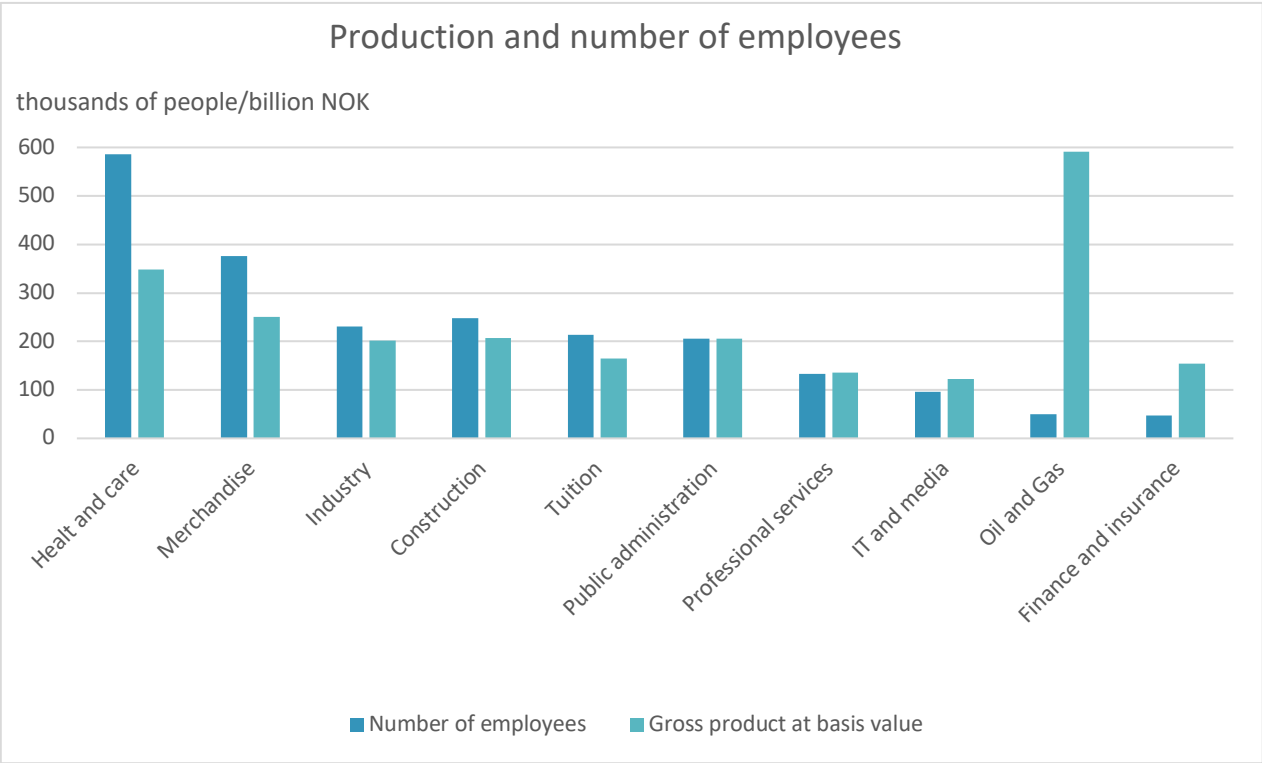
Figure 5: Production and number of employees 2018 (Statistics Norway, 2019k; Statistics Norway, 2019i)

6.3 Income and purchasing power

Household income in Norway has experienced a steady incline over the past decade. Stavanger has generally followed this trend, with the exception of a slight dip in 2016 (Statistics Norway, 2019g). Nationwide, wage earnings are expected to increase a little over 3 percent annually through 2020 (Statistics Norway, 2019f).
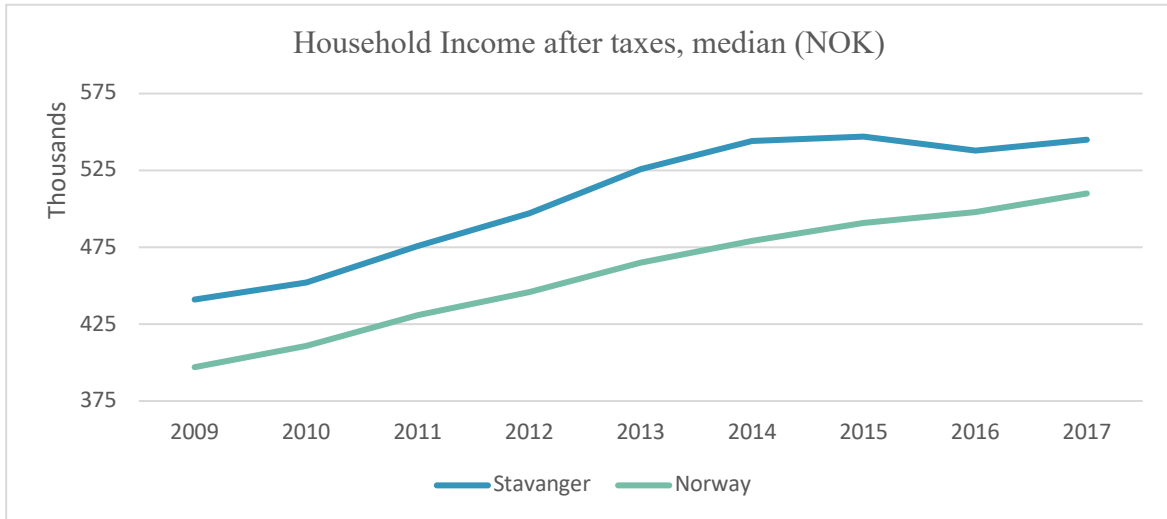
Figure 6: Household Income after taxes (Statistics Norway, 2019g)

The annual change in consumer price index (CPI) has fallen significantly from 2016 figures however, it is back on the rise. Statistics Norway forecasts CPI annual change to reach 2.3% by the end of 2019, then plateau through 2022 (Statistics Norway, 2019e). Electricity prices are also increasing; this combined with rising interest rates may curb consumption growth, despite rising wages (Statistics Norway, 2019f).
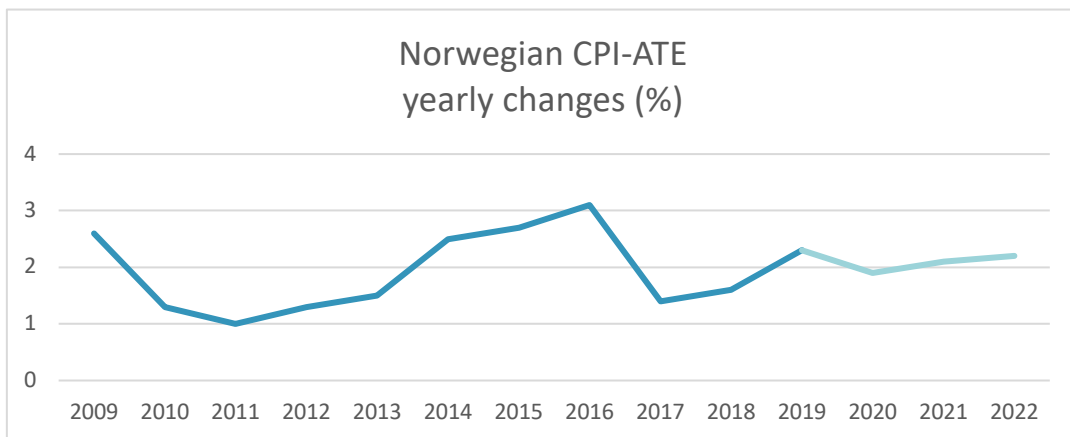
Figure 7: Norway CPI-ATE Yearly changes (%) (Statistics Norway, 2019e)

CPI-ATE is CPI adjusted for tax changes and excluding energy products
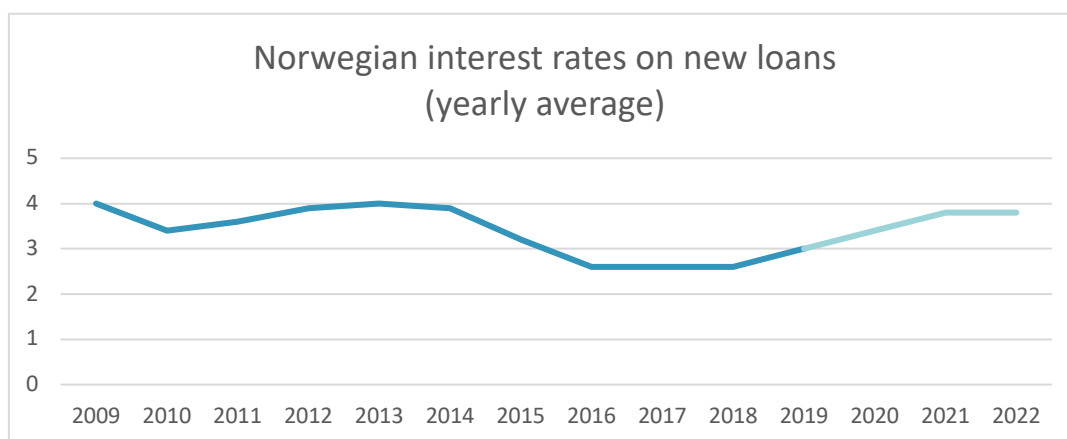
Figure 8: Norwegian interest rates on new loads, yearly average (Statistics Norway, 2019e)

6.4 Innovation and Competitiveness

Of 140 economies, Norway ranks as number 16 at the Global Competitiveness index that measures the national competitiveness defined by the set of institutions, policies and other factors that determine the level of productivity. The index is based on the following 12 pillars presented with Norway's rank in parentheses: Institutions (8), Infrastructure (45), ICT adoption (10), Macroeconomic stability (1), Health (9), Skills (8), Product market (29), Labor market (14), Financial system (23), Market size (50), Business Dynamism (9) and Innovation capability (20) (World Economic Forum , 2018).

The last two pillars represent the Norwegian Innovation Ecosystem and consists of several index components ranked on a scale from 0-100. In Innovation Norway ranks on 18th place when combining all innovation components. The lowest rankings of the Innovation measures compared to the other countries is 49th place on "Attitudes toward entrepreneurial risk", 40th place on "Diversity of workforce" and 38th place on both "Insolvency regulatory framework" and "Growth of innovative companies" (World Economic Forum , 2018).

The innovation performance of Norway is mixed, partly due to the structure of the economy. However, the Norwegian innovation system is characterized by a strong research institute sector despite being heterogeneousness and fragmented. The R&D institutes in cooperation with industry are the key performers of the innovation system and play a large role in the internationalization of research and Innovation. Further, the R&D support system is well-developed, although seemingly better suited to support existing strengths, than new sectors and areas of diversification (OECD, 2017).

6.5 Retail Value Creation

The retail industry in Norway is a significant contributor to the country's employment and economic value creation. According to a report from Virke (2018) trade contributes nearly 10% of the total value creation of goods and services in Norway, totaling 222 billion NOK in 2017.

6.5.1 Turnover & Growth

Total turnover reached 543 billion NOK in retail sales in 2017, up 14% versus 2018 (Virke, 2018). Food, beverages and tobacco make up the biggest category in turnover however, growth in retail is mainly attributed to e-commerce, which experienced the greatest growth in both volume and value. Internet sales is also the top growth category of the past decade, followed by tobacco products and second-hand goods.
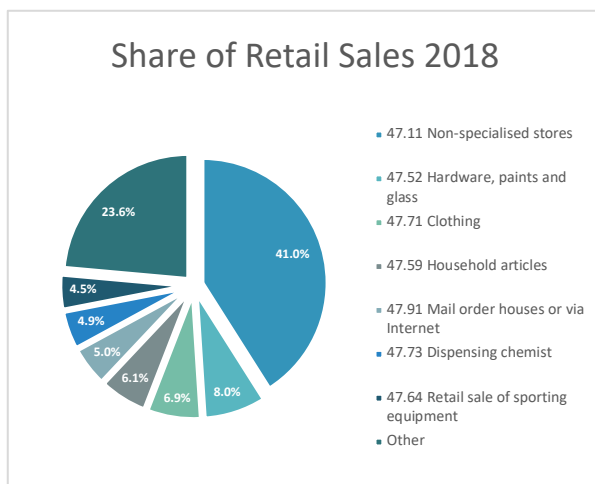
Figure 9: Norway share of retail sales, 2018 (Statistics Norway, 2019a)
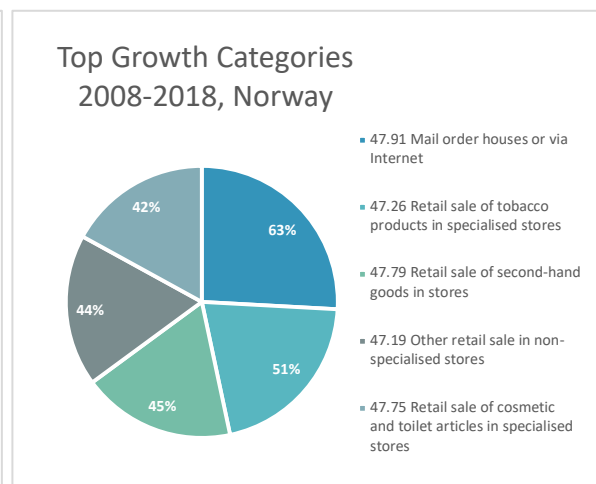
Figure 10: Norway top growth categories 2008-2019 (Statistics Norway, 2019a)

While the country continued with steady growth, retail sales turnover in Stavanger slowed then hit a plateau from 2014-2016. This is likely due to the large number of businesses and employees in the oil and gas industry which reside in Stavanger being impacted by the Oil Crisis. Sales appear to be picking up with a slight upturn in growth over the past two years, reaching nearly 11 billion NOK in 2018 (Statistics Norway, 2019a). Overall, turnover in the city is up 16% versus 2008. However, in terms of turnover per capita growth, Stavanger falls behind both the national average and top 5 cities average.
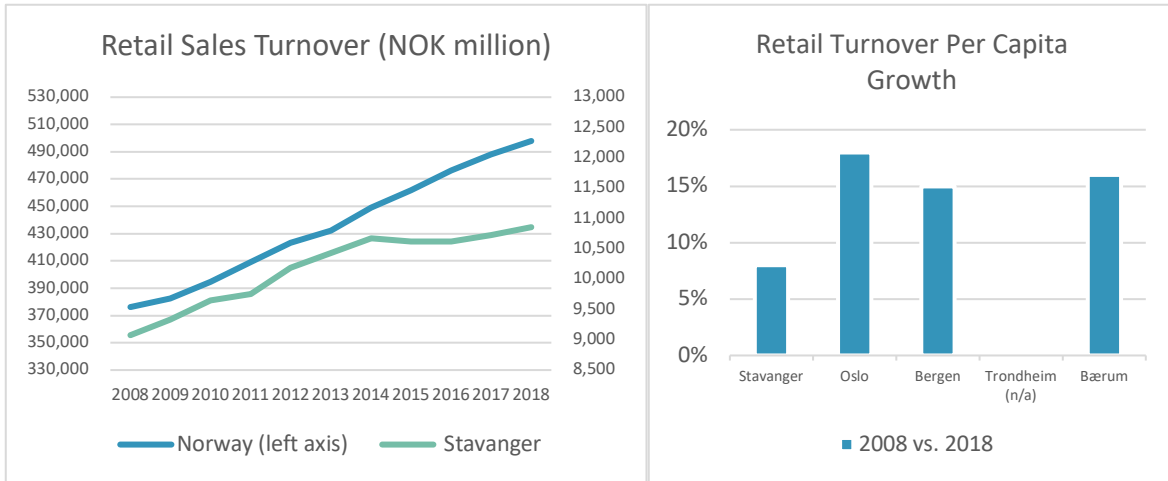
Figure 10: Norway retail sales turnover, NOK million (Statistics Norway, 2019a)

Figure 11: Norway retail turnover per capita growth (Statistics Norway, 2019a)

Retail sales volume index also experienced a small dip in 2016, but has now returned to its long-term upward trend.
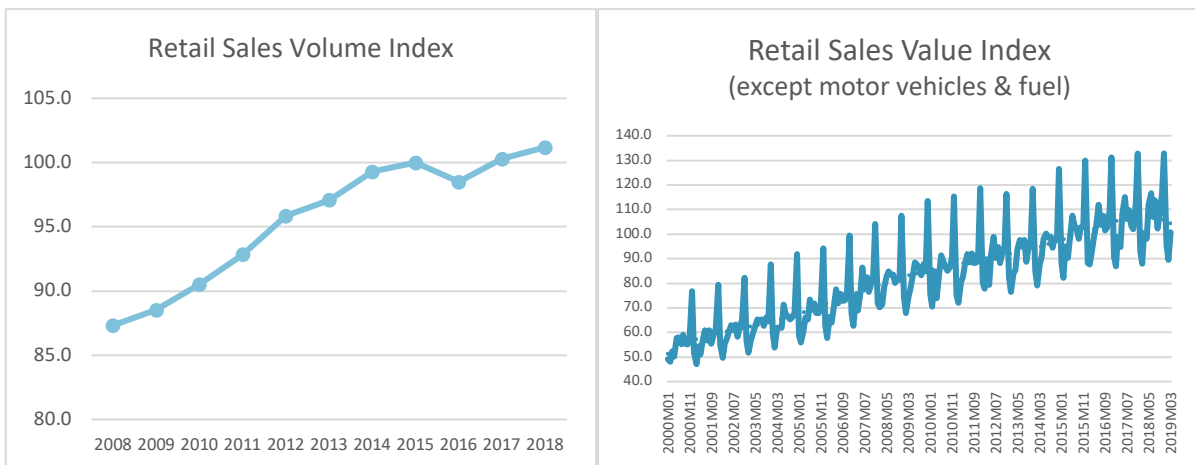
Figure 12: Norway retail sales volume index (Statistics Norway, 2019d)

Figure 13: Norway retail sales volume index (Statistics Norway, 2019d)

6.5.2 Investments in retail

Investments in the retail industry have experienced a ten-year trend of weak development, with investments roughly 50% lower versus 2008.
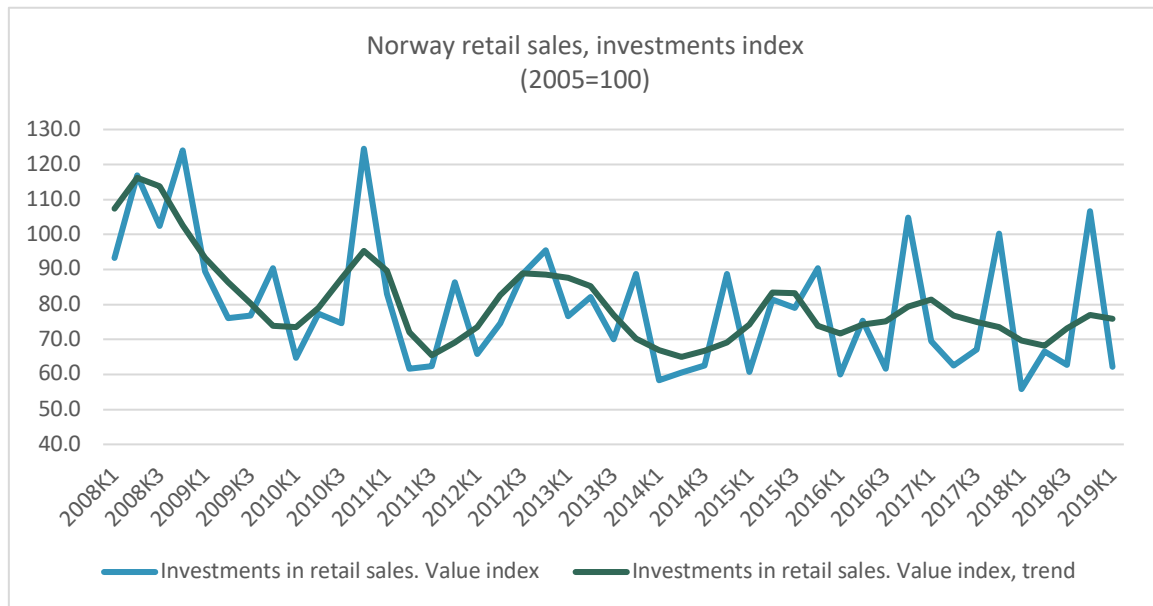
Figure 14: Norway retail sales, investments index (Statistics Norway, 2019c)

6.5.3 Employment

The trade industry employs over 13% of the country's workforce, making it the largest employer in the private sector with over 370,000 employees in 67,000 companies (Reed-Larsen, et al., 2018; Virke, 2018).

The retail industry is characterized by high employee turnover (Esbjerg, et al., 2010). Likely due to comparably low wages, a lack of esteem for the job (Booth & Hamer, 2007) and a largely transient workforce. The retail industry has generally served as a gateway into the work force for many youths, accounting for nearly one third of employment among workers aged 15-24 years (Statistics Norway, 2019b). Young employees are still the majority shareholders of retail jobs however, this share has been declining over the past six years. Conversely, the share of retail employees with higher education has been increasing (Statistics Norway, 2019b). This is likely due to the oil crisis and the subsequent employment reduction. A lack of available professional jobs would have kept people in school so they could use higher education as a differentiator. Increasing employment overall and decreasing youths employed in retail may indicate those who stayed in school longer are going directly into professional jobs (versus retail). Firms still shaken by crisis will want to hire cheaper labor as business builds back up. Additionally, the oil crisis may have put older, more educated who lost their professional jobs into the retail sector. This older group has likely stayed in retail because they have not reclaimed their professional job back yet, they have retired early or plan to retire soon.
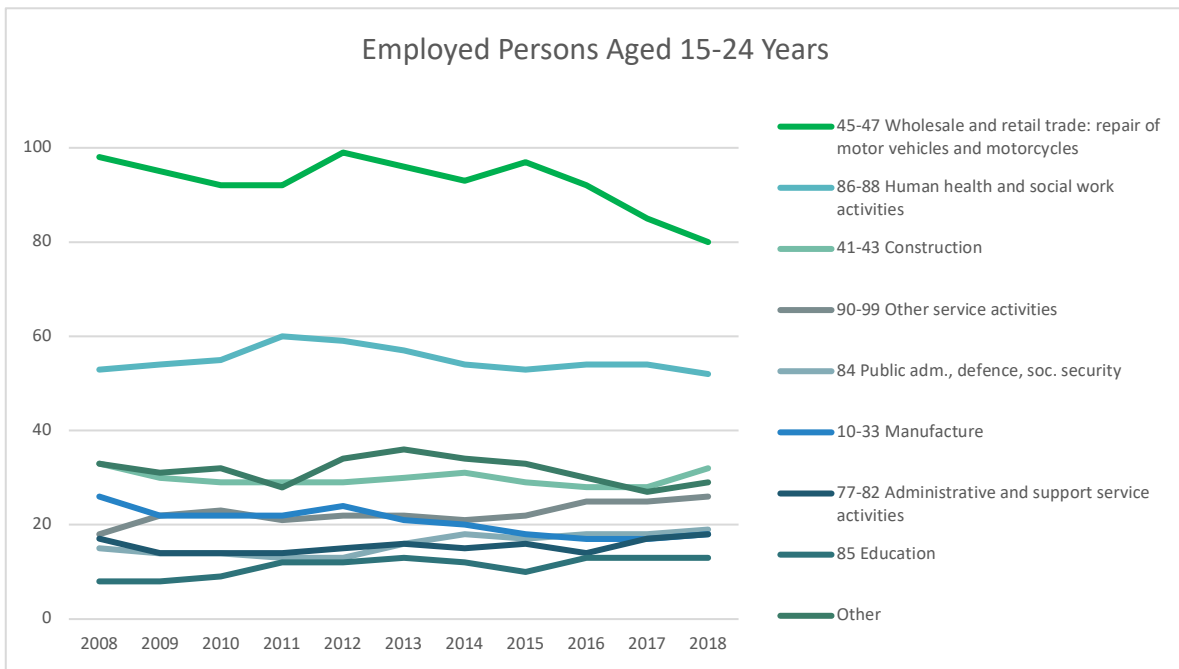
Figure 15: Employed persons aged 15-24 years (Statistics Norway, 2019b)
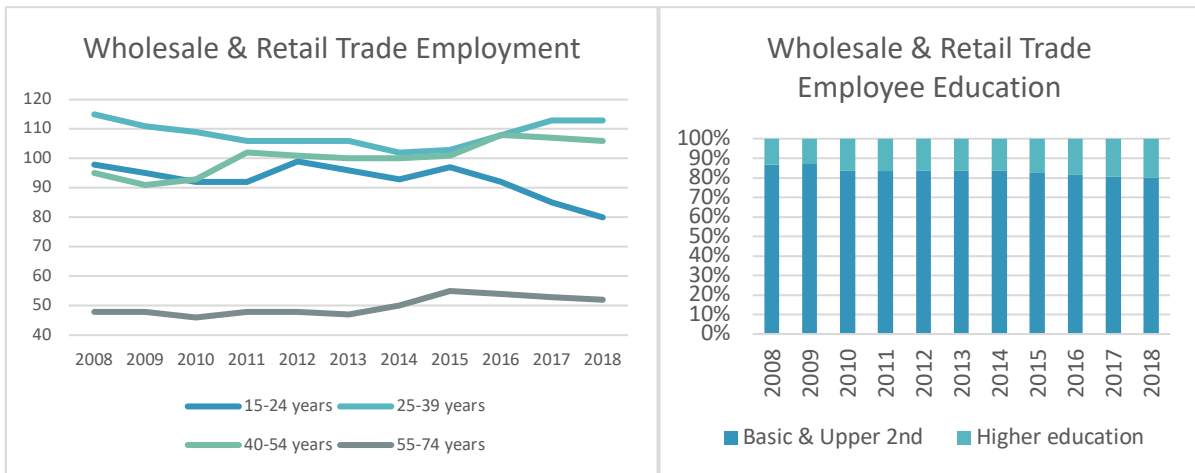
Figure 16: Norway wholesale & retail trade employment (Statistics Norway, 2019b)

Figure 17: Norway wholesale & retail trade employee education (Statistics Norway, 2019b)

Retail management generally lacks higher employees with higher education as it is one of few industries where it is possible to get a career without having a formal education. Higher education is generally substituted with experience as managers generally achieved their position through working up the ranks. A review of 50 retail stores posting a position for store manager, assistant manager, or sales manager on Finn.no (2019) shows less than a quarter of listings mentioning a need for higher education. Of those who mention higher education, roughly half say it is required but can be compensated for with experience, while the others simply mention it as an advantage.

6.5.4 Labor Productivity

Historically retail employment has coordinated with population growth and labor participation yet, despite a growing population and increased consumption of household goods, employment in the retail industry has been in a decline (Reed-Larsen, et al., 2018). This is due to the adoption of information and communication technologies as well as other labor-saving technologies which have increased labor productivity. Escalating growth in e-commerce, digital transactions and automated logistics is driving continued rapid development in technology solutions and consumer behavior, suggesting additional investments will be required to ensure retailers are able to adapt and maintain high level of productivity (Virke, 2018).

6.5.5 Channel Composition

While Norwegian physical stores still account for a vast majority of overall retail sales, it has experienced the weakest growth compared to other channels (Virke, 2018). In 2017, physical stores lost 7% of market share to online sales and 4% to physical purchases abroad (Virke, 2018). In total, e-commerce experienced a 9.3% increase in turnover from 2017 to 2018 (Statistics Norway, 2019a), a larger share of which stemmed from foreign online sales. Foreign online stores experienced the highest channel growth (18.5%), followed by Norwegian online stores (Virke, 2018). The emergence of a large number of trade network operators in Europe has reduced transportation costs of goods and increased the attractiveness of e-commerce (Toftdahl, et al., 2018).
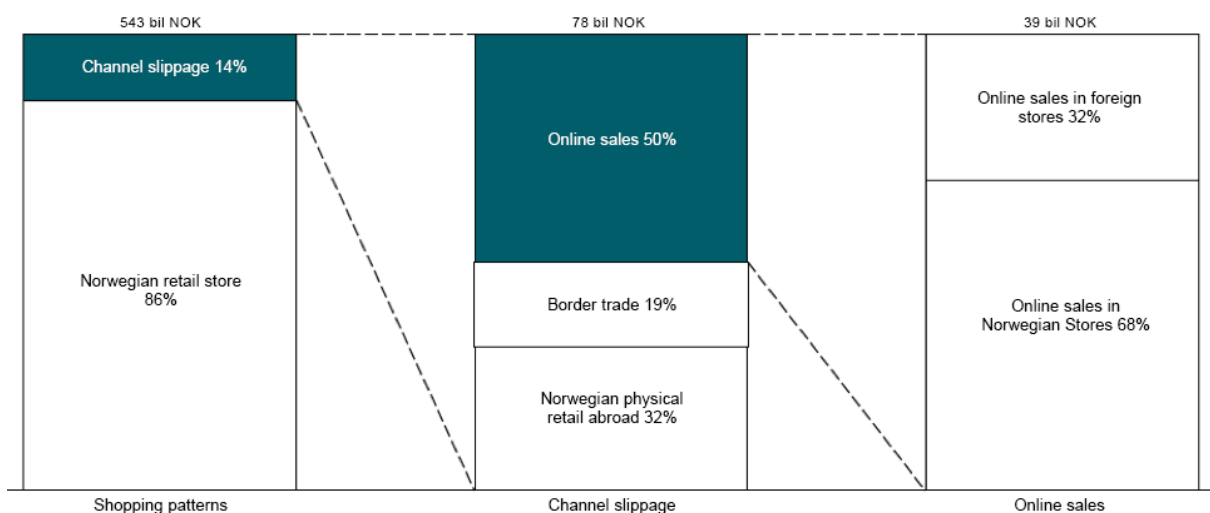
Figure 18: (Virke, 2018)

6.5.6 Growth Trend

Physical store net growth is suffering greatly, having declined roughly 9.4% from 2010 to 2016, while online store net growth has increased 33% (Virke, 2018). Since 2012, the compound annual growth rate for Norwegian physical stores increased just 2.4% versus 15% for e-commerce (Virke, 2018).
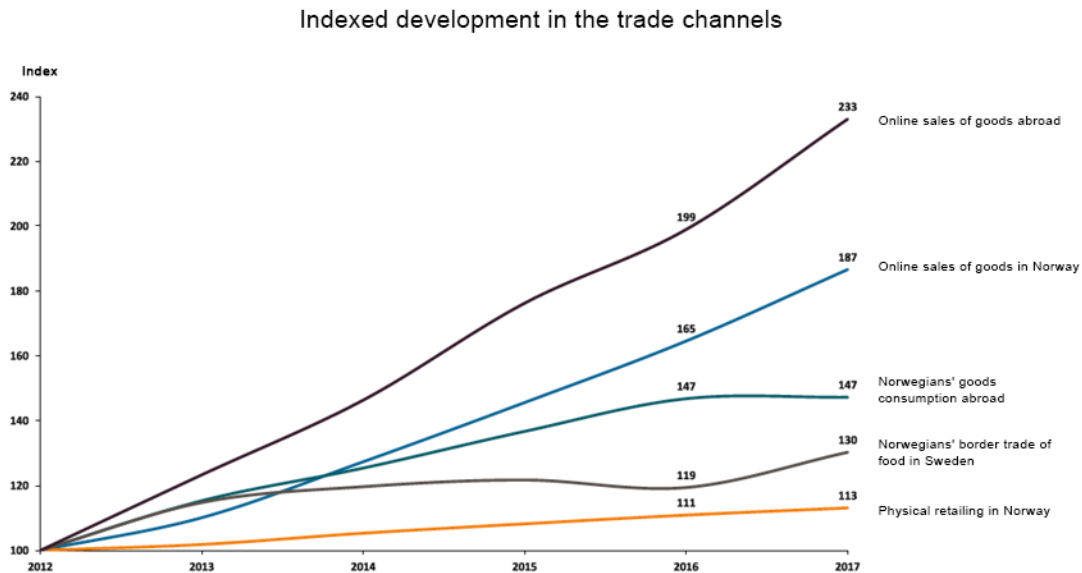
Figure 19: Indexed development in the trade channels (Virke, 2018)
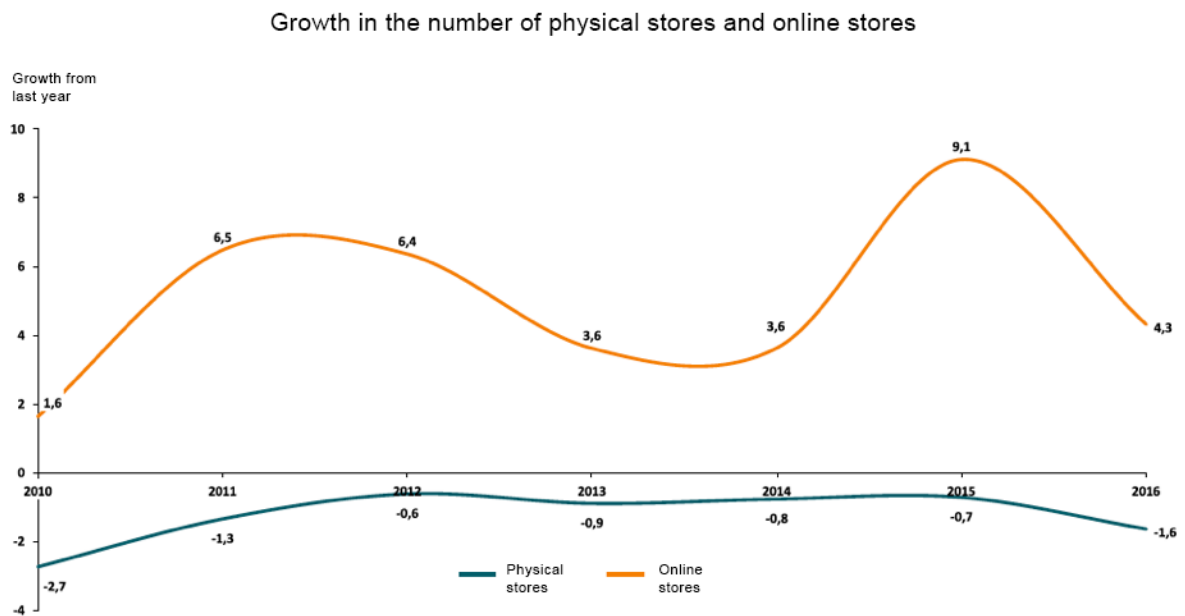
Figure 20: Growth in the number of physical stores and online stores (Virke, 2018)

In response to foreign pressure, more chain stores are trying to get in on the e-commerce action. Virke (2018) reports 68% of chain stores in Norway have both an online and offline presence, a figure which is expected to continue growing. Non-specialized (wide variety) chains in particular have experienced strong growth, increasing turnover nearly one third from 2013-2017 and achieving over 40% growth in store count from 2008-2016 (Virke, 2018). This industry is characterized by cost-effective value chains and competitive pricing. (Virke, 2018).

In Stavanger city center, chain stores account for 31% of retail business (Proff.no, 2019). Chains gravitate toward shopping centers making up just over half of the shops on average; chain saturation in city center's largest shopping mall is 84% (Proff.no, 2019).

Second-hand stores have seen a significant resurgence in spending over the past five years. Sales growth in non-specialized stores is a bit stronger than specialized stores, though both remain fairly steady.
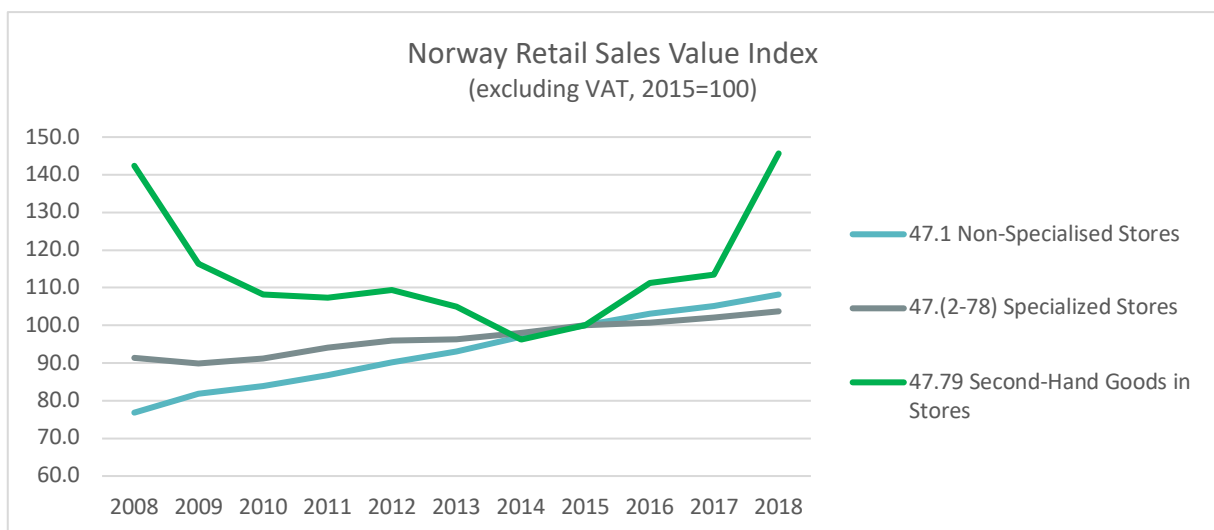
Figure 21: Norway retail sales value index (Statistics Norway, 2019d)

6.Consumer Behavior

6.6.1 Technology Usage

The vast majority of Norway's inhabitants are active internet users, most of which access it every day, primarily from a mobile device (Statistics Norway, 2019h). Time spent online has significantly increased over the past decade with users currently averaging nearly three hours online per day (Statistics Norway, 2019o). Behind e-mail, online banking is the second most common online activity, followed closely by goods and services information search (Statistics

Norway, 2019h). Norwegians are also avid social media users; 80% have an account and nearly all of which aged 16-54 use social media on a daily basis (Statistics Norway, 2019h). Social media's impact on the average consumer is growing, as made evident by the rise of influencer Nordic networks such as United Influencers and inzpire.me. A report from the Norwegian Consumer Council states social media is the most influential channel for younger citizens given the difficulty of distinguishing it from traditional advertising (Forbrukerrådet, 2019).

More than 90% of Norwegians use a smartphone, over half of which reportedly have it within reach for at least 20 hours per day (Santander Trade, 2019; Statistics Norway, 2019h). Smartphones are highly utilized in the consumer purchase process both online and offline. Four out of ten online purchases are made via smartphone and roughly one third of consumers report using their phone in-store to research a product (PostNord, 2019).

E-commerce has become commonplace among Norwegians. 89% report shopping online averaging two purchases per month and approximately 13,000 NOK in total retail sales revenue each year (Statistics Norway, 2019h) (Statista, 2019). Growth in online shopping is expected to continue in all age groups as an increasing proportion of the population adopts digital buying habits across commodity categories (Virke, 2018). The combination of increasing online purchases and mobile phone usage has resulted in a large number of ecommerce apps and mobile-optimized websites (Santander Trade, 2019). Clothing and footwear are the most common items purchased online, followed by a tie between home electronics and media (PostNord, 2019).
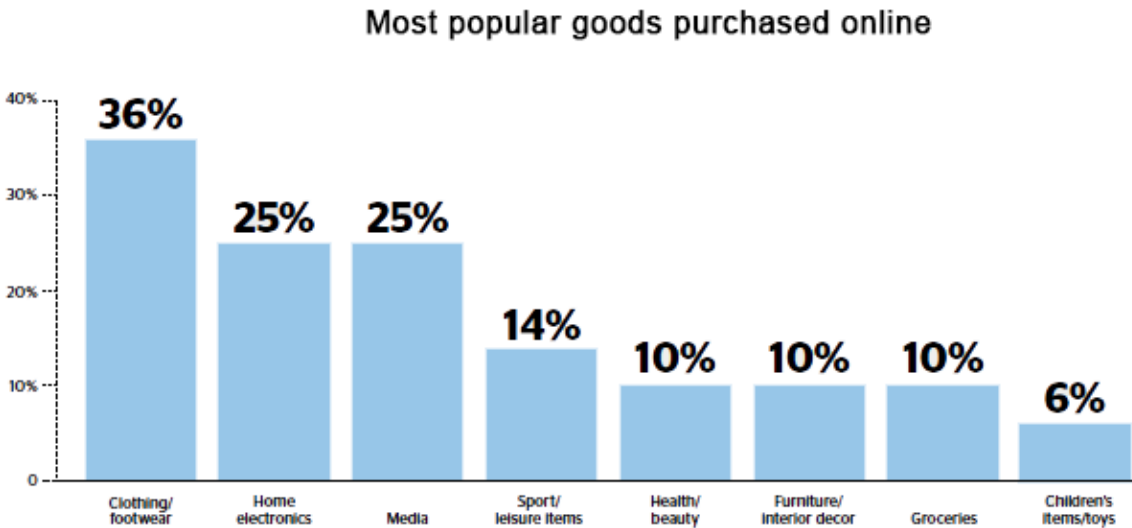
Figure 22: Most popular goods purchased online, Norway 2018 (PostNord, 2019)

While debit and credit cards still represents the majority of online purchase payments, the share of bank transfers and e-wallet payments is 42% (PPRO Financial Ltd, 2017) and expected to keep growing (Statista, 2019). The use of mobile payment systems is on the rise; Vipps in particular has significantly increased in popularity in just the past two years (PostNord, 2019).

Choosing when and where online purchases will be delivered is very important to Norwegians. According to a survey by PostNord (2019), choosing a delivery date was ranked the most important factor when selecting an online store to purchase from, closely followed by free shipping. Over half of goods purchased online were collected from a service point, 28% home delivery and just 2% collected from the webshop's physical store (PostNord, 2019).

6.6.2 Social Responsibility

Finn.no is Norway's largest marketplace for buying and selling online. The value of the postings on the site is approximately 530 billion a year and the site has on average 5.8 million unique browsers per week (2017). The biggest user market is South- and Western Norway with 31% of the users (Schibsted, 2019).
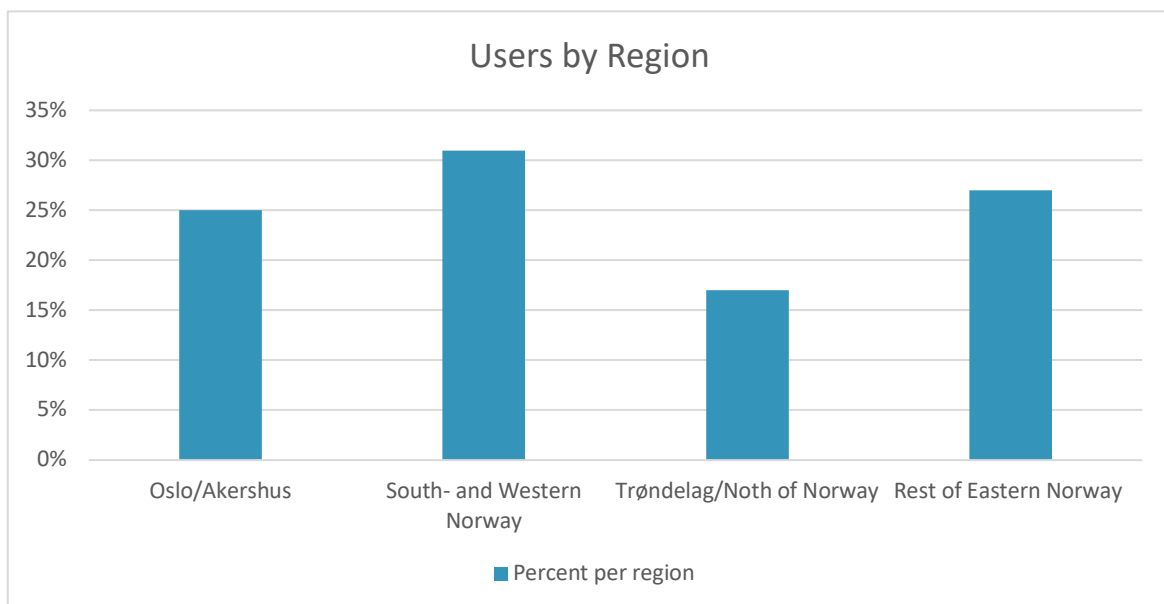
Figure 23: Finn.no users by region (Schibsted, 2019).

The users are relatively evenly distributed by age. The largest user group is people between 40-49 years (21%), while the smallest group is people between 12-19 years (10%).
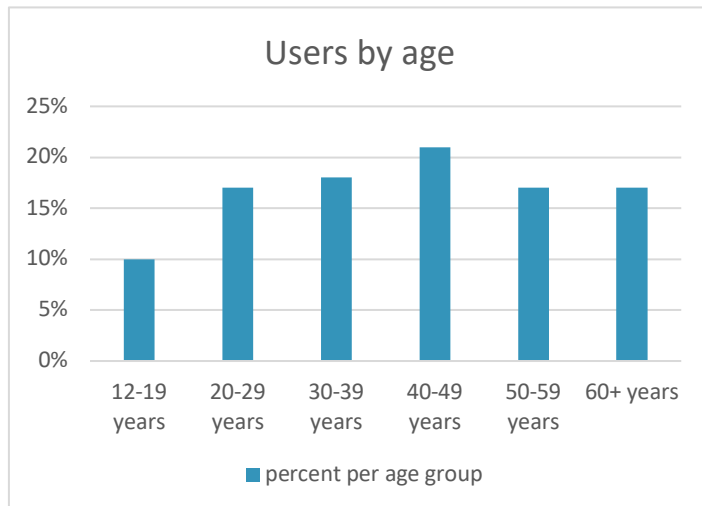
Figure 24: Finn users by age (Schibsted, 2019).

The mobile app "Tise" was introduced in 2016 with the goal of making reuse something fun and inspiring. By offering a new marketplace for resale and inspiration for reuse, the app reached 400.000 users by the end of 2018. (Statistics Norway, 2019j) The users connect the service with having a clear social voice within sustainability and Tise being an important environmental actor (Kampanje.com, 2019). In 2017 the app won "Marketer of the year" at MFO CASE with their effective marketing using influencers, such as their creative leader and partial owner, Jenny Skavlan (Shifter.no, 2019).

7 Norwegian Politics and Policy

7.1 Overall National Objectives

The Norwegian economy is mixed, although strongly influenced by the countries' high efforts within the sectors of oil and gas (O&G), fisheries and aquaculture. These efforts have contributed to shaping the country into one of the richest in Europe.

The financial crisis in 2008-2009, the drop in the oil prices in 2014 and global climate changes has led to the need of restructuring the economy. According to OECD (2017) Norway is now facing a "triple transition imperative" to face these challenges: 1) A shift towards a more diversified and robust economy, 2) Moving towards a more competitive, effective and efficient innovation system, and 3) Improving research efforts and quality of higher education.

Following this, the Government's priority areas for 2019 are:

1. Restructuring the Norwegian Economy.
2. Fulfilling Norway's climate commitments.
3. Create an inclusive working life.
4. Ensure good welfare schemes.
5. Reduce poverty.
6. Carry out an integration lift.
7. Security and preparedness.

7.2 Policy

The Norwegian policy system is comprehensive, and covering all policy, regulations and laws that can be related to retail would end up with the thesis getting out of scope. In the following sections we focus on current policies that is directly related to retail and innovation.

7.2.1 Trade and Innovation Policy

The Ministry of Trade, Industry and Fisheries is responsible for policy regarding Trade, Industry and Fisheries as well as coordinating and developing the overall innovation policy.

Generally little direct attention has been given to the retail sector in trade policy. Nevertheless, acknowledging that the retail landscape is changing and the challenges with foreign online competition and border trade for national retailers has led the Government recently introducing some policy measures to support the retail sectors competitiveness: Firstly, the Government has decided to abolish the duty-free limit of 350 NOK for imports of goods. A measure that will come into effect by January 1st, 2020. (Meld. St. 9, 2018-2019). Secondly, the Government is reconsidering the increased sugar fee that was introduced January 1st, 2018 as a health measure as it is believed to be the reason for a significant increase in the border trade. The revision of the policy will possibly first be included in the state budget for 2020 (The Ministry of Finance, 2019; NHO, 2019).

There is no specific research and innovation policy directed at the retail, service and trade sector as the purpose of the research and innovation policies is to create overall value creation independent of industry (Meld. St. 9, 2018-2019). The purpose of the innovation policy is to promote and facilitate innovation, both in the private business sector and in the public sector. According to the Norwegian government, some of the most important policy areas in this

respect are education policy, research policy, regional policy, energy policy and environmental policy (Nærings- og fiskeridepartementet, 2019).

7.2.2 Education Policy

The Ministry of Education and Research is responsible for education, research and integration policy. The Ministry's goals and focus areas are concretized through the *Long-term plan for research and higher education.* The overall goal of the plan is threefold: 1) Strengthen Norway's competitiveness and ability to innovate, 2) meet major societal challenges, and 3) develop outstanding academic environments (OECD, 2017; Mld. St. 4, 2018-2019).

The changes that retail trade is facing as a consequence of increased digitalization, automation and changing competition can contribute to reducing the industry's ability to employ unskilled workers as the need for competence and education amongst the employee's changes (Meld. St. 9, 2018-2019).

The government has high ambitions for Norway as a knowledge nation, believing that high quality in all stages of the education system provide competent employees and great conditions for innovation and value creation. Digital conversion require new competencies and the Governments goal is that everyone should be qualified for a changing working life due to digitalization and new technology. Through initiating a new competence reform "Lifelong Learning" the Government seeks to develop the right tools and incentives in order to make individuals, as well as businesses invest in competence and education (Meld. St. 9, 2018-2019; Regjeringen, 2018).

Further, the Government wants to change the carrier-oriented training structure of the secondary education system. As part of this, a new Sales, Service and Tourism education program will be established, giving more relevant, specialized training directed to trade before getting practical experience. Finally, the Government wants to strengthen the vocational education for the vocational schools providing educations relevant for trade, such as retail management (Meld. St. 9, 2018-2019).

7.2.3 Sustainability and Environment

Two of the main challenges of today is climate change and loss of natural diversity. The restructuring (Green Shift) the country needs to go through in order to face these challenges affects all sectors of the society. The Government considers the UN's sustainability goals as

central to solving the global challenges and has signed up to undertake the obligation of reducing greenhouse gas emissions with at least 40 percent in 2030 compared with 1990. The Government want Norway to be a pioneer in the development of a green, circular economy that better utilizes resources (Meld. St. 9, 2018-2019; Meld. St. 2, 2019).

The Ministry of Climate and Environment has the main responsibility for carrying out the environmental policies of the Government. In Meld. St.41 (2016-2017) *«Klimastrategi for 2030 – norsk omstilling i europeisk samarbeid»* the Government presents its overall strategy for reaching the climate targets for 2030.

The government wants the retail sector to contribute to the green shift by promoting new business models, make demands on the supply chain, help consumers make green choices and facilitate sustainable consumption. The government states transport and waste as the two main areas where the sector can influence emissions directly and indirectly (Meld. St. 9, 2018-2019).

By selecting a team of experts for 16 different sectors, the government has published 16 different roadmaps for greener competitiveness. For the trade sector the map is called "*Veikart for grønn handel 2050*" and is managed by LO and Virke. The roadmap offers an overview of the trade sectors role in the green shift as well as identifying drivers and barriers for green restructuring of the sector:

Drivers and Barriers for Green restructuring and Innovation	
Drivers	**Barriers**
Risk: - Scarcity of resources and raw materials - Negative exposure or reputation loss - Increased expectations, needs and demands from the outside world Regulations: - Taxes and fees, claims and prohibitions - Positive incentive schemes Business opportunities: - Reputation and positioning possibilities; including attractiveness in the market as supplier, employer and investment object.	Knowledge and resources in small and medium-sized businesses: - Changes entail uncertainty and with consequences one not quite see the scope of. Fear of failure can quickly hamper decisions. Thus, it is easiest and more comfortable to continue as before – as long as it goes. - Recognizing that global challenges will affect the individual business Short-termism: - It can be difficult to plan long term. Too little, too late and too slow can be the consequence Availability Gap:

- Developing new concepts; targeting various market segments adapted to new market needs, with sustainability as an integrated part	- The consumers say that they want green products, but many retail actors experience low actual demand. Further these products are perceived as more expensive and less attractive Uncertainty: - Great public disagreement in environmental issues. Hard to know what is right to do which prevents action. - Lack of statistics and measurements of results. Policy instruments: - The trade sector has little tradition of using the existing policy instruments. Lack of incentives in the form of support schemes and differentiated taxes and fees that support green measures.

Table 2: Drivers and Barriers for Green Restructuring and Innovation (LO-Virke, 2016).

The road map explains the trade industry as a catalyst in the value chain. Contributing to reaching the climate goals through; 1) Their own business by energy effective measures, transport measures and waste handling measures, 2) putting pressure on suppliers, and 3) influence consumers on green consumption.

Further, the Government has enforced restrictions and regulation of product content, such as prohibiting or reducing the use of harmful ingredients or chemicals, as well as requirements for content declarations. In addition, the Government announces that a ban on disposable "one-time-use" articles such as plates, cutlery, q-tips and straws may be applicable within one year (Regjeringen, 2019).

7.3 Innovation Policy Instruments

When designing innovation policy, The Ministry of Trade, Industry and Fisheries cooperate with other ministries as well as other actors such as businesses, industry organizations and research communities. Of particular importance is the cooperation and management of the funding agencies such as the Research Council and Innovation Norway which channels a large part of the ministry's money to funding of innovation and research projects (Nærings- og fiskeridepartementet, 2019).

Preliminary estimates indicate that the public effort in research and development will be 41.6 billion NOK in 2019 which constitutes 1.14 percent of projected GDP in 2019. The cost of

research and development is estimated to nominally increase by 1.4 billion NOK from 2018 to 2019 (Prop. 1 S, 2018-2019).

Historically, many branch-oriented programs have focused on industry, paying little attention to the retail and trade sector, but in recent years research and innovation policy instruments have been open for more competition. In 2016 about 9 percent of the businesses who received support from Innovation Norway and Skattefunn came from the trade industry. Nevertheless, these are mainly related to industrial businesses such as wholesale trade of pharmaceuticals, as well as machinery and equipment to O&G and construction, not retail trade (Meld. St. 9, 2018-2019).

The Government wishes to continue the focus on business-relevant research and development with priority to the business policy instruments with the highest degree of innovation and efficiency, as well as focusing on the broad nation-wide schemes (Meld. St. 9, 2018-2019).

7.3.1 Innovation Norway (IN)

Innovation Norway is part of the public funding agencies for innovation and offers a broad business support system which includes competence, advisory services, promotional services and network services, as well as financial aid.

IN is the Norwegian Government's most important instrument for supporting and enhancing innovation and development within Norwegian businesses and industry. The organization is owned 51 % of the Ministry of Trade, Industry and Fisheries and 49 % by the county authorities. In 2018, the organization received a total of 4,1 billion NOK from the ministries and County Council to distribute for innovation projects and activities (Innovasjon Norge, 2018).

Proportion of funds granted from the Parlament and County Council for Innovation Norway, 2018 (MNOK)

- NFD (Ministry of Trade, Industry and Fisheries)
- LMD (Ministry of Agriculture and Food)
- FK (County Council)
- KMD(Ministry of Local Government and Modernisation
- UD (Ministry of Foreign Affairs)
- KUD (Ministry of Culture)
- KD (Ministry of Education and Research)
- SD (Ministry of Transport and Communications)
- KLD (Ministry of Climate and Environment)

Figure 11: Innovation Norway - Proportion of funds granted from the Parlament and County Council, 2018 (Innovasjon Norge, 2018).

Over 50% of IN's financial support was given out as grants in 2018, while the rest went to supporting innovation activities through loans and guarantees.
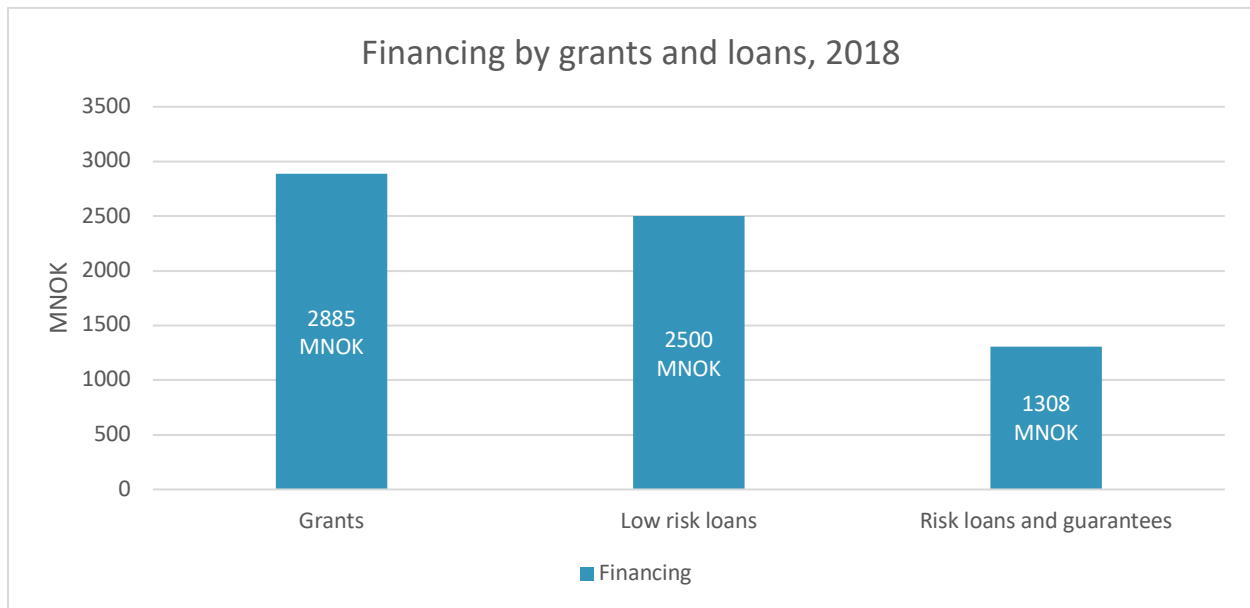
Figure 12: Innovation Norway - Financing by grants and loans, 2018 (Innovasjon Norge, 2018).

The figure below shows the distribution of financing by industry and programs.
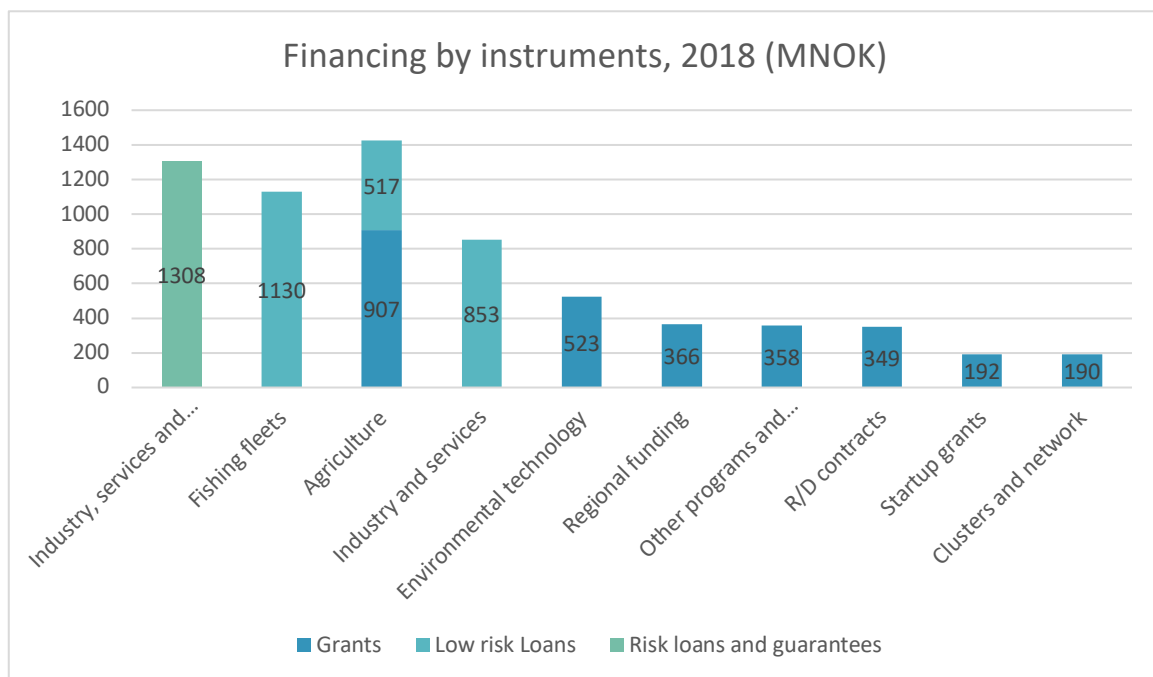
Figure 13: Innovation Norway - Financing by instruments, 2018 (Innovasjon Norge, 2018).

7.3.1.1 Innovation Norway's Funding Programs

Following is a table summarizing the funding programs applicable to retail:

Program	Who can apply?	Project Requirements	Funding	Evaluation
Environmental technology	Norwegian businesses of all sizes.	• The project must provide increased value creation in the form of new jobs, increased competence and competitiveness. • Innovative • International potential	Pilot plant: Up to 45% of project costs. Demo plant: Up to 60% of additional cost for the new solution compared to conventional solutions.	• Innovation degree • Environmental effect • Value creation • Feasibility
Innovation Contracts	SMB's in all growth stages developing new products or services	• The project is associated with significant market and/or project risk. • Collaboration with companies representing the market (Pilot customer). • International potential	Up to 45% of development costs of a pre-commercial prototype.	• Problem and solution • Scalability • Positive effects for environment and society. • Value creation in the form of competence and employment • Innovation degree • Feasibility
Commercialization	Start-ups younger than 5 years	• International potential • Defined market and tested the solution towards potential customers.	Up to 700.000 NOK to develop an economically sustainable business model from a rough outline.	• Adequate market acceptance. • Clear goals • Market and market potential clearly described

Table 3: Innovation Norway's Funding Programs

In recent years IN has contributed considerable funds to environmentally oriented projects. Examples are commercialization of environmental technology, improvement on

environmental quality of company's products, or projects resulting in companies being environmentally certified (Meld. St. 9, 2018-2019).

7.3.2 The Research Council of Norway

The Research Council of Norway is a national organ for research strategy and funding, and the most important research policy advisor for the government, ministries and other central research and development (R&D) institutions and environments.

From the annual report from 2018, approximately one quarter of the public R&D grants are allocated through the Research Council. All funds are gathered from the different ministries, with 75 % coming from the Ministry of Education, the Ministry of Trade, industry and Fisheries, and the Ministry of Petroleum and Energy. In 2018, the Research Council allocated 9,8 billion NOK for research and innovation (Forskningsrådet, 2018).
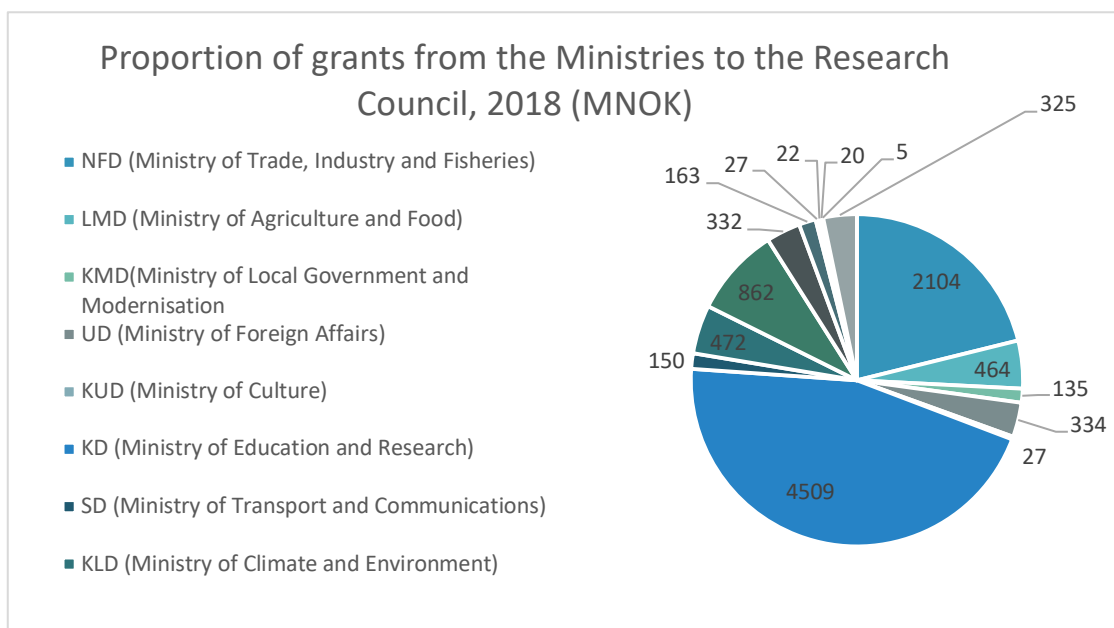
Figure 14: Proportion of grants from the Ministries to the Research Council, 2018 (Forskningsrådet, 2018).
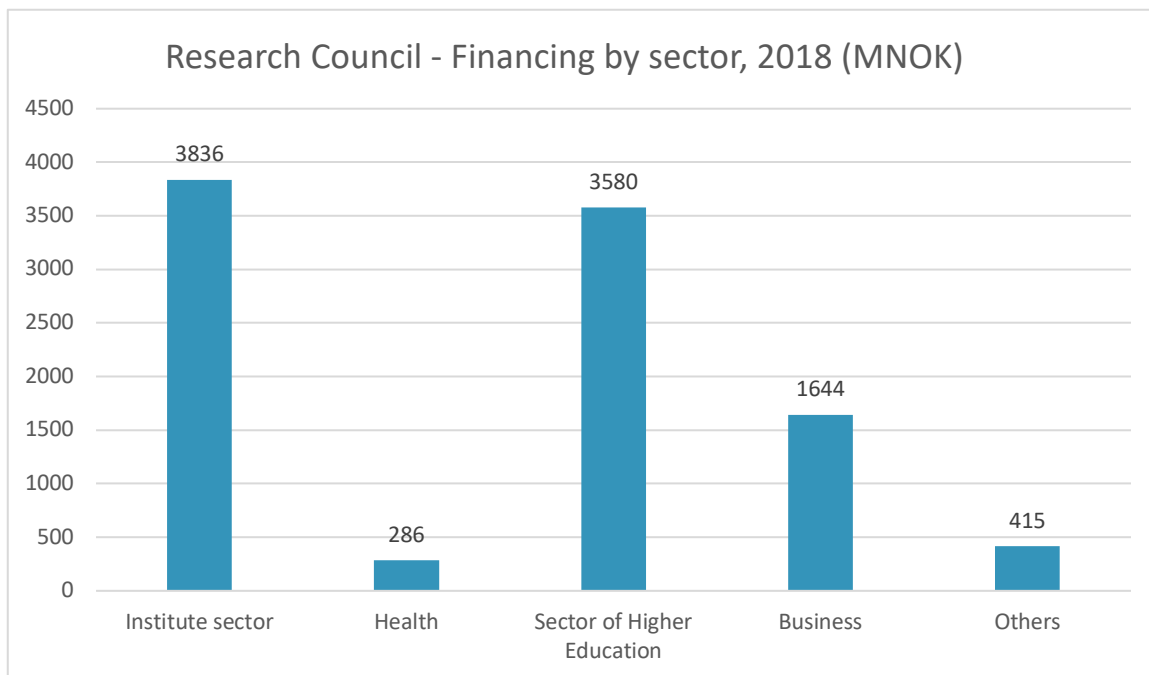
Figure 15: Research Council - Financing by sector, 2018 (Forskningsrådet, 2018)

The sectors that are highest represented in the Research Councils funding portfolio is the institute sector and the sector of higher education. Approximately 17% is distributed to the business sector.
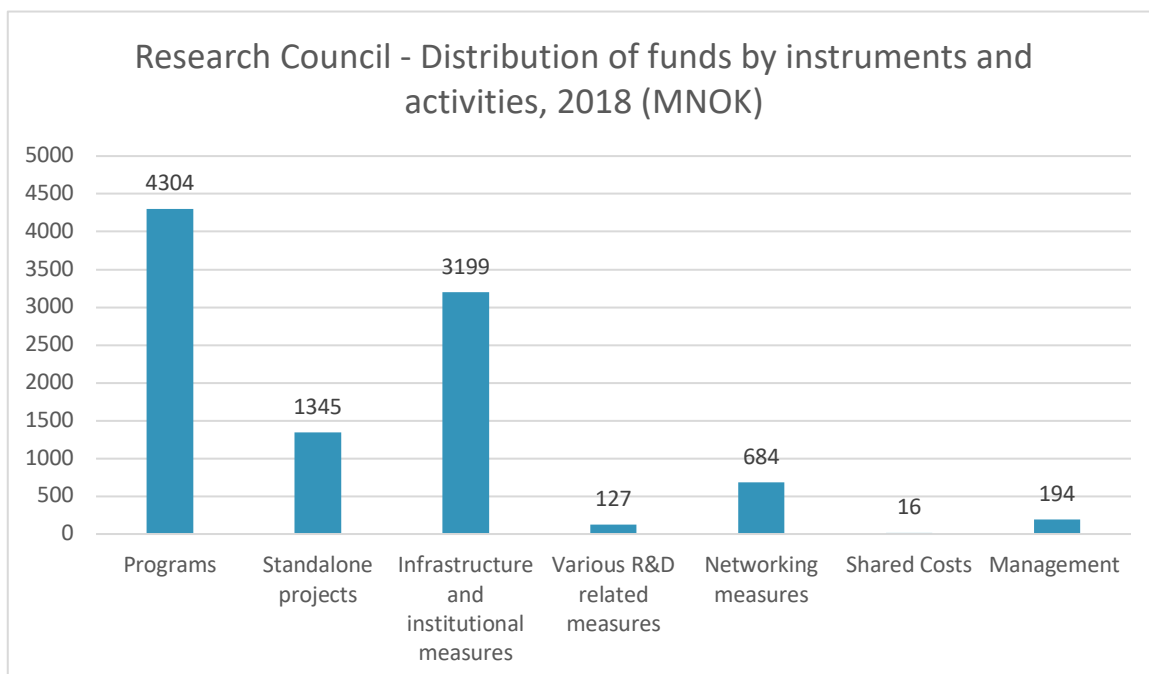
Figure 16: Research Council - Distribution of funds by instrument and activities, 2018 (Forskningsrådet, 2018).

Following is a table summarizing the funding programs applicable to retail:

Program	Who can apply?	Project Requirements	Funding	Evaluation
SkatteFUNN	Norwegian businesses of all sizes	- The projects need to be clearly focused and defined. - Developing a new or improved product, service or production process. - Goal of new knowledge and skills.	Tax refunds: 20% for small and medium businesses, 18 % for large businesses.	If the definition of Research and Development is met.
Innovation project in business and industry (Announced in 2019)	All registered Norwegian businesses	- Collaboration with other businesses - Needing new knowledge or technology - Have the necessary competence to run the project.	Support boundaries: 2 -16 million NOK	- Supporting the best research-based innovation projects. - Sustainability and value creation

Table 4: The Research Councils Funding Programs

The Research Council's selection of projects is highly assessed by the environmental impacts of the projects. This being projects that could lead to reduced climate and environmental footprint such as purification technologies, more environmentally friendly products and production processes, as well as more efficient resource utilization and management (Meld. St. 9, 2018-2019).

7.4 Regional and local policies

Rogaland County Council (Rogaland Fylkeskommune) is the public procurement authority for municipality plans and is responsible for county policies within economic development and regional planning.

The most important strategic tool for ensuring a good disposal and utilization of area in the region is the Regional plan for Jæren. The *Regional plan for Jæren 2013-2040* was adopted in

2013. As of the spring 2017, the plan has been under revision and a new plan proposal was made and put out for consultation and public inspection before 22nd of April 2019. *The Regional plan Jæren 2050* is now under political treatment and expected to be adopted in 2020 (Rogaland Fylkeskommune, 2019).

The new plan is focusing on a sustainable and adaptable region with particular attention to the following six priority areas and objectives: Lasting natural values, Viable neighborhoods, Vivid downtown areas, Simpler everyday life, Competitiveness, and Regional cooperation.

The regional strategies for creating a vivid city center is to attract activity to the center, avoid the spreading of center functions and ensure room for innovation in retail trade. The last being secured by paying attention to innovation in the retail trade and being proactive in facilitating concepts with positive synergies for social development (Rogaland Fylkeskommune, 2019).

The areal planning of the Stavanger-region has been discussed with multiple sources as it regulates where retail businesses can establish themselves. Retailers with space-consuming goods are allowed on Forus with the possibility of using maximum of 15% sales area for smaller goods, while general retail with smaller goods should be located to the city center and shopping malls. If too rigidly followed, these regulations can be harmful for the establishment of new retail concepts in the region and potential growth (Representative from Rogaland Fylkeskommune, 2019; Representatives from Forus Næringspark, 2019).

Our respondent from Rogaland Fylkeskommune expresses the importance of providing more flexibility in the system in order to allow for change, as well as having closer dialog with the retailer and chamber of commerce going forward. As the plans traditionally have long time perspectives and a lot can change in that time, he states *"we have to create a system where we have closer dialog so that we can make change must faster"* (Representative from Rogaland Fylkeskommune, 2019).

The Urban environment package is designed to contribute to better accessibility and urban environment in the Stavanger-region. The effort is made between the state, the county, the municipalities and the inhabitants with the goal of zero growth in passenger transport by car and reduced transportation in the city centers. The newly established toll stations are part of this work by contributing finance for more sustainable accessibility initiatives (Bymiljøpakken, 2019). Further, as part of the sustainability efforts towards more collective transportation, the use of instruments such as reduced parking and increased price of parking in the Stavanger city center has grown (Næringsforeningen, 2018).

7.5 Other Organizations and associations important for Stavanger

7.5.1 Stavanger Sentrum AS

Stavanger Sentrum AS is a traditional city-center association with members from different functions such as stores, restaurants and landlords. The association creates events and works as a voice for its members towards the authorities.

Our interviewee from Stavanger Sentrum stresses the importance of the attractiveness of the city, working in both directions by getting more people to work and live in the city in order to get customers, and working with the city's offerings in order to make people want to live and work here.

The association is getting extra funding in order to strengthen the city center trade, the project objectives are: 1) creating activities and events, 2) be a better host by creating a better service package, and 3) Storytelling; be better at telling stories of what is going on in the city and what it delivers. As a part of this Stavanger Sentrum AS wants to create a collective online store for its members (Representative from Stavanger Sentrum AS, 2019).

7.5.2 Næringsforeningen i Stavanger-Regionen

Næringsforeningen i Stavanger-Regionen is the country's largest business association and chamber of commerce, offering a number of services to the business community. The association is working to secure business interests and ensuring the qualities needed for people wanting to live and work in the region. Different resource groups work with local challenges throughout the region and the association is the region's largest meet and seminar organizer (Næringsforeningen, 2019).

The business association has selected seven strategic focus areas for the period 2016-2020 (Næringsforeningen, 2019):

1. Infrastructure
2. Competence
3. Housing and job attractiveness
4. Energy
5. The borderless region
6. New opportunities
7. Sea industries

The resource group for Stavanger City Center engages in issues such as accessibility for people, transport, parking and terms for the retail trade.

7.5.3 Virke

Hovedorganisasjonen Virke works as a link between employers in the service industry and the authorities. With 21,000 member companies from different sectors the organization works to secure businesses competitiveness and their interests in politics, as well as offering support for businesses in their daily activities (Virke, 2019).

Virke has been a large contributor to our data collection through the organization's work on "Handelsrapporten 2018/2019" and "Veikart for grønn handel 2050".

8 Analysis

8.1 Review

After a comprehensive review of the Norwegian innovation system, national and regional policy and the retail industry, we identify technology and sustainability as the two main drivers of innovation for both retail and policy.

As we have seen, the results of the financial crisis, the decline in oil prices and global climate changes are forcing the need of restructuring the economy; moving towards a more diversified economy, a more competitive, effective and efficient innovation system, and improving research efforts and quality of higher education. Further, global competitive pressure, fluctuating purchasing power and social responsibility is reducing consumer wallet size as well as share of wallet, making innovation even more important for retailers.

Despite retail being a large employer and contributor to the total value creation in mainland Norway, as well as being an important contributor to the attractiveness and activity within the city center, little attention has been given to the sector by the authorities in policy development. Although technology development and sustainability concerns are changing the retail landscape, there remains a lack of willingness to change and initiate innovation effort within the local retail sector.

In this section we identify the retailer's challenges in terms of technology and sustainability and discuss how these challenges are affecting their innovation capabilities. Additionally, we

examine the limitations to current policy and policy instruments which discourages retailers from exploiting opportunities to increase competitiveness.

8.2 Diffusion of Innovation

8.2.1 Technology

The loss of sales in Norwegian physical stores to e-commerce and increased usage in mobile assisted transactions confirms a shift in consumer behavior toward a preference for digital purchases. Yet the retailers interviewed are widely unresponsive to the technology challenge, generally missing out on opportunities to take advantage of innovative technologies, such as integrated customer database systems and mobile applications, to create engaging experiences which prevent further loss of market share to international competitors.

Drawing on Rogers' (1983) typology of adopters, we find a majority of retailers interviewed fall into the category of late majority and laggard technology adopters. Only one retailer represents the early majority class, and none are identified as innovators or early adopters.

Based on our findings, we've determined two key causes behind this lag in innovation adoption. The first is the existence of a cognitive block which is causing retailers to deflect both the need and the responsibility of innovation. The second cause pertains to insufficient resources which contributes to both risk aversion as well as inabilities to innovate due to lack of tools, insights and knowledge.

8.2.1.1 Cognitive block

A majority of retailers had little to say about innovation in technologies, indicating they are either unaware or uninterested in technological innovations. Some retailers seem locked-in to their current operational strategy, lacking the openness and flexibility required for innovative environments.

Many of the interviewees we spoke with are owners of well-established businesses, the success of which appears to be blinding. As Chesbrough (2010) points out, the success of established business models strongly influences the dominant logic used by firms to assess new information and technological potential. However, following this logic too strictly can cause firms to pass on valuable technology uses which conflict with the current business model. Therefore, continued success may be reducing retailers' motivation to innovate and take risks (Porter, 1990). Further, the Great Recession and Oil Crisis is clearly still prevalent

in the minds these retailers and success in surviving these economic hardships as well as general firm longevity is contributing to strategic persistence (Debruyne, et al., 2010). In other words, retailers are denying the need modify their business strategy.

Retailers' resistance to change is made evident by a tendency to deflect the responsibility of innovation. In lieu of technology options, many retailers are responding to competition by emphasizing their existing "innovative" product assortment and superior product knowledge strategies. This dependence on the production sector aligns with retail innovation literature: heavy focus on innovation within the manufacturing sector of the retail industry has led to reduced innovative capacity among retailers. This is further exemplified by retailers' tendency to use manufacturer developed content in their marketing strategy as well as waiting for transaction suppliers to develop a solution for implementing Vipps mobile payment.

Similarly, retailers defer to socio-environmental conditions as the cause of performance struggles. For example, the cost of transportation is commonly cited as a driver behind reduced transactions. However, historical data from Stavanger Sentrum AS (Representative from Stavanger Sentrum AS, 2019) shows the implementation of tolls and subsequent rush hour fees produced negligible effects on foot-traffic within the city. The association also conducted an experiment to test the impact of parking costs on city center visitors and found that despite availability of free parking at the edges of town, visitors continued to crowd more central, paid parking options. Further, parking availability remains scarce during popular visiting hours against increasing hourly fees.

Additionally, many retailers view increased competition as an inhibitor to business development, implying more control over shopping mall and chain establishment would prevent future loss of market share. However, domestic competition plays a crucial role in economic progress and international competitiveness (Porter 1990). In addition to providing consumers with better prices, competition forces firms to invest in new solutions to improve quality and efficiency in order to remain viable. As a result, firms are more robust and better able to cope with foreign competition.

8.2.1.2 Insufficient Resources

Though all respondents appear confident in their business model strategy, multiple uses of terminology such as "hard times" and "many who did not survive" occur in retailer responses. This indicates retailers are still a bit shaken from the recent economic depressions. Additionally, the potential for curbed consumption is likely making retailers wary of

economic stability. For smaller retailers in particular, access to financial capital is a significant factor in firm performance (Grimmer, et al., 2018). Wariness of economic stability and concern for maintaining profitability present among retailers is likely resulting in an unwillingness to invest in technology innovations for fear of becoming financially vulnerable should economic conditions suddenly plunge. This corresponds well with literature which states that economic uncertainty is commonly translated to increased financial risk premium which leads firms to delay or forego investments, especially as initial gross margins for emerging technologies are typically lower than those of established systems (Chesbrough, 2010; Gilchrist, et al., 2014). Additionally, the learning curve experienced during the implementation of a new technology within a firm and associated sunk costs may be more difficult for retailers to overcome. Further, not all technologies integrate smoothly. For instance, many retailers report increased losses associated with upgrading point-of-sale technology (Davis, 2006). Larger retailers also exhibit financial anxiety when expressing concern regarding tax burdens on new location establishments. This financial anxiety is further evident by the declining rate of retail investments across the country.

8.2.2 Sustainability

The global concerns for climate changes has resulted in a higher focus on sustainability for consumers when making purchasing decisions. This results in changes in demand that retailers must consider in order to stay competitive in the changing retail landscape. First, consumer's sustainability efforts lead to a shift in demand as they are looking for more sustainable options, and secondly consumer's sustainability efforts lead to a decrease in demand for new products.

8.2.2.1 Shifting demand to more sustainable options

As consumers are getting more conscious in their purchasing behavior, the demand is shifting towards products that are more sustainable.

It is no longer enough having a pretty store, nice product offerings and excellent customer service as consumers seeks information beyond what first meets the eye. The focus of transparency is increasing, and this relates to the whole value chain; where the products are coming from, what they are made of, how they are made and how they are delivered.

Only one of the retailers we interviewed had a clearly visible sustainable profile. Two retailers mention efforts to support fair-trade and reduced transportation in their delivery

system. Among the remaining retailers, the lack of expressed concern for sustainability challenges appears to be a result of limited knowledge and resources, leaving retailers unclear about how it will affect their business. Moreover, they might not have experienced the consumer demand for sustainable product first-hand or have miss-attributed the issue to other factors such as parking or tolls, making it hard to see their own role towards the Green Shift as the challenges are not currently visibly affecting their business.

8.2.2.2 Decreased demand for new products

Sustainability concerns decreases demand for new products as more consumers fulfill their needs in other ways.

The market for used products is increasing which results in increased competition for new products. It's no longer the case that Fretex and other second-hand shops are mainly associated with customers with poor purchasing power. It has become increasingly common to buy used products. More and more platforms for buying and selling things we don't use has emerged in the recent years and big bloggers and influencers, such as Jenny Skavlan, contributes to these trends becoming more widespread.

In general, the retailers we interviewed seems to have a narrow view of who their competitors are. Only one of our retail respondents expressed concern about re-commerce trends for retail businesses which reinforces our view that retailers have a cognitive block inhibiting them to respond to these market changes.

The majority of the retailers have the potential of significantly increasing their sustainability efforts, both incremental improvements as well as radical changes to their business model as a result they are missing out on a significant opportunity to increase competitiveness.

8.3 Policy assessment

8.3.1 Innovation

One of the largest goals of the national authorities is restructuring the economy into being more diversified and robust in order to be more adaptable to the technological development and climate changes. Although, supposedly innovation policy being industry neutral, it is not debatable that some industries are more represented than others when looking at where the majority of policy instruments are directed. It can be argued that existing innovation policy is

more suited to support of existing strengths and radical innovations, rather than having a more incremental approach were all sectors are included in achieving the national objectives.

8.3 2 Education

The retail sector has long traditions of employing youths and people without formal qualifications leading to the sector functioning as a gateway to first-hand working experience. To strengthen the employee's competences retailers usually offer their own internal training systems (Meld. St. 9, 2018-2019).

The lack of innovation pursuit within the retail industry might partly be explained by this tendency towards "threshold training". Knowledge and human skills are perpetually susceptible to depreciation over time and require continuous enhancement in order to maintain competitive advantage (Porter M. E., 1990). Yet the counter-intuitive relationship between career development and high turnover can lead to a tendency to focus on "threshold" training, which ends with basic operational directives (Davison, Messenger, & Williams, 1998). As a result, retail management lacks the cognitive capabilities required to drive business forward. This situation is often perpetuated by the application of standardized computing technologies which reduce skill requirements, a minimal presence of higher education and a largely transient workforce. As such, management among Stavanger retailers is missing opportunities to utilize the skills of educated, transient workers to generate fresh ideas and explore potentially beneficial technologies.

The" Lifelong Learning" reform and the initiatives to strengthen the carrier-oriented structure of the secondary education system and vocational training are important initiatives for enhancing the competence and knowledgebase within retail.

8.3.3 Sustainability, Transport and Waste.

The Government states transport and waste as the most important areas where the trading industry can affect climate and environmental emissions, as well as introducing new sustainable business models. Further, retailers can contribute to lower emissions by setting standards for how they get their deliveries and how they deliver their products to their customers.

The Government has for many years collaborated with the grocery sector in order to reduce food waste. Reduced food waste is economically profitable as it results in better utilization of

natural resources increasing the availability of food in a growing population and reduced emissions (Meld. St. 9, 2018-2019). But what about the rest of the retail trade? Such as fashion, interior and electronics for instance, that operate with rapid and fast-moving trends leaving the stores with many items not being sold, sold at extremely reduced prices and potentially ending up as waste. The government should direct more attention to these sectors as well in order to facilitate for innovation that reduces or solves these issues.

Although content restrictions and prohibition of one-time-use plastic articles may affect the retailer's product assortment, these types of mandates from Government does not involve retailers in solutions as the innovation responsibility is mainly aimed at the producers, giving little encouragement to retail.

8.3.4 Funding Agencies and programs

In the past years, the innovation policy instruments have contributed with considerable resources to innovation and environmentally oriented projects. The Government claims the current innovation policies are industry neutral, but this is not highly reflected in the existing funding schemes.

Commerce has little culture of using current policy instruments (LO-Virke, 2016). This can be explained partly because of the retailer's cognitive block when it comes to identifying innovation opportunities within own business, and partly by arguing that the current funding schemes are favoring some sectors while excluding others.

The first transition Norway is facing, is the move towards a more robust and diversified economy. This involves industry diversification which should also be reflected in policy and policy instruments. As of today, the existing funding programs are highly focused on R&D efforts, radical innovation, climate result and international scaling potential which is limiting the funding possibilities for small and medium-sized retail businesses.

The funding agencies have contributed with considerable resources to environmentally oriented projects in order fulfill Norway's climate commitments by 2030. This being projects resulting in more environmentally friendly products, production processes and technological systems that leads to better utilization of resources and reduces the environmental impact. What we see is that most of the projects for which support is sought or the projects that receive support is related to the manufacturing of goods or delivery of goods from producer or wholesaler.

The programs offered by Innovation Norway, such as the Environmental Technology program, is highly focused on the environmental impact, innovation degree and international potential. In addition to the same focus areas "Innovation Contracts" require collaboration with a pilot customer. Commercialization grants require the new product or solution being tested towards a potential customer.

The SkatteFunn Program of the Research Council is a right-based scheme as long as the criteria of R&D activities are met. It is not surprising that most of the funding is distributed to the institute sector and the sector of higher education. The retail sector is not associated with high R&D activities as the sector is mainly associated with incremental improvement and being late adopters. Further, "Innovation projects in business and industry" was announced in 2019, the program require participation with other businesses and is evaluated by the degree of research-based innovation efforts.

Even if aimed at being applicable for all businesses, the programs as they are today offer little room for incremental innovations. All evaluation criteria imply a high degree of radical innovation or high level of sustainability results, suggesting the programs being more suited for manufacturers or large, national chains with more comprehensive business models and own production.

8.3.5 Implications for Policy

Insufficient focus on the retail industry in national and regional policy results in a tendency to defer responsibility of decline in business to external factors, as well as deferring the innovation responsibility to suppliers.

Following the normative principles for designing STI-polices by Sandro Mendonça, STI-policies should be robust, flexible, allow for internal and external diversity, keep attention to timing, have an incremental approach and be tested in smaller scale before full deployment (Lundvall & Borrás, 2005).

Although, the Government is taking major actions to facilitate innovation and sustainability efforts, and increasing competitiveness, the policy approach is in many respects to radical. The high focus on radical innovations and demand for high positive environmental and climate results in existing funding schemes does not facilitate the belief that small actions can contribute to the overall objectives. When neither policy nor retailers look at retail as being part of the solution there is a need for revising policy and enhance the involvement of retailers.

9 Conclusion

As advances in digital technologies and global green initiatives accelerate the large-scale changes in the retail industry, the ability to continuously innovate is crucial for retailers to maintain a competitive advantage. Though retail is often considered to be minimally innovative, a surge of technologies aimed at the service industry demonstrates a wide variety of opportunities for retailers to modify business practices and capture value.

In this paper, we've considered examples of the most widely adopted retail innovations and find evidence of resistance to innovation adoption among Stavanger's retail industry, which is particularly evident among smaller, locally-based retailers. We argue retailers' lack of motivation to engage in new technologies and sustainable business model practices is a result of cognitive barriers and financial resource limitations.

Further, though regional policy focuses on sustainable city development and attractiveness of the city center, there has been little direct attention to retail in regional planning. Careful review of national policy shows a gap in innovation initiatives applicable to the retail industry. Current policies are centered around R&D activities as well as innovation projects with high-scalability and degree of disruption which are more suited to the industrial sector and high-technology industries.

For these reasons, policy intervention is essential to ensure local retailers within the city center are equipped with the tools necessary to remain competitive in the face of increased global competition and economic restructuring. Therefore, we propose a framework for retail innovation policy to motivate retailers to invest in innovation through education and funding opportunities.

10 Program proposals

10.1 Education for retailers

The program is a supplement to the government's competence reform "Lifelong Learning" and initiatives aimed at strengthening secondary and vocational education systems.

10.1.1 Goals

The purpose of this program is to provide local retailers with resources required to expand the implementation of, and investment in, innovative technology and sustainability practices that are demonstrated to have an impact on improving retail business.

10.1.2 Objectives

- Educate retailers on the importance of innovation and consequences of ignorance

- Provide retailers with access to data analytics on relevant environmental conditions

- Inspire retailers through plausible opportunity demonstrations

- Shift innovation focus from manufacturer-driven to consumer-driven

- Develop and strengthen technical and strategic skills as well as innovative capacity

- Facilitate networking and engagement between retailers

10.1.3 Outcomes

Participants will acquire the knowledge, tools and confidence required to successfully pursue innovative technologies and sustainable solutions which will most benefit their firm goals. Equip retailers with practical capabilities and proven strategies to tackle tough issues and enable retail innovation to flourish.

10.1.4 Mechanisms

Information and skill development training may be offered through a variety of channels and mechanisms including but not limited to: seminars, workshops, webinars, online resource database, certification program, innovation competition, university collaboration and innovation advisory service.

Skill development should include special attention to social media engagement and crowd-sourcing strategies as well as data aggregation and analysis.

10.1.5 Who's responsible/program manager

Centrally located associations closely linked to the retailing community, such as Stavanger Sentrum AS, are the best fit for facilitating and managing this program.

10.1.6 Applicant Eligibility

All retailers with a physical location established in the city of Stavanger shall be eligible for participation in the education program. Greater involvement will enhance the benefit for each participant by increasing network access and reducing cognitive lock-in.

10.1.7 Retailer Participation Cost

Participation in program events and access to resources shall be provided to retailers free of charge. Given retailers current lack of motivation to innovate, requiring payment for educational events would deter retailers from participating.

10.2 Retail Funding Program

This program would serve as a compliment to the existing Innovation Norway funding portfolio.

10.2.1 Goal

The goal of the program is to offer a low threshold innovation program that support small and medium-sized retail businesses. By offering increased incentives to innovate, we believe there is a high potential to strengthen the competence, innovation capabilities and growth within retail trade.

10.2.2 Objectives

- Inspire and motivate retailers to innovation and sustainability efforts
- Increase competitiveness
- Reduce financial risk
- Increase attractiveness of local city centers

10.2.3 Program Management

The program should be considered incorporated both at a national and regional level. We suggest Innovation Norway as the facilitator of the project in both cases as they have presence throughout the country with its regional offices.

10.2.4 Applicant Eligibility

All Norwegian small and medium-sized retail businesses across the country should be able to apply.

10.2 5 Funded Project Types

The retail funding program should offer subsidies of various degree depending on the type of project. We suggest this categorization for project types:

1) **Incremental innovation projects**

   Projects consisting of one or more smaller innovation efforts in order to strengthen businesses effectiveness and competitiveness.

   Ex. Investing and implementing newly developed technology that has not yet been commercialized, investing in existing technology with the need for incremental development to fit the use of your business, as well as other investments that would not be made without support.

2) **Radical innovation projects**

   Projects that involves major changes to your business; involving product innovation, process innovation and/or service innovation.

   Ex. New innovative business models, new "own brand" products,

3) **Sustainability projects**

   Projects involving one or more sustainability efforts that lead to more sustainable store operations, products, or consumer behavior.

   Key words: energy effectivization, green products, fair trade, reduced waste, circular economy, re-use, repair,

10.2.6 Allocation

The distribution of funds should based on an individual project basis. When evaluating the projects, the program authorities should make sure that the subsidies are distributed evenly across the country in order to increase the spreading potential of the project outcomes.

10.2.7 Additional Considerations

Further, the program authorities should ensure that the innovation projects focus on labor-augmenting instead of resulting in laboring replacement.

11. Discussion and Suggestions For Future Studies

Despite the results, this research encounters some limitations. As the objectives of our study were suited to a narrowed sampling, the political infrastructure surrounding the retail industry in other towns was not considered. For more generalizable results, the research can be further extended to different Norwegian cities to evaluate the diffusion at country level. Additionally, the varying level of managerial status, beyond experience within the industry, was not taken into consideration. As such, there may be nuances in the innovation-decision aspect which may affect results. For example, two of the retailers interviewed were not owners and as such maybe have had less control over adoption decision than the other participants.

12. BIBLIOGRAPHY

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APPENDIX

Retailer Interview Guide

RETAILER INTERVIEW GUIDE

1. Background
   a. **What product category do you sell** (home goods, food, etc.)

   b. **Who is your target customer?**

   [If franchise or chain]
   c. **How much are you able to influence how you conduct business decision making for your location?**
   d. How much support do you get from parent entity for modernizing?

   e. **Do you sell online?**
      1. If yes
         a. approx. what percentage of biz is online sales? 10 -15%
         b. Is that sector growing? Yes
      2. If no: Do you plan to? Why or why not?

2. **Connected with neighborhood associations?** (ex: Stavanger Ost, Fargegate) Good idea or no?

3. **What are your goals for the next 5-10 years?** (just survive/maintain or grow?)

4. **What are your biggest challenges today?** (in achieving goals)

5. **Who do you see as your competitors?** (in SVG area)

6. **Are you concerned with online competition?**

7. **What do you think are the current innovations or future trends for retail** businesses like yours?

8. How are you going to adjust (if at all) to the changing retail landscape / future trends?
   a. **Is there anything you're currently doing that is innovative** (compared to other retailers in this area)

   b. **Do you have any plans for creating an innovative experience?**

   c. **Any plans for innovative sales process / logistics** (ex: distribution center, same-day delivery)

   d. **Are you interested/have plans for modernizing/updating/innovating your current space** (keeping up with future trends? Experience center?)

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9. **What do you think your customers want from you?** (not currently providing, want more of)

10. **How is the delivery of goods into your store organized, and do you have special challenges with suppliers** (manufacturers, importers, distributors) and the supply chain in terms of products, timing and delivery volumes, prices etc.?

11. **Is there anything you think the municipality can do to help you?** (modernize/ grow)

12. **Do you have any issues/concerns/challenges with existing policy?**

Declaration of consent

For our Master Thesis in Business Administration, specializing in Innovation, we are looking into trends and challenges in retail in the Stavanger Area. We are analyzing current innovation and retail policy; retail trends and what businesses and municipality can do to keep up with the changing retail landscape.

As part of our study we are conducting interviews with local store owners/managers to get a better understanding of what the trends and challenges are in the Stavanger area.

Our group consists of:

Celia M. Vrnak and Malin Woie (+47 924 98 682)

Confidentiality: The research will be reported in a written thesis that might be published. All the information will be used for educational purpose only. There is no commercial objective being granted for this study.

Declaration of consent:

- I agree to take part in the interviews and being recorded for the groups use while conducting their study.
- I agree that the information I give, and my name can be referred to in the thesis.
- I agree that the transcript from the interview can be included as an appendix in the thesis.
- I have received, read and understand the information.

  Date:
  Store:

  _____