

# The Keel of the Iceberg

Female innovation: An invisible driver for resilient rural development

A case study in the Westfjords



*View of the town Ísafjörður in the Westfjords, Iceland in winter.*

Master's thesis

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## Abstract

Rural communities in Iceland rely on natural resources for their economic development. As work with natural resources is generally more physically demanding, industries with a masculine connotation became the dominant sectors in these regions. Research needs to shift its focus towards a more feminist analysis of the development of resource-dependent towns or rather, in this case, fishing villages. Even though the field is changing, women in innovation are still widely underrepresented, and research is still needed for the causes of that underrepresentation. This research will take place as a case study of the Westfjords region in Iceland. This study will analyse the experiences of female innovators in the case area and explore, how concepts and tools of enhancing the innovativeness of a region need to be analysed in order to include women and meet their challenges in the innovative process. Concepts of an innovative region will be questioned and the iceberg model of diverse economies of Gibson-Graham (2006) will be applied. The aim is to add a female perspective with the help of the knowledge and experiences from the interviewees. The paper is based on qualitative research with 8 female innovators from different communities in the Westfjords, who shared their experiences and the challenges of their everyday life as innovators in the case region. The findings of this thesis show that the multiple roles of women in the case area are still defined by very traditional role allocations. As they are supporting alternative but valuable elements of the local economy, they see the change they are bringing to the communities, but also experience, that in the bigger picture of regional economic development, their achievements are not valued.

## Executive Summary

Rural communities in Iceland rely on natural resources for their economic development. As the work with natural resources is generally more physically demanding, industries with a masculine connotation became the dominant sectors in these regions (Tsenkova & Youssef, 2014). Therefore, the research on the development of these communities focusses on men, the male labour market, and the male contribution to development (Alsos et al., 2013; Fhlatharta & Farrell, 2017; Gustavsson, 2021). In order to enhance the economic resilience of resource-dependent communities, innovation and portfolio diversification are addressed (Gamito et al., 2019). But this interest in innovation and portfolio diversification is often limited within the sector of natural resource exploitation; in the specific case of this study this means mainly fisheries (Carrà et al., 2014; Gamito et al., 2019; Gustavsson, 2021; Prosperi et al., 2019). Research needs to shift its focus towards a more feminist analysis of the development of resource-dependent towns or rather, in this case, fishing villages. The focus on natural resources often excludes women and their participation in the labour market and the economic development.

Women in innovation are still widely underrepresented. Even though the field is changing, research is still needed on the causes of that underrepresentation. Studies show that women are highly motivated to tackle social issues by entrepreneurship, especially if the issues are directly related to their own life (Rosca et al., 2020). Also, women in entrepreneurial positions are more likely to lead a subtle transition with their enterprise or innovation instead of attempting to implement multiple transformative interventions at once (Rosca et al., 2020; Skaptadóttir, 2000). Gibson-Graham (2008) point out, that in order to gain a holistic overview of the developing factors of a region's development, one needs to apply a new definition of economies, the so called *diverse economies* (Gibson-Graham, 2006).

## Research questions

In order to research the role and possible effects of female innovation in rural development the study will investigate the following research question:

*What characterizes female innovation in rural development and how can a feminist approach to innovation enhance the resilience of rural and resource-dependent communities?*

A more balanced approach between male and female innovators will affect the economic and social development of the studied region. This study will analyse the experiences of female innovators in the case area and explore how concepts and tools enhance the innovativeness of a region need to be analysed in order to include women and meet their challenges in the innovative process. Concepts of an innovative region will be questioned. The aim is to add a female perspective with the help of the knowledge and experiences from the interviewees.

## Methodology

The research will take place as a case study the Westfjords region in Iceland. The analysis is divided into three sub-questions which will explore multiple aspects regarding female innovation in rural development. Qualitative, semi-structured interviews were selected as the primary data collection method. The interviews give insights of the specific perspectives of female innovators who can share their personal experiences. The interviews examine the interviewed women's role in her community, how they are active or innovative, what they think the community needs in general, where they experienced challenges in their innovative processes, and where they were able to find support.

## Analysis

Female rural innovation is not necessarily about inventing a new product or service but finding an approach or way to make a product or service work in the local context. The innovation lays in the way of meeting the community's needs by collaborating with other community members and finding creative approaches. It is not limited to ventures with the goal of economic growth, instead it is about creativity. Female rural innovation means meeting deficiencies, taking over responsibility for the community, and empowering each other by their activities. Female innovation contributes to the development of rural communities as it tends to directly target the needs of the community.

The prevalent gender roles in the observed communities have a big impact on the innovativeness of the communities' women. The communities' expectation is that the women take care of their family and children. This leads to a high mental load which leaves little to no space to be creative and innovative. The partly segregated labour market and the traditional distribution of roles within the families hinder intersectional networking and leave women isolated within their direct contacts, which results in women not valuing or sharing their ideas

with peers. This leads to a lack of confidence when it comes to idea creation and sharing processes.

## Conclusion

This study revealed that female rural innovation tackles a lot of communal needs and does not necessarily contribute directly to economic growth. Therefore, female rural innovation can be seen as a big part of the submerged part of the iceberg. Innovation concepts or concepts of rural development that use innovation do not acknowledge activities that fall under the definition of rural female innovation in this study, because they often focus on the three *floating* elements: “wage labour, market exchange of commodities, and capitalist enterprises” (Gibson-Graham, 2006, p. 69).

The study showed that a lot of innovative activities are happening in the case area and are also valued on a local level. But these activities are not necessarily acknowledged on a national level or in research as innovations with a valuable effect on rural development. Female rural innovation needs to be at first acknowledged and valued, so the specific challenges, such as traditional gender roles, mental workload, and networking can be fostered purposefully.

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## List of abbreviations

ITQ – Individual transferable quotas

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# 1 Introduction

Resource-dependent communities built their economic growth on a single or a few natural resources and therefore have been focussing on the same industries for decades in their development (Halseth, 2016). These communities rely more on male workers in either physical demanding labour or in industries with a masculine connotation for their economic development (Tsenkova & Youssef, 2014). Therefore, research on the development of these communities has been focused on men, the male labour market, and the male contribution to development (Alsos et al., 2013; Fhlatharta & Farrell, 2017; Gustavsson, 2021). In order to enhance the economic resilience of resource-dependent communities, innovation and portfolio diversification are addressed (Gamito et al., 2019). But this interest in innovation and portfolio diversification is often limited within the sector of natural resource exploitation; in the specific case of this study this means mainly fisheries (Carrà et al., 2014; Gamito et al., 2019; Gustavsson, 2021; Prosperi et al., 2019). Gustavsson (2021) argues we should focus on fisheries entrepreneurship for a “gendered context of value-added fisheries” (Gustavsson, 2021, p. 4), but I argue, we need to get away from solely fisheries and growth oriented entrepreneurship in research towards a more feminist analysis of the development of resource-dependent towns or rather, in this case, fishing villages. The focus on natural resources often excludes women and their participation in the labour market and the economic development.

## 1.1 Problem analysis

### Resource-dependent communities

Halseth (2016) states, that resource-dependent communities in rural regions have faced change now for multiple decades. As he describes, countries have been facing social, political, and economic restructuring and the service and information sector has been on the rise. Therefore, resource-dependent towns lost their importance in national economies and had to face transitions in their local social, political and economic structure (Halseth, 2016). These transitions created challenges, which are diverse but most of them are intertwined and perpetuate each other.

Nevertheless, the economic impact that rural areas as producing regions still have on the national economies are often forgotten, especially in the European context where non-urban

areas actually have an important effect on the economic development of a country. The political neglect can be seen in general policy making, less governmental support, and underdeveloped infrastructure of all kinds (Dijkstra et al., 2013). Rural areas offer fewer public services such as education, health care, and transportation, which are reasons for especially young people to leave these regions. But rural communities also lose inhabitants due to a lack of job opportunities (Thidemann Faber et al., 2015). Especially rural communities that have been built on a resource dependence (e.g. fishing communities) have to face a change in the labour market with which they must learn to cope (e.g. Bjarnason & Thorlindsson, 2006; Gamito et al., 2019; Kokorsch, 2018).

As with many other rural areas, Icelandic coastal communities face a demographic shift. With a historically embedded and dominant fishery sector, they have a higher risk of path-dependence and lock-in situations (Kokorsch, 2018). Population is declining, effects of brain drain and ageing of the population are occurring and the loss of the younger and creative class leaves the communities less competitive in comparison to urban areas (Herslund, 2012). Areas with a predominant hard labour sector, such as coastal and fishing communities, are experiencing an increase in gender imbalance due to fewer opportunities for higher education compared to urban areas and evolving automated processes taking away jobs traditionally occupied by women (Kokorsch, 2018; Nilsson & Jokinen, 2020; Thidemann Faber et al., 2015).

In Iceland, the fishing industry and associated industries are still the main creator of capital wealth and the biggest employer in the Westfjords (Skúladóttir et al., 2020). After the implementation of individual transferable quotas (ITQ) system in Iceland many coastal communities, including in the Westfjords, faced a massive decrease in employment in the sector and further socio-economic and demographic changes (Smáradóttir et al., 2014). These communities are still facing the generational aftermath of the implementation of the transferable quota system. As the communities are built around the fishing culture and therefore struggled to adapt to this shock, other marine resource related industries such as fish farming and seaweed farming are growing (Skúladóttir et al., 2020).

## Innovation

Innovation can increase the economic power of a region by creating jobs (Uyarra & Flanagan, 2014), but also change the narrative of a region, disrupt path dependence with this new narrative and therefore increase the attractiveness of the region without necessarily increasing

the number of jobs (Gamito et al., 2019). Innovation is a recognized tool in rural development to address challenges and help with transitions (Steiner & Atterton, 2014).

Innovation is often still seen as a tool to merely boost a region's economy and therefore innovators are often defined as people having business ideas and starting companies to create economic value and jobs (Drucker, 1985). Innovation research has been male-dominated for many decades (Alsos et al., 2013). Also, reality paints a very male dominated picture when it comes to innovation and entrepreneurship in rural Nordic regions. Women are underrepresented in statistics regarding innovation because their aim in innovative processes is less often creating financial value, but instead creating value for their families or communities (Schneider, 2017).

In fishing communities there has been a focus on enhancing the variety of fisheries ancillary production and services, as increasing the value of fish products is seen as an important tool to enhance the economic resilience of a community (Carrà et al., 2014; Gustavsson, 2021; Prosperi et al., 2019). But a diversification of the local economic portfolio outside of fisheries can enhance a community's adaptive capacity to change and resilience (Hassink, 2010).

In research and practical discussions, innovation is mainly linked with technological development. Innovation as a creative process that creates value means much more. In rural development, innovation can be more than counting heads and creating direct economic revenue. For rural communities, the development of new services, social innovations such as sports clubs, or initiatives that address issues like environmental threats or the ageing population on a local level are as important as a technological development. Innovation in rural communities should be about disrupting the predominant system, breaking up locked-in or path dependent communities, and creating value for communities, which then can create attraction and even economic power.

The implementation of an innovation-supporting ecosystem can foster creative ideas and therefore start a phase of transitioning (Labrianidis, 2006). An active and thriving innovative ecosystem helps a community to endure external shocks and reinvent itself after structural changes or shocks. But rural towns lack capacities to start such transition, and both connectivity as well as infrastructure might be under-developed compared to urban areas. Therefore, innovation might be hindered, and transitions are less likely to succeed.

## Gender aspect

Iceland ranks as the top country in the world in the gender equality index (World Economic Forum, 2021). In the subindexes of the report *Economic Participation and Opportunity*, *Educational Attainment*, and *Political Empowerment* Iceland remains among the leading countries worldwide. This affected a certain narrative which has been mirrored by multiple newspapers around the world: “Iceland: the world’s most feminist country” (Bindel, 2010), “The Most Feminist Place in the World” (Johnson, 2011), “Why Iceland is the best place in the world to be a woman” (Hertz, 2016). However, women in Iceland are still underrepresented in many industries, the gender pay gap still exists, and women’s role in economy and development is yet to become fully equal (Jafnréttisstofa, 2017).

As Edvardsdottir (2013) and Skaptadottir (1996) describe, the fishing culture in fishing communities in Iceland is the backbone of a prevalent sense of belonging, strong local identities, and a manifestation of distinct gender roles. In fishing communities in Iceland, women always had a strong stand. As in both papers pointed out, in the past, they were responsible for the household, the farm, and the upbringing of the children while the men were out fishing for multiple days or even weeks in a row. At the same time, their roles in the communities were clear. The jobs on the fishing boats were occupied by men (Edvardsdottir, 2013; Skaptadottir, 1996). Even though times have changed and fishery is not dominating the communities’ everyday lives anymore, local pride in general as well as the local pride of fisherman wives has stayed (Skaptadottir, 1996). But also, gender segregation of the labour market has stayed. Physically demanding labour is still more often performed by men, and jobs in the health and education sectors are mainly occupied by women (Eydal et al., 2016). And even though women in rural Iceland on average reach a higher level of education, they are still mainly responsible for the household and the upbringing of the children (Edvardsdottir, 2013).

## Female innovation

Women in innovation are still widely underrepresented. Even though the field is changing, research is still needed for the causes of that underrepresentation. Studies show that women are highly motivated to tackle social issues by entrepreneurship, especially if the issues are directly related to their own life (Rosca et al., 2020). Also, women in entrepreneurial positions are more likely to lead a subtle transition with their enterprise or innovation instead of attempting to implement multiple transformative interventions at once (Rosca et al., 2020;

Skaptadóttir, 2000). As female innovation tends to not just be influenced by economic factors, but also social ones, female innovation needs to be understood in a broader social context, including the innovators' life course and family situation (Gustavsson, 2021). Even though there are studies regarding female innovation and entrepreneurship in rural fishing communities in countries of the global south, the impact of gender on innovation in rural resource-dependent towns in Nordic countries is still under researched (Gustavsson, 2021). Especially in regards to the high ranks of Nordic countries in the Global Gender Gap Reports (World Economic Forum, 2021), a deeper look into the situation of female innovators in Nordic rural communities is necessary.

Female innovation can help with tackling rural challenges, such as environmental threats or population decline. A more balanced approach between male and female innovators will affect the economic and social development of the studied region and the effect on resilience and liveability in the Westfjords needs to be assessed. Therefore, this study will explore women's innovations in rural communities, identify the current obstacles for women in innovative processes, and discover how a more gendered approach to innovation fostering can enhance the resilience of a resource-dependent community.

## 1.2 Research questions

In order to research the role and possible effects of female innovation in rural development, the study will investigate following research question:

*What characterizes female innovation in rural development and how can a feminist approach to innovation enhance the resilience of rural and resource-dependent communities?*

Female innovation can help with tackling rural challenges such as environmental threats or population decline. A more balanced approach between male and female innovators will affect the economic and social development of the studied region. This study will analyse the experiences of female innovators in the case area and explore how concepts and tools to enhance the innovativeness of a region need to be broadened in order to include women and meet their challenges in the innovative process. Concepts of an innovative region will be



questioned with the aim to add a female perspective with the help of the knowledge and experiences from the interviewees.

The research will take place as a case study the Westfjords region in Iceland. It will investigate the role, experiences, and impacts of female innovators in the region with an explorative character. This study looks at women in the Westfjords who take their fate into their own hands and change the communities into more liveable and resilient places. The analysis will be divided into three sub-questions which will explore multiple aspects regarding female innovation in rural development.

*1. What characterizes rural female innovation?*

This question aims to investigate common and personal definitions of (female) innovation, the reasons women act innovatively, and their approaches to innovation.

*2. How does female innovation contribute to rural development?*

In the second part of the analysis, challenges of rural communities and possible shifts will be compared with needs of the local communities as well as actual local innovations.

*3. How does women's reality of life influence their innovativeness?*

This question will share a deeper insight into the experiences of local innovators and unfold challenges especially women face when being innovative in their communities.

The study will be carried out as a case study in the Westfjords in Iceland. The case study allows a deeper focus on local features and characteristics, and findings can in combination with already-acknowledged theories be generalized (Creswell, 2009). It will be a problem-based study with a real-world practice orientation. In order to gain a deeper understanding of the research problem, mixed methods are applied.

### 1.3 Aim

The study will explore women's innovative activities with a focus on innovations in the rural communities of the Westfjords and identify the current obstacles for women in innovative processes. The focus on women is important to shine a light on female activities in rural development and their worth and value to rural society. Due to a predominant gender imbalance and the workforce therefore also being male-dominated, the feminist lens is necessary to show the importance of female activities in rural areas and empower women's roles in rural development. The feminist lens will allow an investigation of individual situations, obstacles, and adaptation or coping strategies of women in innovation.

With more knowledge in this field, we can meet the challenges and the Nordics can become a forerunner not just in gender equality in urban areas, but also in rural regions. This thesis contributes to identifying challenges of rural female innovations and to a better understanding of the case area's female innovation dynamics. Its findings will prove very helpful in the development of rural inclusive innovation policies and regional development agendas addressing so far neglected rural challenges.

This study highlights the importance of female innovation in transition processes of rural communities. By shedding a light on change from within the community, from community members that feel a high level of connectedness to the place, female innovation in rural development receives acknowledgement that it deserves, as it is a driver for rural development and capacity building.

### 1.4 Delimitations

There are several aspects which delimit this study. As this study aims to shed a light on female innovators in the case area, only women will be interviewed. As this study approaches the topic with a feminist lens, the approach of only interviewing women is legitimate, but of course the experiences of men in the field of rural innovation are important too. Academia acknowledges gender as a spectrum. Nevertheless, for this study it was decided to only examine the experiences of women where the gender and sex assignments aligned. The decision was made to examine the experience of women who were also brought up as girls and women in the case

study's society and therefore have similar experiences regarding gender inequalities in their upbringings.

A big factor of the development of communities in the case area, especially regarding gender roles, gendered labour markets, and social cohesion, is the growing number of migrant workers and their families in the region. Due to less access to this group in the case area, and further a language barrier to some of the migrants, it was decided to not include this group to the study.

## 1.5 Outlook

The thesis begins with a literature review of the terms and concepts of rural development, innovation, and female innovation. From there, the theoretical framework of a female innovative region will be derived. The next part will then explore the research design, beginning with explaining the feminist lens the author used, followed by the case study approach and the case selection for this study, and then the methods applied in order to explore the research questions and apply the theoretical framework. This will be followed up with a description of the local context of the case area. In the analysis, the three sub-questions will be explored. The analysis leads then to the discussion of the main research question. This paper ends with a conclusion and an outlook.

## 2 Methodology

The methodology will frame this research by presenting the theoretical framework, the research design, and the methods used and will put the problem into the local context. The theoretical framework defines key terms and presents the state of the art in the relevant fields of research. Further, the theories of research design that underline this study will be presented, which, in this case, are a feminist research approach and a case study research. The methods part contains an explanation of the methods used to gain data and to further analysed the data. It was chosen to collect data with semi-structured interviews and for the analysis the approach of a thematic analysis was chosen. This part ends with the local context of the case area, the Westfjords in Iceland. The chapter will investigate gender alongside the following factors: internal migration, education with a focus on academia, labour, public policy, and gender roles in rural areas.

### 2.1 Theoretical framework

This part starts with the definitions of the key terms used in the research question, and then will unfold the relevance of related concepts.

#### Rural

Rural is a term that scholars have found hard to define. It has often been used as an opponent term for the urban, whereas this term also remains blurry (van Eupen et al., 2012). Where the literature tried to define urban and therefore on the contrary the rural with spatial and demographic demarcations, this has not been proven useful (Hutchison, 2010). Proximity, community size, and density are often used as attributes to distinguish between urban and rural. But the terms depend heavily on the context. The OECD (2020) describes rural places in the context of remoteness to urban centres. Besides the challenges with connectivity between settlements and to bigger urban centres, economies often tend to be highly specialised, and public services such as healthcare, education, and governmental services are harder to establish and maintain (OECD, 2020).

Important understanding for this study is, that in remote and rural place social values are of high importance. Traditions are kept alive, and community members tend to show a certain sense of belonging and therefore a higher responsibility for the community (Gamito et al., 2019). As these attributes can be a driver for innovation (Gamito et al., 2019) and development, these attributes

of a tight-knit, rural community can also lead to exclusion of external people and factors, and a rejection of change (Herslund, 2012).

### Resource-dependent communities

As defined by Tsenkova and Youssef (2014), resource-dependent communities built their economic development on a single or just a few industries, that are dependent on a local occurrence of natural resources. Typical examples for resource-dependent communities are mining towns or fishing villages. Resource-dependent communities show unique characteristics in their social and economic construction. Many resource-dependent communities are small in size and geographically isolated, their workforce is male-dominated, and they might experience high seasonal population fluctuations (Tsenkova & Youssef, 2014). Therefore, they are easily affected by global shifts in demands or decline of the natural occurrence of the resource they are depending on. Pressures that these communities are experiencing when facing these changes are declining population and high unemployment of the male-dominated labour force. This single industry focus and its challenges limits the ability to adjust to change and puts the communities' livelihoods and the populations well-being under pressure (Goldenberg et al., 2010).

### Resilience

Community resilience is the ability and capacity of an exposed community to deal with external shocks or transitions (Manyena et al., 2019). In case of a change in either the social or political system, or of environmental nature, a community's resilience does not just mean to deal with this change, but also to efficiently using established resources within the community. This strength from within will help to overcome these challenges and also to establish a system that might be even stronger than the one before the shock (Acevedo, 2014; Amundsen, 2012).

Holling (2001) described a circle of development communities usually go through. It shows that economic stagnation can happen at any point after a period of growth. This stagnation then can lead to a collapse of the community. At this point the adaptive capacity as a part of the communities' resilience shows its importance. With strong adaptive capacity communities will renew and reorganise its systems in order to come back to a state of growth. He points out, that it is important for communities to not rely on the old systems and instead aim to organise the community with a new and stronger structure (Holling, 2001).

Typical events of stagnation or the inability to fight the stagnation are lock-ins, that occur, when a community faces path dependence and embeddedness and does not show the needed adaptive capacity to get back to a situation of growth.

Path dependence occurs when technology or process related decisions in the economic development of a community, that have been made for a community in the past have a strong impact on the future of the community by influencing upcoming decisions, like choices of methods or practices (Hassink, 2010). As Hassink (2010) further notices, these early decisions then shape the identity of a place and creates a challenge for the community when transition processes need to be tackled.

Embeddedness adds the social component to the more economic understanding of a path dependence (Hassink, 2010). He explains, that through previous economic decisions certain norms, values and social rules were created, which can lead to inflexibility and closure when it comes to necessary change processes in a community, because social ties and bonds as well as collaboration of local actors and networks are so deeply intertwined with the economic narrative of a town, that moving away from that narrative seems like abandoning the local culture (Hassink, 2010). Though path dependence and embeddedness are not necessarily negative for a community, an interplay of both can lead to a community's inability to act and find a resilient way of development.

A lock-in of a community occurs when both path dependence and embeddedness are having such a strong impact on a community's development, that change, and transition processes seem to become impossible (Hassink, 2010). Past decisions regarding the community's development and deep rooted cultural narratives are stronger than the urge for change (Underthun et al., 2014).

As a community needs to prove its resilience in case of economic stagnation, the diversification of its stock such as capital resources (environmental, human, social, cultural, structural and commercial) will strengthen a community's position and therefore its resilience (Callaghan & Colton, 2008). For small and remote communities, the diversification of sectors is challenging, as they lack population, proximity, and connectivity to diversify certain sectors. Which means that the capacity building of a small and remote community is relatively more challenging than for an urban community. Therefore, strength and preparedness from within the community is needed, to put effort into capacity building.

## Rural development

Rural development is a specified term under the umbrella of regional development. As the OECD (n.d.) defines it, regional development aims to enhance well-being, resilience, contribution to national economic performance, and living standards in all kinds of regions, whereas the boundaries of the term region can be spatial as well as socio-economic. Rural development therefore focuses on the development of rural regions. In particular this means supporting place-based policy making processes and economic activities in order to enhance the resilience of rural regions (OECD, n.d.). These supporting activities can be investments or attractiveness strategies (such as innovation fostering systems), diversification of the local economy, multi-level governance systems, and stakeholder involvement (Etzkowitz & Klofsten, 2005; OECD, 2020; Uyarra & Flanagan, 2014).

Rural communities face multiple challenges. Due to the low proximity and connectivity, and less economic opportunities, rural communities lose population that is moving to more attractive urban areas (van Eupen et al., 2012). Infrastructure is often underdeveloped; and this underdevelopment does not just affect the roads but also telecommunication, education opportunities and administrative and social services. The lack of services, connectivity, reliability of energy and internet access, the overall neglect by national governments (Dijkstra et al., 2013) leads to a scarcity of human capital, lower marked opportunities and higher costs of the remaining services (Gamito et al., 2019) which then makes region even less attractive and perpetuates a circle of decline. Typical terms used in this context are path dependence, embeddedness, and lock-ins.

One of the several tools of rural development to prevent or to unlock lock-in-situations is to work towards a diversification of the economy, which enhances the economic resilience of a region as well as increases the attractiveness of the region through direct effects and externalities (Steiner & Atterton, 2014). As they point out in their study, this diversification can happen internally within an existing sector, for example, by developing new products and services around the predominant resource in the region which enhances the competitiveness of the industry in the global market. Another kind of innovation is the holistic portfolio diversification that tries, not only to just focus on one industry, but to foster innovation and ideas with new or overlooked resources or approaches (Etzkowitz & Klofsten, 2005; Uyarra & Flanagan, 2014). A holistic portfolio diversification is a more resilient approach for rural communities, as it does not

just rely on one resource but challenges a predominant system and therefore can lead to a transformation.

This transformation is not just limited a strong economic development, but it includes the interplay of economic, social, and political development. The soon to be developed region is not just a plot of land, but it has human inhabitants that have more needs than just a job. This is, of course, important to subsist, but happiness, wellbeing and liveability of a community is as important than the economic development. This leads to community development as a part of the overall regional development. Community development should serve the community and its inhabitants in an inclusive way and treat them as actors and change agents of their own livelihoods, instead of treating the humans as objects, consumers, or economic capital (Eversley, 2019).

Community development usually means that someone from the outside is coming in and facilitates development or changes processes (Eversley, 2019). Even though these processes are called bottom-up or bottom-led, the initiative to start or facilitate a process is still coming from the outside. It tries to include locals in a process they might never have asked for. As discussed later, innovation in rural communities often develops out of a deficiency or a certain need. A self-governing form of community development that uses innovation to start a transition, is not just a tool for a holistic regional development, but it is also a way of serving the real needs of a community, because it is coming from within.

Community development is not just about *counting heads*, increasing job availability, and growing communities. It is about liveable, sustainable, and resilient communities, that can offer their inhabitants the services they are asking for. This leads to innovation as a creative process that offers creative solutions to local challenges.

## Innovation

Before digging deeper in how innovation can foster a resilient rural development, the term innovation in its more classical definition will be explored. The term innovation has many definitions that have changed over time and depends on the discipline it is used in. Baregheh et al. (2009) state the blurriness of this term and conducted literature reviews to gather all these various definitions to create a more holistic and contemporary definition. Existing definitions might overlap and touch the same idea of innovation being the process of developing new ideas, but in their cores, they still differ from each other.



Innovation as a process was first defined by Drucker (1985) as a recombination of knowledge that leads to conversions of a “material into a resource, [...] or to combine existing resources in a new and more” (Drucker, 1985, p. 34) and therefore “changing the value and satisfaction obtained from resources by the consumer” (Drucker, 1985, p. 33). Even though, he already pointed out, that the innovations do not necessarily need to be of technical nature, however, his definition focused on innovation within entrepreneurship and business development (Drucker, 1985).

In their literature review Baregheh et al. (2009) aim to gather multiple definitions of innovation and point out their similarities and differences. As a result, they come up with a new definition that aims to incorporate multiple disciplines and encompasses various stages of innovation:

“Innovation is the multi-stage process whereby organizations transform ideas into new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace.” (Baregheh et al., 2009, p. 1334)

Their conclusion is that multiple scholars define innovation as a process and not a separate act. They acknowledge that innovation is not just happening in organizations, but in their textual definitions they focussed on processes in organizations (Baregheh et al., 2009).

This study’s definition of innovation focuses on innovation being a creative process that transforms ideas in order to create value. Innovation can happen in very defined contexts and therefore does not have to be ground-breaking new in a global sense. Value creation is not just meant in the financial sense, but also in the sense that an innovation can create communal and social value. Therefore, an innovation does not need to lead to an enterprise, but can also create a shift in mindset, new governance structures, or even start a regime shift.

Innovation is a term that is liked to be used by various fields to describe different things, depending on the field’s focus or approach. In this study, the focus lays on rural development in a holistic understanding. This holistic understanding encompasses not just an economic development of a region or financial improvement of individuals and means more than just *counting heads* in regards of population numbers or created jobs.

## Entrepreneurship

When talking about innovation one stumbles inevitably about the term entrepreneurship. To be distinct, this study does not analyse entrepreneurial activities in the case area, but innovative ones. Innovation as “the act that endows resources with a new capacity to create wealth” (Drucker, 1985, p. 30) is one of multiple processes during the overall process of entrepreneurship.

Entrepreneurship according to Drucker (1985) is “applying management concepts and management techniques [...], standardizing the “product,” designing process and tools, and by basing training on the analysis of the work to be done and then setting the standards it required” (Drucker, 1985, pp. 21–22) and therefore upgrading an existing product or process. This entrepreneurial process creates new markets and new customers, whereas according to Drucker (1985) the opening of yet another take-out restaurant or food store is not entrepreneurship, because in order to be entrepreneurial, the business needs to create something new, different or even change or transmute values.

I argue that the “husband and wife open another delicatessen store or another Mexican restaurant” (Drucker, 1985, p. 21) might not be entrepreneurs as Drucker emphasises, but innovators, depending on the region and context they are opening their store. Drucker (1985) specified this case happening in an American suburb, whereas this study analyses rural areas. In a rural area the opening of a new business, be it a Mexican restaurant or a rent-a-shelf store, have impacts on the local economy and community. Besides the owners taking, of course, a bigger risk than in a food court in a suburban mall, where we already know that there is a high demand of take-out food, in a rural context opening a store does not just change your personal economic situation. One must see the excitement of locals when an *exotic* or *urban* venture opens in a rural setting. It changes the feeling of the place; it can even create pride (“Even we in this small town now have a rent-a-shelf store!”) and this therefore can attract new people moving to town. And this brings us back to Drucker (1985) who stated, that an enterprise needs to change or transmute values in order to be entrepreneurial. The opening of a new business of any kind in a rural setting has the potential to change or transmute values.

## Social Innovation

The term of social innovation will shortly be introduced. However, this study works with a broader and holistic definition of innovation that does not exclude innovators because of their aim or the outcome of their creative processes. Nevertheless, the term social innovation is important when discussing innovation for rural development as well as female innovation, because it is discussed in academia more and more, especially in the context of the two mentioned fields. As social innovation is as much part of the study as the above explained, classical and more technological definition of innovation, a definition of social innovation is needed.

Neumeier (2017) finds the term social innovation is too carelessly used. The term innovation in social innovation seems easier to define than the term social. As Brandsen et al. (2016) discovered, that multiple scholars referred to the term *social* as an improvement, a better answer than the existing one or simply something *good*. Social can also be seen as the opposite of the market oriented classical innovation, whereas social innovations don't aim to participate in the market, but have other aims (Brandsen et al., 2016). These aims do not necessarily have to be good, but they answer a need or a solution to a problem. Rosca et al. (2020) puts an emphasis on the aim of social innovation. Compared to entrepreneurial innovation, social innovation aims to create social impacts, and generating economic value is not prioritised in the process.

A definition by Neumeier (2012, p. 55) says social innovation was

„[...] changes of attitudes, behaviour or perceptions of a group of people joined in a network of aligned interests that, in relation to the group's horizon of experiences, lead to new and improved ways of collaborative action within the group and beyond. “

He focuses on two dimensions in his definition: the process dimension, whereas mobilising actors or participation process are meant with social processes; and the outcome dimension, where a social outcome is for example new governance structures or an improved means of collaborative action (Neumeier, 2017).

Social innovation in the rural context is a form of empowerment, giving people a tool for systemic change in their own hands (Eversley, 2019). Hence, in the rural context social innovation plays an important role. Even though it occurs in every context, the interesting part is that in the rural context it is less often called social innovation when community members

implement innovative practices in response to social needs and to serve the community or even for a long-term social transformation (Brandsen et al., 2016).

As stated above, this study does not just focus on social innovation, but in innovative processes, in a broader sense, run by women. But the definition of social innovation is important in order to point out, which processes are interesting for this study. Besides classical entrepreneurial innovation processes, social innovation processes are shaping the everyday life of communities. The definition of social innovation this study settles on focusses on the aim of social impact and the non-prioritization of economic value creation. Processes do not have to be innovative in a global sense, but regarding the user, context, or application.

Concluding, social innovation can be seen as a form of empowerment and a tool for systemic change. In the rural context, only communities that have an active population that takes the shaping of their society into their own hands, will be able to adjust to changes and transform to a higher level of resilience (Neumeier, 2017).

### Innovation in rural areas

Innovation in rural areas does not just mean to create something *out-of-the-world new* or something connected to high technologies (Gamito et al., 2019). An innovation in the rural context can be so many more things than in a dense and metropolitan urban area, where everything exists in abundance. Initiated through unexpected events, changes in the community or the market, sudden or even long-developing deficiencies, innovation as a creative process can break old structures and aim for a change. It is an approach or technique, that is new to the region or the context, that addresses local challenges for example in agriculture or in food security, that creates value beyond the economic meaning of value. As an outcome of a new mindset and therefore a different way of thinking it challenges traditions and long-lasting cultures of doing things like they were always done. At the same time, it does not necessarily mean to abandon these existing traditions, but maybe just reinventing them. As already mentioned earlier in this chapter, innovation as a tool of community development enables citizens to take local challenges into their own hands and participate or even lead transformational changes by proposing or even implementing interventions for locals, such as infrastructural or social challenges. (Baregheh et al., 2009)

For a long time, innovation in rural areas meant innovation in primary production that is dependent on natural resources, such as agriculture, fisheries, mining, and so on. It followed

one of Drucker's (1985) paradigms of innovation of converting material into a resource, hence creating more and new value out of existing practices. But regarding climate change and global warming, changes in natural livestock, or increasing scarcity of natural resources rural and therefore often resource dependent towns, need a shift in that paradigm.

“Rural inhabitants, newcomers or visitors, the rural settlements, and even agriculture and forestry can also become considered as resources and opportunities for “new” rural services, such as capacity building, support to entrepreneurship, territories promotion, and social services.” (Gamito et al., 2019, p. 2)

This shift in innovation in rural areas is already happening and deserves more attention. Innovation is not just tied to a specific industry or even businesses in general. Innovations can happen in non-profit organizations, schools, and associations, that simply start a new way of thinking or a restructuring of existing structures. This may lead to a reinvention of traditions, capacity building or differentiating land- or nature-based productions (Gamito et al., 2019).

Camagni (1995) says that the territorial factors plays a big role in regards to the reasons for and aims of innovation. In rural or underdeveloped regions organizational innovations and the mobilization of the population in order to start transformational changes play a bigger role than in densely populated areas with a bigger connectivity between each other (Camagni, 1995). This means the geographical location plays a role in why people are innovative. Rural and remote locations therefore demand a higher level of activity by the population than more densely populated and politically more important areas (Torre & Wallet, 2016).

The reasons for or the aims of innovation in rural areas differ as well to the more predominant urban context. In rural areas innovation aims to improve livelihoods, for example by offering services, that were discontinued because they were not profitable enough anymore in a small rural community, with a new spin or just not with the aim of being profitable anymore (Gamito et al., 2019). As mentioned above, innovations in rural areas are often growing out of deficiencies or necessity, sudden changes in the market or demographics, and aiming to solve local challenges (Madureira & Torre, 2019). These can be health care or administrative services, but they can also be initiatives for community education.

It is important to point out, that innovation as a solitary creative process creating value is not tied to entrepreneurial activities. Especially in the rural context, the creative process of idea generation without economic boundaries is what drives regional and community development

(Madureira & Torre, 2019). In conclusion, one can say, innovation in rural areas means changing the narrative of predominant structure, to not focus on *counting heads* but instead enhance the attractiveness and to not think of innovation solely within classical resources.

### Innovative region

The innovative region brings together rurality, regional development, and innovation. As mentioned above, innovation is an engine to change, it fosters niche development and can lead to a transformational change. Focusing on fostering innovation in rural development therefore is beneficial for a region. The innovative region can be a tool for rural development as well as a characteristic to describe a region that has a high innovation capability. This high innovative capability is characterized by knowledge exploitation and exploration, knowledge transfer, and dynamic interactions between several actors in the region (Cooke, 2014).

The term innovative region is closely linked to the knowledge-based development, which focuses on the knowledge and education sector. The knowledge sector and its research and development facilities are supposed to create spill-overs to local industries and foster industrial innovation (Lundvall & Maskel, 2000). Innovation in this context has often been seen as a part of the entrepreneurial process of starting a business or with the goal of portfolio diversification or industrial specialisation (Cooke, 2014).

Etzkowitz and Klofsten (2005) call this concept “the innovating region”. The innovating region builds on the spill-overs of the knowledge sector. The so-called triple-helix - the interplay of universities, industries, and government – is a key factor of the innovating region. Through an innovation supporting system the region is able to create companies from the importance of a niche player up to growth-oriented firms, whereas all innovations shall have a long-term commercial potential (Etzkowitz & Klofsten, 2005). This system includes “research centres, technology transfer offices and incubators” (Etzkowitz & Klofsten, 2005, p. 247). Also Uyarra and Flanagan (2014) emphasis the focus on enhancing the local interaction between firms and other local stakeholders and on providing institutional support, which may lead to higher rates of innovation, more jobs, and therefore economic growth.

Innovation as a development tool for rural development is described by Gruidl and Markley (2015) as creating a culture of innovation within communities<sup>1</sup>. In order to foster innovation and create this culture, they propose multiple measures that are built on the needs of the innovators. Therefore, they developed three levels of actions communities can take. On the level of *basic support*, a community can invest in infrastructure to enhance the overall attractiveness of the community, provide basic business services, raise awareness for local innovation and entrepreneurship and provide regular network opportunities. These measures are supposed to tackle the innovative atmosphere of a community and give locals as well as externals an inspiring and supportive environment. The level of *advanced support* is supposed to energize the innovators and entrepreneurs. For this purpose, a community can foster the collaboration between local businesses, the local development office and citizens, ensure access to financial support systems and encourage young entrepreneurship (e.g., through school programs). The *high-performing support* demands not just commitment from the governance level, but also from the community itself. It further demands the option of customized help for local entrepreneurs and the addition of entrepreneurship as a part of the core curricula in schools (Gruidl & Markley, 2015).

## Female innovation

The relationship between gender and innovation has not been sufficiently explored in academia. Common innovation literature is either gender blind, does not address the dominating masculinity in innovation research, or is even actively hiding it (Ranga & Etzkowitz, 2010). Classical innovation definitions as also the ones described above are building on gender stereotypes and certain forms of masculinity (Andersson et al., 2012). The common image for an innovation or innovator is a tech-innovation or the agile young male start-up entrepreneur. As sufficiently discussed in this paper, innovation means more than a new tech idea by young, agile men. But latest publications still struggle to incorporate a broader, more inclusive definition of innovation. A well served image is the rural women, stay-at-home-mother of a few children, that sells hand-crafted products to contribute to the family's income (Andersson et al., 2012). The problem lies in these transported images. Female innovation is devalued, as female

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<sup>1</sup> In their paper Gruidl and Markley call it "culture of entrepreneurship" (Gruidl & Markley, 2015, p. 278). Their definition of entrepreneurship is very holistic and does not just include the business approach described earlier in this chapter. Due to their broad and holistic definition of entrepreneurship (e.g., their term for *social innovators* is *civic entrepreneurs*) I applied their concept to my definition of innovation.

innovations are for example in Markantoni's and Van Hoven's (2012) study called *side activities*, hence something, that is carried out on the side. This term creates the image, that female innovation is less to be taken serious and therefore less important than male innovation. There are also women out there, that are innovative in the tech field. Female innovation does not just mean a family-friendly, social oriented business. It is not that female innovators do not exist, they do, and they do in every field, and not just in the so-called gendered sectors. But they are still very invisible in research and therefore struggle to take a stand in a field with dominating stereotypes.

Multiple studies point out differences between the aims and motivation behind female innovations. However, one needs to be careful not to draw conclusions that could lead to solidified stereotypes about women in innovation. Also, Markantoni and Van Hoven (2012) see a main driver for female innovation in economic necessity, but also lifestyle consideration, such as particularly for women who moved to the country side to live a quieter life closer to nature. Some women wish to develop a professional career, which especially in rural regions, means to create your own business due to the lack of existence of a specific industry in the area, or for self-fulfilment (Bock, 2004). Rosca et al. (2020) states that women are more likely to address social issues such as poverty or health with their innovations. Fhlataharta and Farrell (2017) argue in their case study that the main reasons for women in their case area to become innovators were unemployment and a need for a sufficient income. They tend to build their innovations on traditional knowledge and resources and within gendered sectors such as tourism, craft or education (Fhlatharta & Farrell, 2017).

Further findings are interesting to observe but need to be handled carefully as well. Women seem to have a stronger connection to localities and therefore more knowledge and awareness of local needs (Markantoni & Van Hoven, 2012). Skaptadóttir (2000) calls the innovativeness of women in rural and remote communities a common response to crises, as women tend to find communal solutions to crises. By using this local knowledge and awareness they end up having a smaller ecological footprint and a more efficient way of using resources (Fhlatharta & Farrell, 2017). Due to less access to funding opportunities and less opportunities to accumulate wealth, women start businesses on a smaller scale and do not expect immediate financial outcomes (Sullivan & Meek, 2012).

Nevertheless, women face challenges in comparison to their male competitors because of living in a society embedded in a patriarchal system. Due to socially embedded, especially in rural



areas, inflexible gender roles, women still do a lot of unpaid care work, which means taking care of close family members, raising children, or organising the household, etc. (Sofer & Saada, 2017). This informal workload keeps them from being innovative or starting initiatives or enterprises (Sofer & Saada, 2017). As already stated above, women have less access to innovation funds and are less often able to build personal assets (Fhlatharta & Farrell, 2017; Sullivan & Meek, 2012). Women are less often believed or trusted and therefore supported in their ideas, as the economic efficiency of their innovation might be questioned (Alsos et al., 2013). Further perils for women in innovation are location, gender stereotyping, availability of overall services and education, and infrastructure (Fhlatharta & Farrell, 2017).

These challenges lead to the phenomenon, that women are still underrepresented in innovation and their innovative ideas are less often implemented, even though they are equally innovative in generating ideas than men (Alsos et al., 2013). This means, it is not the women who are not innovative enough, but there is a system that actively excludes women and inhibits their innovative behaviour. As there are fewer women being innovative or becoming entrepreneurs, women will struggle to find female business networks or role models from the same gender. Bell et al. (2018) argue that social networking has a strong effect on the success of innovations and Markussen and Røed (2017) state that the possibility of exchanging with role models of the same gender has a positive impact on the innovation process.

### Diverse economy

Gibson-Graham (2006) presented a model of the *diverse economy*, that illustrated the way the economy is mainly perceived in the capitalist society. The only valuable parts of a capitalist economy thereby are “wage labour, market exchange of commodities, and capitalist enterprises” (Gibson-Graham, 2006, p. 69). Whereas these elements of the economy are just a small division of what keeps our societies running, there are a lot more “activities by which we produce, exchange, and distribute values” (Gibson-Graham, 2006, p. 69). The visualization through the iceberg in figure 1 shows that the bigger part of the economy are all these activities that are not valued enough by society because they do not produce direct revenue. But it still is a major part of our economy which keeps the iceberg floating and our economy running. Gibson-Graham call for appreciation of these often forgotten elements of our economy (Gibson-Graham, 2006).

This is a feminist approach of analysing a local economy. Especially in rural economies, the “valuable” part and the tip of the iceberg are the resource-based industries, which is mainly male-dominated labour. The often-neglected elements of the economy are activities especially in rural and traditional communities are overtaken by women. As discussed above, female innovation is characterized by social aims (Rosca et al., 2020), a non-focus on growth (Sullivan & Meek, 2012), the use of local knowledge to tackle local needs (Markantoni & Van Hoven, 2012), and occurs often (but not merely) within gendered sectors such as tourism, craft or education (Fhlatharta & Farrell, 2017). The approach of including “non-market transactions and unpaid household work” (Gibson-Graham, 2008, p. 615) or non-capitalistic elements of the economy into the analysis of a community brings “marginalized, hidden and alternative economic activities to light in order to make them more real and more credible as objects of policy and activism” (Gibson-Graham, 2008, p. 613).

Acknowledging the keel of the iceberg can mean an approach to diversify the local economy without bringing in new industries. As resilience means ‘building up an adaptive capacity with already existing, local resources’, acknowledging the non-capitalistic elements of female rural innovation can enhance the resilience of a rural community.



Figure 1 The Iceberg Model with the collectively valued parts of a capitalistic economy on the top, and the neglected elements on the bottom. Community Economies Collective. Diverse Economies Iceberg (n.d.). Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License. Retrieved from <http://www.communityeconomies.org/resources/diverse-economies-iceberg>

## 2.2 Theories of research design

### Feminist theory in research

This study aims to make gender asymmetries and injustices, that influence the participation and acknowledgement of women in innovative processes, visible and shed a light on how this might influence the development of the case area. Therefore, a feminist research approach will be applied. Feminist research means, as Letherby and Jackson (2003) defined, giving the daily experiences of women value and by that challenging mainstream knowledge. A feminist standpoint to research does not just *add* women (either as researchers or researched) to the process. It begins from their perspective and therefore adopts a feminist methodological standpoint (Letherby & Jackson, 2003).

This thesis approaches gender from a social constructionist point of view, as Scott (1991), Smith (1987) and Weedon (1987) described it. Gender is an important aspect in not just personal identity construction but also in the definition of a person position in society. Gender is often brought into relation with physical attributes of the binary sexes. But as sex is a spectrum so is gender. And the affiliation or dissociation to a gender goes beyond physical attributes. These non-physical attributes are shaped and defined by the community and also shape a person's experiences and understanding of their personal, social and economic circumstances. As the community defines the characteristics of a gender, the definition varies over place and time.

A female sensitive lens in research means to make women and their cultural and historical experiences visible. It is not just *researching women*, but *research for women* (Letherby & Jackson, 2003). Feminist research means, like any other research as well, to take the empirical data seriously, but by focussing on women's lived experiences it acknowledges their academic legitimacy (Warren & Erkal, 1997). It is not just about understanding the world, but also about changing it. As Letherby and Jackson (2003) describe it: "The ultimate goal [of feminist research] is the eventual end of social and economic conditions that oppress women." (Letherby & Jackson, 2003, p. 74). By choosing a feminist approach, this study will give attention to the importance of inclusiveness in all aspects of life and research. Further, the value of the personal, private and emotions as a data source and an essential part of research will be acknowledged (Letherby & Jackson, 2003).

The approach used in this study leans closely towards the theory of *ecofeminism*, in particular towards the specification *materialist ecofeminism*. As these terms will be further discussed on

the following pages, it will become clear that in order to study innovation and its impact on rural development, the study will benefit from the connection between women and nature.

### *Ecofeminism*

As Warren (2001) stated, feminism aims to display relationships between all forms of human oppression, whereas ecofeminism on the other hand takes a step further and interweaves the domination of nonhuman nature into human oppression practices and patterns. The relationship human/nature is compared with the relationship men/women (Warren, 2001). Therefore, “[e]cofeminism is the theory and practice of examining and challenging the political, social, historical, epistemological, and conceptual links between the domination of women and the exploitation of nature.” (Glazebrook, 2014, p. 1765). There are, of course, various definitions of ecofeminism, but they all have in common, that they claim women as well as nonhuman nature are dominated by men (Warren, 2001).

Ecofeminism has its beginnings in the 1970s and roots in grassroots activism. In France and North America several scholars started a discussion about the significance of ecology and environmentalism to feminist movements (Glazebrook, 2014). Luce Irigaray mentioned in 1974 that women and nature are both dominated by men (Irigaray, 1985) and Françoise d'Eaubonne labelled this phenomenon as *l'ecoféminisme* to shed a light on the importance of women in the fight for themselves, earth and nature (Eaubonne, 1974). Sandra Marburg and Lisa Watson held a conference in 1974 called *Women and the Environment* at the University of California, Berkeley (Glazebrook, 2014) and Rosemary Radford Ruether drew a connection between the oppression of women and the ecological crises, both resulting out of male domination, in her book *New woman, new earth: sexist ideologies and human liberation* (Ruether, 1975). In 1978 Susan Griffin wrote in *Woman and Nature* about the inferiority of women and nature to men and Western culture (Griffin, 1978) and Mary Daly published with *Gyn/Ecology* a collection of dominating practices that are used to control both women and nature (Daly, 1978).

The domination of human and non-human nature is embedded in patriarchal structures and practices, that are dominant in the Western culture (Warren, 2001). Western practices are driven by rationality, knowledge, and ethics, whereas the ecofeminist theory aims to bring in an ecological and more spiritual notion to a male and Western dominated discourse (Warren, 2001).

The roots of ecofeminism describe a deep spiritual connectedness between women and nature, which led to a better nature-understanding of women but is also seen as a cause for oppression. This connectedness to nature has also been a reason for oppression of indigenous and other minority groups and groups with non-Western cultural roots, no matter which gender (Glazebrook, 2014). Even though this critical issue has been later tried to be adapted in different type of ecofeminism, it is still missing in early definitions and is not sufficiently addressed (Glazebrook, 2014). Further, as Glazebrook (2014) describes “many ecofeminists who argue that ecofeminism is not a white, middle-class academic endeavour are indeed themselves white, middle-class academics” (Glazebrook, 2014, p. 1769). Queer theorists express a concern that ecofeminism “privileges gender difference along an axis of heterosexuality” (Glazebrook, 2014, p. 1769). Over the years, more and more definitions and variants of ecofeminism were discussed in academia and three types of ecofeminism with a bigger influence evolved (Warren, 2001). They started a discussion about the role and position of women in the discourse.

### *Types of ecofeminism*

The first attempts of defining ecofeminism are now mainly called *cultural ecofeminism*. It combines the definitions (mentioned above) of Irigay, d’Eaubonne, Marburg, Watson, Ruether, Griffin and Daly (Glazebrook, 2014). The connections between women and nature were seen liberating and the work of cultural ecofeminist was an “expressions of women’s capabilities to care for nature” (Warren, 2001, p. 5495). Point of departure was the standpoint that women are closer to nature than men because of their reproductive capacities. As another reason for women allegedly being closer to nature is the embeddedness of women in social and psychological structures, as Warren (2001) states. That and their emotional reasoning makes women more suited to solve environmental problems. Even though there are of course multiple and slightly varying definitions of cultural ecofeminism, the majority of ecofeminist scholars can agree that women have a special connection to bodies and nature and this can be of help when fighting the domination of women and nature (Warren, 2001).

The cultural ecofeminism has been under critique by the *social feminists*. Social feminists do not agree with the cultural ecofeminism’s essentialism, universalism and ahistoricism. They claim that there is no universal biological and innate nature of women that is making every woman the same. Women also not all share the same experiences or knowledge and historically there not just one concept of *women*. As Warren (2001) describes it, female identities are “socially constructed, historically fashioned, and materially reinforced through the interplay of a diversity

of race/ ethnicity, class, sexual orientation, age, ability, marital status, and geographic factors” (Warren, 2001, pp. 5495–5496)

The third type of ecofeminism is the *materialist* (or *socialist*) *ecofeminism*. It forms a middle ground between cultural and social ecofeminism. Materialist ecofeminism started in the 1980s with Ariel Salleh, an Australian sociologist. Salleh connects with the beginnings of ecofeminism, by shedding a light to the importance of activism and ecofeminism in praxis (Glazebrook, 2014).

### *Materialist ecofeminism*

For decades feminism tried to fight the ideas, that women were softer, more emotional, less rational, or cultured because they were closer to nature, and therefore less capable of taking decisions or responsibility. The initial paradigms of ecofeminism were underpinning these characteristics, albeit with an adverse conclusion. Materialist ecofeminism was developed out of a critique of this so-called essentialism of ecofeminism, which describes the connection between women and nature as essential in all its spirituality, abstraction, and totalities. As Glazebrook (2014) words it, “women are reduced to their reproductive capacity and the qualities associated with it, i.e., caring and nurturing” (Glazebrook, 2014, p. 1769).

Instead, the materialist ecofeminism focusses on actual material conditions of women’s lives and their geographical location and cultural background (Oksala, 2018). It does not deny that there are biologically predisposed strong women-nature connections, but the socially constructed connections need to be considered as well. Historically, women’s biology determined the female oppression, but it is not the only reason (Warren, 2001). As Oksala (2018) clarifies, “[...] materialist ecofeminism can be understood to build on the acknowledgment that specific groups of women have a distinct connection to the environment through their daily interactions with it.” (Oksala, 2018, p. 219). Key factors of female oppression are also social, material, and political relationships, that were formed and exist between women and nature (Warren, 2001).

Letherby and Jackson (2003) state, that men’s material conditions are still better than those of women worldwide. Women are less represented in power, policy, and decision making, they work more while their labour is less valued, and they carry multiple and therefore more burden than men, because most of the care and emotion work is also carried out by women (Letherby & Jackson, 2003). Oksala (2018) states, that materialistic ecofeminism critically analyses capitalism by its focus on material and social and political relationships. The historical exclusion

of women from industrial and economic development led to an alleged vicinity to nature and a longstanding disadvantage in a materialistic and capitalistic system (Oksala, 2018).

### *Application*

The materialist ecofeminist lens was chosen for this study because the case area is a rural region, which economic development has been natural resource related. For centuries, the coastal communities of the Westfjords' main industries were sheep farming, fisheries, and fisheries ancillary services. The exploitation of nature was the only way to subsist, and as fishery is tough manual labour, strong gender roles resulted from this, where men would sail out to sea and women would stay on land, run the household and the farm, do care work, and work in the fish factories. Women therefore always had important roles in the maintenance of subsistence. But they were dependent on the men bringing in the main resource to be then further processed.

The resilient development of rural communities nowadays does not rely solely on natural resources anymore; but due to the longstanding dominance of the agricultural sector one can assume, that strong gender roles are still predominant. These roles still affect the way women are caring for the place and the society. It is interesting to investigate whether women have a different spin on innovation as their social, educational, and professional upbringing might still be very dominated by cultures and traditions tracing back to the *golden ages* of the local fishing industry. Especially amidst the fact that Iceland yet again has been ranked the most gender equal country in the Global Gender Gap Report 2021 (World Economic Forum, 2021).

### *Case study*

A case study is a method that helps to understand a phenomenon within its real-world context where “the boundaries between phenomenon and context may not be clearly evident” (Yin, 2018, p. 15). The research within the real-world context allows to draw linkages between an abstract concept with events and decisions in the real world, which can be important to understand the phenomenon (Yin, 2018). The case study allows a deeper focus on local features and characteristics and findings can be brought into relation with already acknowledged theories in order to gain comparable results. As Bryman (2015) states, a case study does not just allow a deeper focus, it requires an intensive assessment of a single case; whereas *case* is seen in the context of *location* in a broader sense. A case therefore links to for example an organization or community.



Within academia there exists a certain contempt towards case studies (Yin, 2018). As Yin (2018) describes, one concern is that a case study might not be scientific and objective enough in order to draw valid conclusions. A case study needs to follow a strict research design as every other scientific study as well. If this is the case, a case study is as scientific and creates valid data and conclusion as for example an experiment (Yin, 2018). Another very common concern is that one cannot generalize from case study research. First, as multiple scholars state (Bryman, 2015; Flyvbjerg, 2006; Yin, 2018) a study does not have to be generalizable and even experiments are in many cases not. An experiment can be generalizable within the pre-set limitations, and a case study can be generalizable within its local context. Also, compared to an experiment a case study at the most aims to reach analytic generalization, which means the goal of the study is to expand and generalize theories. Further, a critique might be, that findings from case studies are not comparable within its research field (Yin, 2018). But as already stated above, a case study does not necessarily aim to produce comparable data, but instead to give a deep insight into a phenomenon within its local context.

As Flyvbjerg (2006) and Yin (2018) describe there are several ways of choosing a case for the case study. In this study the case area of the Westfjords in Iceland was chosen according to the principle of a critical case according to Flyvbjerg (2006). A critical case has “strategic importance in relation to the general problem” (Flyvbjerg, 2006, p. 229). If a phenomenon is found to be true in a critical case it is most likely to be true in other cases as well, or the other way around. Iceland ranks at the top of the Global Gender Gap Report 2021 and is rated as the country with the highest gender equality index (World Economic Forum, 2021). Women in Iceland seem to have the most equal chances regarding education, work, and general life choices. The consideration of choosing a rural region in Iceland to research female innovation in rural areas is if the situation of female innovation in Iceland is worthy of improvement, then it is most likely worthy of improvement in at least other Nordics, but probably all over the world. It was decided to choose the whole region of the Westfjords as a case area instead of one particular community in the region. The region is very sparsely populated, the total population is less than 7.500 inhabitants (Statistics Iceland, 2021c). The communities have a population between 50 and 600 inhabitants except for Bolungarvík with 927 inhabitants and Ísafjörður with 2.660 inhabitants. As the study looks at women that are innovative in their home community, it was decided that within one community a representative sample size might not be reachable.

## 2.2 Methods

The qualitative approach of this case study enables an exploration of the actual conditions in the case area, which will indicate the contextual circumstances that led to the existing conditions (O’Leary, 2017). The collected data then can be used to explain all contributing factors. (O’Leary, 2017) As the research question has an explorative character, the collection and analysis of qualitative data makes a connection between different concepts and an inductive concluding process possible (Yin, 2018). In the conceptual framework the author developed an umbrella of concepts, with which the collected and grouped data can be interlinked.

### Interviews

The primary data is collected through interviews of female innovators in the case area. Interviewing relevant stakeholder groups to gather information is one of the most important way of data collection in case studies (O’Leary, 2017). An interview gives the opportunity to target specific issues and topics that a one sided literature review or document analysis might not be able to unfold (Flick, 2018). As this study captures the various perspectives of different study participants, it follows a *constructivist* approach, which implies that realities are constructed by the societal structures around us and can differ depending on upbringing and experiences (Yin, 2018). With its *relativists* perspective this study acknowledges that multiple realities exist and that findings can have multiple meanings.

Qualitative, semi-structured interviews were selected as the primary data collection method. With its open structure without a strict questionnaire a semi-structured interview gives the opportunity to have a conversation on an equal footing with the participant (Bryman, 2015). This is important when doing research with a feminist approach. The feminist approach should be without hierarchies to be able to record the interviewee’s personal experiences (Rossmann, 1999). An interview guideline gives enough structure to make the interviews comparable, and the open character of the conversation leaves enough room for further questions from the interviewer or experiences, the interviewees want to put a special emphasis on (O’Leary, 2017; Rossmann, 1999).

The study aims to research the experiences of female innovators in the case region. Therefore, an open conversation was chosen, so the interviewees could express all kind of positive and negative experiences such as support they received from their surroundings, or obstacles they faced during their innovation processes. The interview gave insights of the specific perspectives

of female innovators who could share their personal experiences. This individual knowledge cannot be gathered through methods that leave the experts (in this case the female innovators) out of the process (Ritchie et al., 2014). The interviews examined the interviewed woman's role in her community, how they are active or innovative, what they think the community needs in general, where they experienced challenges in their innovative processes and where they were able to find support.

## Implementation

The interviews were conducted in April 2021 and the participants lived in different communities within the Westfjords region. As the study wants to shed a light on female rural innovation, only women were interviewed. The study took place in a rural and remote area, where traditional cultures and perceptions are still predominant. Even though in academia as well as in societal discourses, gender is more and more acknowledged as a spectrum, for this case study in acknowledgement of the local discussion of strict gender roles, it was decided to have a more distinct division between *men* and *women*. Therefore, only women where the gender and sex assignments aligned were contacted. The decision was made to examine experience of women, who were also brought up as girls and women in the society and therefore have similar experiences regarding gender inequalities in their upbringings. Another criterium for the participants was that they had to be women living in a community in the Westfjords and are active in any kind in their community. The interviewees were chosen through a snowball sampling system, starting with female innovators in the region that the author already identified and then later being guided by recommendations of the earlier interviewees. The first people were contacted via email and further contacts were gained through the interviews. The contacts received an email or a Facebook message with a description of the project and an outline of the interview.

Even though the interviews were in the beginning planned to be held in person, due to stricter Covid-19 prevention measures regarding meetings in Iceland in the end of March 2021, the decision was taken to hold as many interviews as possible via Zoom or other online video call programs. In the end seven interviews were held via video call and one in an in-person meeting. As mentioned above, the interviews were all recorded. In order to follow privacy and data regulations, the interviewees were asked orally beforehand for their consent to record the interview, use the recordings and statements for the data collection of this thesis and save the anonymised recordings as well as contact information for the time of the research.

The interviews were held in a half-open, semi-structured style. That put an emphasis on a more conversational and relaxed atmosphere and encouraged the women to say freely whatever they thought was relevant. However, an interview guideline (see appendix A) gave a structure, so the interviewer was still able to manage the interviews towards the topics that were relevant for the study. The guideline was sent to the interviewees beforehand. All the contacted women were Icelandic native speakers. Even though all the women agreed to have the interview in English and therefore seemed confident enough to express their thoughts and experiences in English, the interview guideline was sent to them beforehand, so knew about the questions, take some time to prepare and maybe look up certain English terms and therefore might have felt more comfortable during the interview.

The interview questions were focussed regarding the women's personal backgrounds, their work life, gender roles in the area, belonging to and responsibility for the community, needs of the communities, attitudes towards change and innovation and local and national networks. Each interview took between 20 and 55 minutes and was recorded and transcribed. To ensure the women's confidentiality in these very small and tight-knit communities, the real names of the women and their communities were not saved or used later in the report, and there is nothing in the data that can be used to identify them.

## Thematic analysis

The interviews were thematically analysed. The term *thematic analysis* is not universally defined and the literature about this approach is still insufficient. A study using thematic analysis is "identifying, analysing, organizing, describing, and reporting themes found within a dataset" (Nowell et al., 2017, p. 2). The data set in this study were the transcripts of the interviews. A thematic analysis is useful to summarize key features and draw connections and conclusions from a big amount of qualitative data (Nowell et al., 2017).

The analysis followed roughly the proposed six phases of a thematic analysis by Nowell et al. (2017). The following part will describe the phases and how they were applied in and/or altered for this study.

In phase 1 according to Nowell et al. (2017) the researcher gets familiar with the data. That means to read all the gathered data actively and look out for similar meanings that could form patterns. In this study the interviews were, as already mentioned, recorded. The recorded audio files were then transcribed via the online tool temi.com. As this software did not give fully

accurate transcripts, the transcripts were reviewed before further analysed. The transcripts then could be read thoroughly and searched for outstanding statements, similarities, and patterns.

After the first reading of the material initial codes were generated, which in this study is referred to as *coding*. That fits into phase 2 of Nowell et al. (2017) where, as they describe, important sections are identified and assigned to labels depending on their meaning and relation to each other.

Coding breaks down a text into several more manageable parts which than can be clustered with one or more keywords (Kvale & Brinkmann, 2009). This helps to organize statements and to find patterns and even theories in documents, or in this case in interviews. Coding can also be used to quantify statements and therefore make a point by putting an emphasis on how many times certain statements were mentioned. Codes should be short and precise to not give space for too many not very similar statements to be clustered under the same code. There are several approaches and tools how to code a document, from colour coding on printed paper to coding with the help of computer software (Kvale & Brinkmann, 2009). Computer programs can be helpful to sort and organise big amounts of data (Nowell et al., 2017). In this study the transcribed interviews were coded with the software MaxQDA. The program facilitates the process of coding and helps in keeping an oversight over the multiple transcripts. Figure 1 shows a screenshot of the software's panel, with the list of analysed documents on the top left, the list of all codes on the bottom left and the analysed transcript on the right side of the panel.

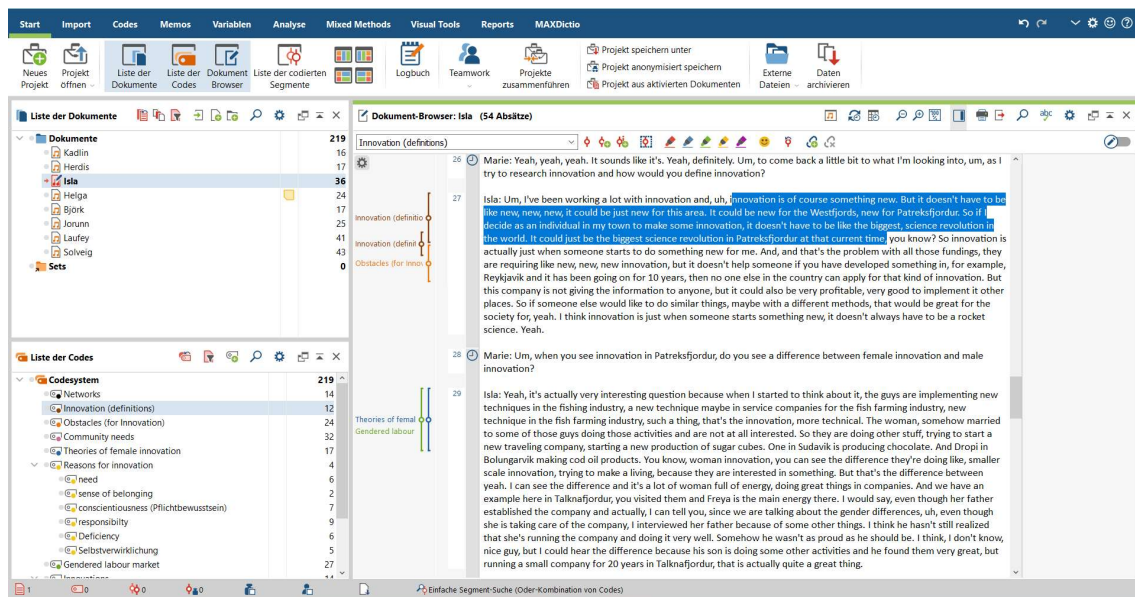


Figure 2 MaxQDA panel, showing typical application in the studies analysis process [screenshot].

Since the whole study and the research questions are inductive, the data treatment was of explorative nature and the developing of codes was data driven. That means, the initial interview guideline was altered during the research process, because the interviewer realised, that there are more and other important issues to be discussed than initially planned. Therefore, questions regarding the needs of the communities and networking between innovators were added after the first interview. Also, the data collection with the transcripts was inductive. The transcripts were explored, and statements were clustered when they fit together thematically. The transcripts then were read another time and looking for more statements fitting into these codes. With the help of the program MaxQDA the transcripts therefore in the end had colourful mark-ups (each code had a colour) and the statements or quotes were exported as clusters to a lucid word file. The final codes are displayed in table 1.

Table 1 Visualization of the codes and their meaning.

Code	Meaning
Networks	Support systems, funds, workshops, formal and informal networks
Innovation (meaning)	How do the interviewees define innovation?
Obstacles (for innovation)	Experiences that hindered the interviewees innovative processes
Community needs	What do communities in the region regarding local development need the most?
Reasons for innovation	What motivates the interviewees to be innovative?
Gendered labour market	Experiences of the interviewees regarding the meaning of sex and gender in the local labour market
Innovations	How are the women innovative? What did they start?
Gender roles	Experiences of the interviewees regarding gender roles in the region

The code *reasons for innovation* was further divided into several sub-codes, which can be seen in table 2.

Table 2 Visualization of the sub-codes for innovation and their meaning.

Sub-code	Meaning
Need <i>Bedürfnis</i>	Interviewees were innovative because they or more community members felt the desire for a service or product
Deficiency <i>Notwendigkeit</i>	Interviewees were innovative because a service or product did not exist (anymore), so a new solution was needed. Development of new ideas that did not exist (anymore) in the community.
Sense of belonging	Interviewees were innovative because they felt a strong connection to the place and wanted to express that.
Conscientiousness <i>Pflichtbewusstsein</i>	The interviewees were innovative because a service was needed or the community faced a challenge, but no one else in the community would take care of it.
Responsibility	Interviewees were innovative because they felt responsibility for the community's development.

Individual fulfilment	Interviewees were innovative because they wanted to fulfil an individual dream.
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The sub-coding helped to identify reasons for innovation and made a comparison with theories of female innovation later in the process more manageable. Parallel to the coding process already first thoughts for the upcoming analysis and interpretation of the statements were written down.

Nowell et al. (2017) describe phase 3 as the phase where themes are searched for or created. That means codes are clustered by meaning into themes. In phase 4 the themes get reviewed and in phase 5 the themes are defined and named. In this study the sub-research questions formed the themes. Therefore, the three phases were approached differently in this study. The identified codes were assigned to the three sub-research questions.

In the last and 6<sup>th</sup> phase of the analysis the report is produced. The report presents the data within and across the themes in an interesting, logical, and coherent way. The collected and sorted data and its patterns were described and interpreted in relation to the theoretical framework. Through referring to the literature valid arguments can be built and broader meanings and implications of the data can be theorized (Nowell et al., 2017). In this step the quotes from the assigned codes were interpreted and analysed and the outcomes were linked to the theories collected in the theoretical framework. Table 2 shows which codes and which papers were used to answer the sub-questions. Some quotes with filler words or extra information were shortened for better understanding. This was marked with squared brackets and three dots ([...]). When parts of the transcript were either inaudible or it is unclear what the interviewee is referring to, an explanation was added in between square brackets.



Table 3 Visualization of the codes and the main literature used to answer each sub-question.

Sub-Question	Codes	Theories
<b>What characterizes rural female innovation?</b>	Innovation (definitions) Innovations Reasons for innovation Networks	<u>Social innovation</u> (Brandsen et al., 2016; Eversley, 2019; Neumeier, 2012, 2017) <u>Female innovation</u> (Andersson et al., 2012; Bock, 2004; Fhlatharta & Farrell, 2017; Markantoni & Van Hoven, 2012; Ranga & Etzkowitz, 2010; Rosca et al., 2020) <u>Rural innovation</u> (Baregheh et al., 2009; Camagni, 1995; Gamito et al., 2019; Madureira & Torre, 2019; Markantoni & Van Hoven, 2012)
<b>How does female innovation contribute to rural development?</b>	Community needs Innovations	<u>General challenges of rural communities</u> (Dijkstra et al., 2013) <u>Rural development</u> (Dijkstra et al., 2013; Eversley, 2019; Gamito et al., 2019; Lundvall & Maskel, 2000; Uyarra & Flanagan, 2014)

		<u>Female and rural innovation</u> (Baregheh et al., 2009; Camagni, 1995; Gamito et al., 2019; Madureira & Torre, 2019; Markantoni & Van Hoven, 2012)
<b>How does the women's reality of life influence their innovativeness?</b>	Gender roles Gendered labour market Obstacles (for innovation) Networks	<u>Female and rural innovation</u> (Baregheh et al., 2009; Camagni, 1995; Gamito et al., 2019; Madureira & Torre, 2019; Markantoni & Van Hoven, 2012)

The final analysis and the processing of the three sub-questions reveals what the data and themes said in an organized way about the overall problem. The main research question is "What characterizes female innovation in rural development and how can a feminist approach to innovation enhance the resilience of rural and resource-dependent communities?". This was answered with the help of the data collected for the sub-questions. This study analysed the experiences of female innovators in the case area. Then, it explored how the concepts and tools of enhancing the innovativeness of a region need to be approached to include women and meet their challenges in the innovative process. The concept of an innovative region was questioned, aiming to add a female perspective with the help of the knowledge and experiences from the interviewees.

## Reflections on the method

As stated above, the interviewees were contacted through email and later through Facebook messages. The second approach showed to have a higher and quicker response rate than contacting via email.

As Bryman (2015) states, online interviews have multiple advantages but also disadvantages compared to interviews in person. The switch from the interviews being mainly planned to be conducted in person to mainly online interviews benefitted the research process, because it saved time travelling to several remote communities, and the audio quality of recorded video calls turned out to be much better than the ones from in-person conversations. Further, appointments for interviews were made more spontaneously because neither the researcher nor the interviewee had to leave their home or workplace for the interviews. On the other hand, the online interviews hindered a more observational approach of the interview and might have had an influence on the length and the conversation style.

A further obstacle in the research process was a language barrier. Even though the interview guideline was sent to the interviewees beforehand, some participants seemed to not be able to fully express what they wanted to express. Also, the transcription software temi.com had problems understanding the Icelandic accent.

The language barrier was noticeable as well in the literature research for the local context. A lot of publications and information online about the region are in Icelandic. Articles and homepages were translated with the online tool Google Translate from Icelandic to English, which was helpful. But this method might lead to information being lost in the translation process.

## 2.3 Local context

The chapter *local context* gives a brief description of the case area and outlines the setting of women in the labour market and women in rural areas in general in Nordic countries, in Iceland and in the case area specifically. Therefore, the chapter will investigate gender alongside the following factors: internal migration, education with a focus on academia, labour, public policy, and gender roles in rural areas.

## Case area

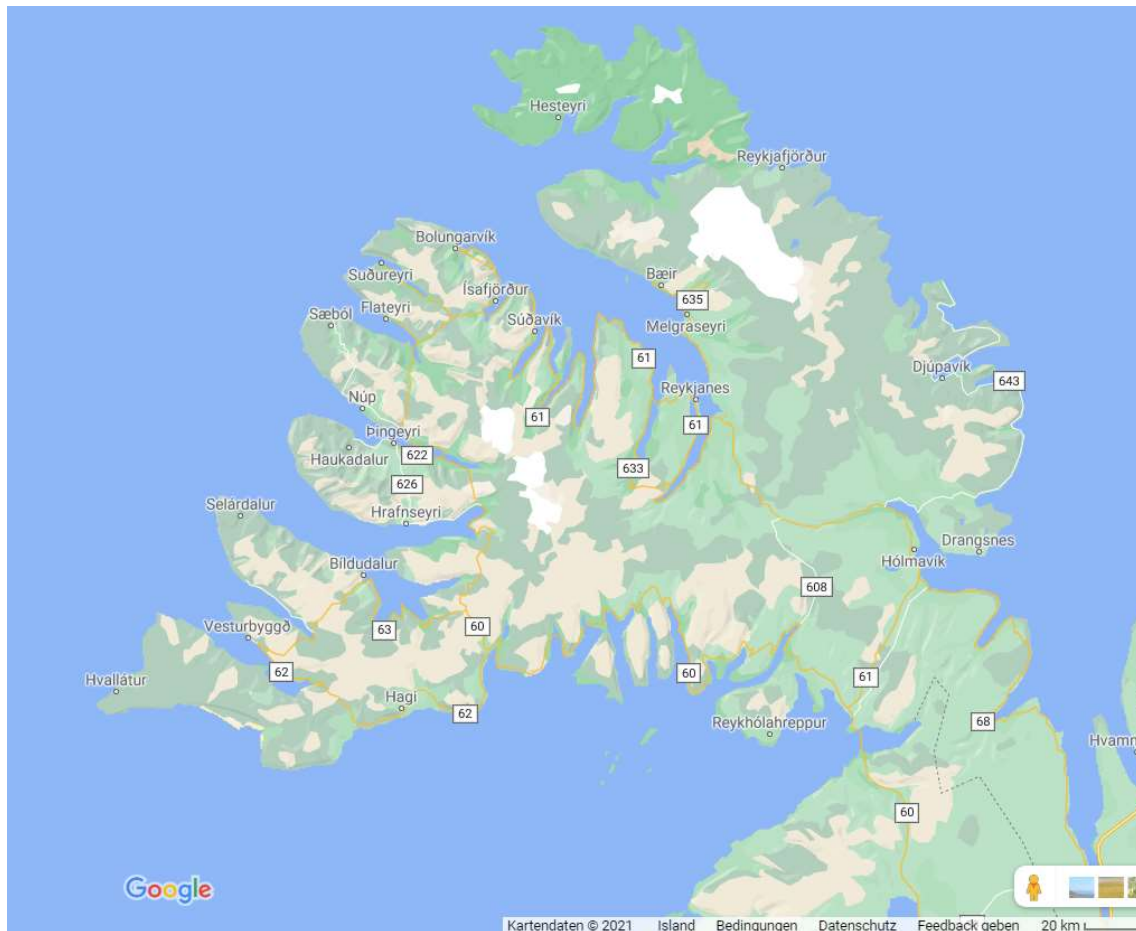
The case study takes place in the region of the Westfjords in Iceland. Figure 2 shows Iceland, where the Westfjords are in the north-west part. With only 7.108 inhabitants (Statistics Iceland, 2021b) on 22.271 km<sup>2</sup> land it is a very sparsely populated area.



Figure 3 Map of Iceland with biggest towns and the main road system. Google (n.d.-a). [Map of Iceland]. Retrieved from <https://www.google.com/maps/@65.534063,-24.1909783,6.49z>

There are nine municipalities in the Westfjords: Árneshreppur, Bolungarvíkurkaupstaður, Ísafjarðarbær, Kaldraneshreppur, Reykhólahreppur, Súðavíkurhreppur, Strandabyggð, Tálknafjarðarhreppur and Vesturbyggð. Figure 3 gives an overview over the region and the location of the towns. The region hosts several small communities with populations mainly between 40 and 400 inhabitants, and several bigger communities like Ísafjörður with 2.660 inhabitants, Bolungarvík with 927 inhabitants and Patreksfjörður with 679 inhabitants (Statistics Iceland, 2021c). Overall, the region can be described as rural with the supply centre in the town of Ísafjörður in the north-west of the region. Ísafjörður offers several services such as all levels of education, a hospital, and further health care, cultural entertainment, and sport facilities. The communities are economically as well as culturally shaped by the strong history of fishing. As

the fishing industry has been the leading economic driver in the region, all communities are located and the shoreline with harbours as the centres of the town (Skúladóttir et al., 2020). Other sectors, such as tourism and the local food culture has evolved around that culture too.



*Figure 4 Map of the Westfjords with important communities and the main road system. Google (n.d.-b). [Map of the Westfjords]. Retrieved from <https://www.google.com/maps/@65.8737664,-24.2181504,8.33z>*

The region suffered population loss for many decades due to the decline in the fishing industry. From over 10.000 inhabitants in the whole region in 1981 the population went down to as mentioned above 7.115 in 2020 (Statistics Iceland, 2021b). However, in the last decade a little upwards trend is noticeable after a historic low with 6.955 inhabitants in 2011 (Statistics Iceland, 2021b). This low is most likely to be explained with the financial crises that hit Iceland hard and led to migration from rural areas to urban areas but also to overall outmigration from Iceland (Nilsson & Jokinen, 2020).

The landscape is shaped by high mountains fjords and peninsulas. The rough landscape makes the area hard to access by road, because the road system needs to overcome several mountains

passes and follows the fjord outlines. Especially during the winter, the region is almost inaccessible, with road connection cut off after heavy snowfall and flights cancelled due to poor visibility, wind, and storms. After storms, other infrastructure such as electricity and internet connections may be subject to damage during this season. These harsh conditions and the effect on the transportation system have an impact on the connectivity between the communities and between the region and Reykjavik. This hinders access to services in other communities (Skúladóttir et al., 2020) and cooperation between local enterprises and the capitol region (Karlsdóttir et al., 2012).

## Gender roles

Edvardsdóttir (2013) paints a conservative picture of women and their roles in their communities in the Westfjords. Communities in the Westfjords are male-dominated and favour male values such as hard labour in fisheries and construction over female values such as care and social work. As fisheries have been the dominating industry in that region, households have been historically organised by women (Edvardsdóttir, 2013). The men stayed out at sea for multiple days or even weeks in a row, which left women to organise the household and farm work and take care of the upbringing of the children and community organisation (Skaptadóttir, 2000). As Skaptadóttir (2000) further describes, these very segregated duties in the communities led to gender stereotypes but also a certain local pride. A strong local identity that women in the Westfjords are proud of is being a good full-time housewife, whether your husband was a fisherman or not. On the other side, men that are working long hours in hard labour and stay away from their families for days or weeks are perpetuating the image of a *real men* in the fishing villages (Skaptadóttir, 1996).

Both Edvardsdóttir (2013) and Skaptadóttir (1996) discovered, that fisheries is seen as a male industry where women do not fit in, so historically men had more control and ownership over natural marine resources, in this case the sea. This leaves women in a subordinated position which has effects on their roles and standing in the community. Even though women had a role in fisheries for centuries as workers in fish processing plants, new technology leads to a decrease of jobs in that sector, which pushes women out of that specific work (Edvardsdóttir, 2013). This, as she further describes, exacerbates the role of the men and the importance of their jobs, and even young women tend to out-migrate in order to gain higher education – as soon as they have stronger family bonds, such as marriage and/ or children, the location of the man's jobs dictates where the family lives and stays. The younger people are leaving the communities to get a

university degree, but as already mentioned above, there are very limited jobs that require an academic degree in the communities of the Westfjords (Edwardsdottir, 2013).

This is backed up by the Icelandic media. Studies show that women appear more often in news about social issues, whereas male voices are more prevalent in articles about science and economy. This maintains or reinforces traditional stereotypes (Jafnréttisstofa, 2017).

### Gender and migration

In the general population of the Capital Area, there are about 101 women to every 100 men but on average only 96 women to every 100 men in other regions of the country (Jafnréttisstofa, 2017). As shown in figure 4 this imbalance is also existent in the Westfjords. Drangsnes is the only exception with more women than men, and Þingeyri is the only balanced community. It needs to be mentioned, that some of the mentioned communities just have a population below 100 inhabitants, so the balance can quickly change. Nevertheless, the overall imbalance in this region is striking. The imbalance leads back to more women migrating from the region and being less likely to return.

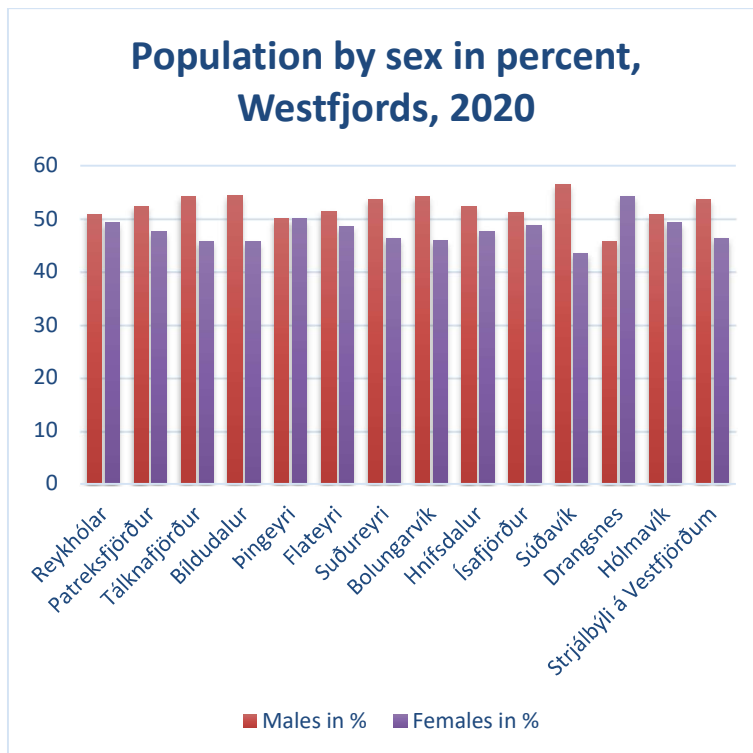


Figure 5 This diagram shows the gender ratio in percent in the communities of the Westfjords region. Statistics Iceland (2021b). Population by sex in percent, Westfjords, 2020. Retrieved from [https://px.hagstofa.is/pxen/pxweb/en/lbuar/lbuar\\_\\_mannfjoldi\\_\\_2\\_byggdir\\_\\_Byggdakjarnar/MA N030102.px/table/tableViewLayout1/?rxid=49fa27bc-1539-4b23-a450-32e694478fc1](https://px.hagstofa.is/pxen/pxweb/en/lbuar/lbuar__mannfjoldi__2_byggdir__Byggdakjarnar/MA N030102.px/table/tableViewLayout1/?rxid=49fa27bc-1539-4b23-a450-32e694478fc1)

In the Nordic countries, there is a trend of women leaving rural areas (Bjarnason & Thorlindsson, 2006; Thidemann Faber et al., 2015), leading to noticeable gender imbalances in several communities. The female migration is mainly connected to education and the labour market in rural areas. The lack of higher education opportunities and specialized occupation in the region make young people in general move out of the region and stay in more densely populated areas (Eydal et al., 2016). Gender roles and implications of women in rural communities might also play into the wish of leaving rural communities.

Figure 5 shows the average internal net migration in Nordic countries. One can see that almost all rural areas are suffering from negative net migration. In the Westfjords this phenomenon appears as well, apart from the municipality of Patreksfjörður with a balanced net migration.



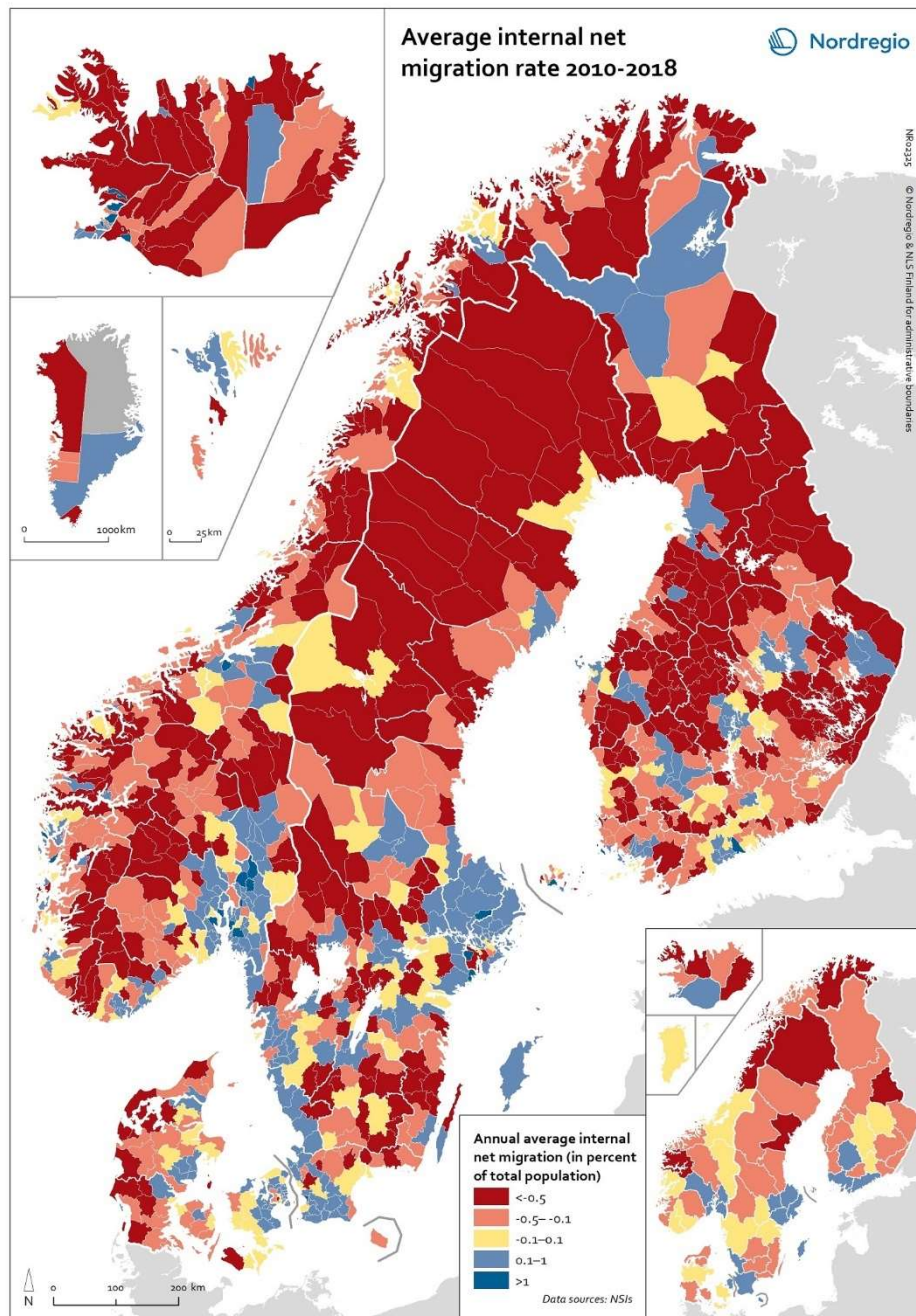
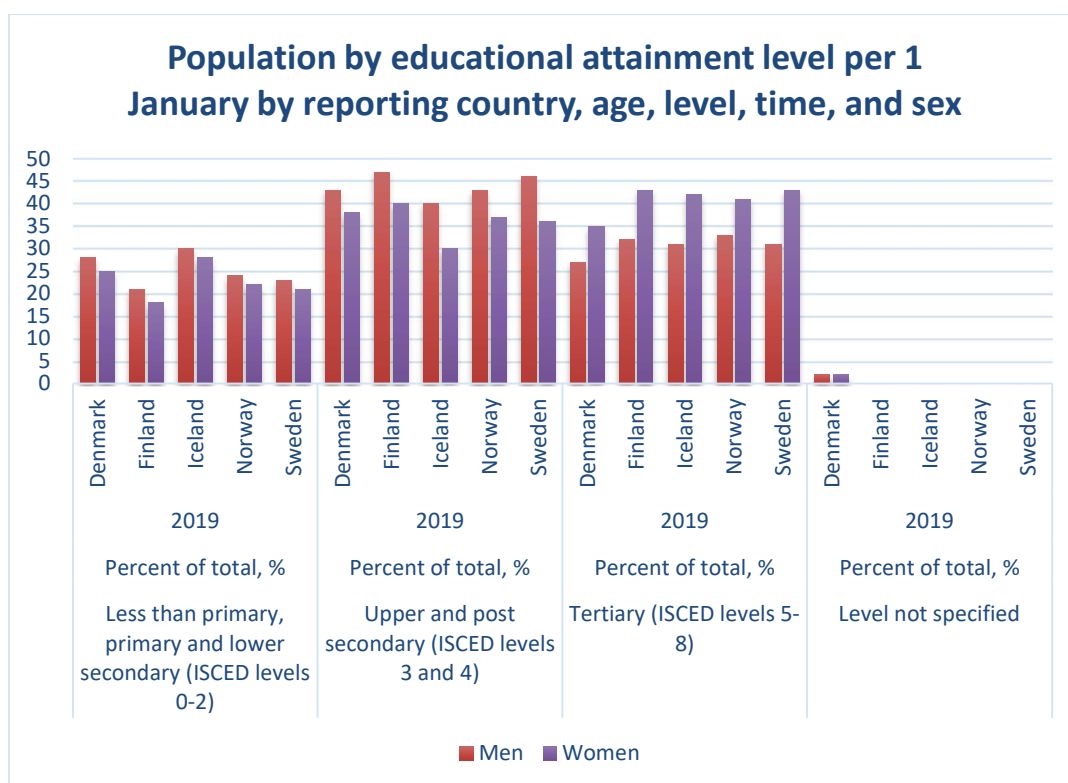


Figure 6 This map shows annual average internal net migration rate at the municipal and regional level in 2010-2018. Jokinen (2020). Internal net migration as percentage of population 2010-2018. Retrieved from <https://nordregio.org/maps/net-internal-migration-as-percentage-of-population-2010-2018/>

## Gender and academia

Women in Nordic countries are having a higher average educational level than men (Nordic Statistics, 2019; Thidemann Faber et al., 2015). Figure 6 shows that in Denmark, Finland, Iceland, Norway, and Sweden more men having education level less than primary, primary up to post-secondary level, whereas more women achieve a tertiary level education.



*Figure 7 This diagram shows the educational attainment of total population aged 15-74 of the countries Denmark, Finland, Iceland, Norway, and Sweden. Data is compiled according to International Standard Classification of Education (ISCED) 2011 classification (level 0-2, 3-4 and 5-8). Nordic Statistics (2021). EDUC11: Population by educational attainment level per 1 January by reporting country, age, level, time and sex. Retrieved from <https://www.nordicstatistics.org/population/>*

As the figure shows, also in Iceland this difference between gender in education is prevalent. It seems that the divide between women and men in education is growing. In Iceland 28,8% of all women under the age of 74 hold a university degree, compared to 21,7% of all men under 74 (Jafnréttisstofa, 2017). The study of Jafnréttisstofa further shows, that in the age group from 25-29 41% of all women have a university degree, whereas just 23% of men finished a university education. What stands out is, that even though that 60% of all graduated master's degree

students in Iceland are female, the ratio of candidates who apply to become a PhD candidate is balanced.

The imbalance when it comes to education in Iceland is even higher in rural areas. In the capital region of Iceland 136 women to every 100 men pursued a university education, whereas in the other regions of Iceland it is 165 women to 100 men (Jafnréttisstofa, 2017). Women tend to pursue their education to higher levels, which is usually not offered in sparsely populated areas. Therefore, they move to the urban centres to get a higher education than they would be able to achieve in their hometowns (Thidemann Faber et al., 2015).

The educational situation in the Westfjords has improved in the last years. In Ísafjörður there are a national high school and the University Centre of the Westfjords, which offers besides two master programs and professional training also facilities for distance learning with other Universities in Iceland. The University of Iceland runs two research centres in the region, each one in Patreksfjörður and Bolungarvík and Flateyri there is a Folk High School after the Danish *Folkehøjskole* model.

## Gender and labour

In the Westfjords the fishing industry and associated industries are still the main creator of capital wealth and the biggest employer in the Westfjords (Skúladóttir et al., 2020). After the implementation of the fishing quota system in Iceland a lot of communities in the Westfjords were left with very limited fishing quotas. This led to a massive decrease in employment in the sector (Smáradóttir et al., 2014). As the communities are built around the fishing culture and the communities struggled in adapting to this shock, other marine resource related industries such as fish farming and seaweed farming are growing (Skúladóttir et al., 2020). Historically the fishing sector has been male dominated, besides the on-land fish processing which has historically mainly been carried out by women (Eydal et al., 2016). But as this part of the industry is technologically developing, jobs for women in the fishing sector are decreasing. The opportunities in the fishing sector are generally mainly unskilled and physical challenging labour, except for very few management positions. These factors lead to limited job opportunities for women in the dominating industry in the Westfjords.

Another growing sector in the Westfjords is tourism. Even though the region of the Westfjords is not yet touristic fully developed, Iceland was growing as a tourist destination pre-Covid.

Several hotel and touring companies are located in the Westfjords (Skúladóttir et al., 2020) and further development after the global pandemic can be expected.

High skilled jobs in other industries are also rare in rural areas. The lack of high skilled job opportunities exacerbates the gender imbalance and fosters strict gender roles (Bock, 2004), of men pursuing hard labour as this does not require a high education level and pays well. Women however pursue more *female* dominated occupations like care-taking and teaching or even staying at home and doing unpaid care work (Drange & Egeland, 2014; Ellingsæter, 2013).

Further, when unemployment hits a rural community, men tend to look for seasonal work to overcome the times of unemployment, whereas if women are not bound to the place (e.g. through family strings), they tend to move away and look for work in other places (Thidemann Faber et al., 2015). On the other hand: Women in-migrate for marriage, men in-migrate for work - if work declines, men have a bigger freedom to move away, whereas the women are more connected to the place through family and therefore might stay in the community (Júlíusdóttir et al., 2013). In especially remote communities traditional gender roles are actively kept alive and therefore limit the thought and plans for younger women on breaking out of these roles (Bock, 2004).

Nordic countries already took many steps to a more gender equal society. The Nordic welfare model facilitates women's labour market participation and men as carers (Eurostat, 2020).

### Female innovation in Iceland

Also, in the innovative environment in the Nordics one can find differences between the genders. In the Nordic countries, fewer women than men start their own businesses. In Iceland just 28% of entrepreneurs in 2017 were female and 16% of the men and just 8% of the women were entrepreneurs in the total active labour force in 2012 (Grünfeld et al., 2020).

The focus of female lead enterprises is on sectors that are already female dominated, such as health care, education, care and nursing, and culture. There are less women being entrepreneurial active in sectors such as transportation and construction, which are traditionally male dominated fields. As Grünfeld et al (2020) discovered, the industries women are more active in as entrepreneurs are industries with physical contact or where physical proximity is essential. Therefore, female entrepreneurs were significantly on risk when the global pandemic of Covid-19 hit, and a lot of countries put out recommendation of keeping physical distance in order to reduce a risk of infection (Grünfeld et al., 2020).

Further, female enterprises in the Nordics do not seem to do well in terms of economic growth and only 26% of all entrepreneurs in the Nordics employing others are female (Grünfeld et al., 2020). As they go on, female enterprises are not necessarily planned with economic growth, and therefore male enterprises reach economic growth faster than female led enterprises.

As Skaptadóttir (2000) describes in her case study about women coping with change in an Icelandic fishing village in the Westfjords, women in the Westfjords are innovative and organise organised things in their towns, like stakeholder meetings and events to have more activities in the villages. The women in the case study organised multiple meetings to discuss with local and national stakeholders the closing of the local fishing plant and opened a handicraft centre and tourism information. They sold local designs inspired by traditions and thereby strengthened local identity and created jobs for the community (Skaptadóttir, 2000).

In Iceland there are multiple organisations supporting people that are starting a company. The “Innovation Center of Iceland”, which was supposed to be closed in the end of 2020 (Ármann, 2020), has held workshops, consulting services, and helped with grant application through specific workshops. Some of the services have been specifically targeting female entrepreneurs (Grünfeld et al., 2020; Nýsköpunarmiðstöð Íslands, n.d.). The centre was supposed to be closed after 12 years of operation in order to improve public services for entrepreneurs (Ármann, 2020).

Since 1991 the Icelandic Ministry of Welfare offers a yearly grant to support female entrepreneurs. The grant is called *Svanni* and its aim is to encourage female innovators to start their own business. It is intended for women entrepreneurs or companies owned by them. The conditions for grants are that the projects are majority owned by women, managed by them, and involve novelty or innovation of some kind. The grant offers business loans for expenses in marketing, product development, and new ways in production. In order to receive the grant, the entrepreneur has to apply with information about the project, innovative aspects, the rate of job increase, value creation, the business plan, a risk assessment, and the current financial status of the enterprise (Atvinnumál kvenna, n.d.). In 2021, 300 applications were received, and 44 projects received grants in the amount of ISK 40,000,000 (Atvinnumál kvenna, 2021).

The Association of Women Business Leaders is a non-profit professional network for Icelandic women in business (Government of Iceland, n.d.). It was created in 1999 with the aim of promoting female leadership, female entrepreneurship, and innovation. The association offers

a network to exchange ideas, share experiences, get education in how to start a business and to raise awareness for women in the business and start-up world.

### 3 Analysis

The analysis presents the collected data from the interviews with the local innovators. This part is divided by the sub-questions which will be answered by using the data and a comparison with the definition from the theoretical framework. Each sub-question chapter ends with a brief interim summary.

#### 3.1 Essence of rural female innovation

This part of the analysis will unfold the meaning of female innovation in rural communities and will answer the first sub-question “What characterizes rural female innovation?”. The participants were asked how they define innovation and for their motivation of being innovative and actively participating in their communities.

The women in the Westfjords are active and take change into their own hands. They use innovation to address social issues in their communities or in their personal life. “In the Westfjords I would say we have quite many powerful women, like doers, they get things done, they run their own small companies” (Helga).

In this context innovation is something new, either a new product or a new approach. But innovation in the rural context is something, that is new to the region or the community, like a café or a bike workshop. A product or an approach might exist and work already in another part of the world, but as the case area is a remote place and a harsh environment – regarding climate as well as the economic situation, a lot of services or products do not work or exist as they do somewhere else.

Innovation is of course something new. But it doesn't have to be like new, new, new, it could be just new for this area. It could be new for the Westfjords, new for [this community]. So if I decide as an individual in my town to make some innovation, it doesn't have to be like the biggest, science revolution in the world. It could just be the biggest science revolution in [this town] at that current time (Isla).

Also, the activity or business might not be a new idea, in a rural and remote context one needs to be more innovative when it comes to carrying out that idea. Gamito et al. (2019) also state that a venture in the rural context does not have to be ground-breaking new. Rural and remote communities are lacking connectivity to urban centres and within each other. In the community

there are less customers compared to an urban context or it might be more complicated to get access to material and resources, which means they face challenges in supply and demand. Several services and their existence are obvious in urban settings or taken for granted. But in rural, remote, and sparsely populated areas these services do not exist, because they might not be profitable with just a small number of customers. Not just offering these services, but also finding a way to make them work and sustain through collaboration or new creative approaches is a quintessence of rural innovation. As Solveig says, it is about the collaboration of people and the gathering of their ideas together to find these creative approaches: “I think it's often just looking at things from new viewpoint and collaborating with new people and putting old ideas in new perspective. [...] So we are trying to combine this, be creative making stuff, collaborating with different people in different works” (Solveig). Solveig’s definition of innovation aligns with Neumeier’s (2012) definition of social innovation. He points out the importance changing attitudes and viewpoints by collaboration. Baregheh et al. (2009) as well define innovation as a collaborative tool that can lead transformational changes by proposing and implementing interventions on a local level.

And it is not just about classic economic solutions, also initiatives or ventures that not necessarily have economic growth as a main goal are important for rural communities. Asked specifically about the innovation and investments in the fishing sector in the region, Björk, who works in the education sector, sees innovation also outside of that sector and without a strict aim of economic growth. “I think what we need most is to be more open to creativity. I think we need to see that you can work with other things than fish. You know there are a lot more [things] to work with. [...] All other things, none of that hardcore economic things, I think we need to be more open to them” (Björk). This point depicts multiple scholars view on social or rural innovation. Brandsen et al. (2016) state that social innovations do not aim to participate in the market. Rosca et al. (2020) argue that compared to entrepreneurial innovation, social innovation aims to create social impacts and generating economic value is not prioritised in the process. Especially in the rural context, the creative process of idea generation without economic boundaries is what drives regional and community development (Madureira & Torre, 2019). This is also what Gibson-Graham (2006) show in their model of diverse economies as well.

As innovations do not have to have economic growth as the main goal, other goals are becoming more important, such as such social or environmental initiatives. Helga, who grew up in the case area and already initiated many projects, noticed, that more women are joining here initiatives.



Her projects are focusing on social and environmental issues, and she thinks, the reason why more women are joining her projects is, because they are more aware of the consequences of their actions. “I don't know if it's, because [women are] more aware, more thinking about the consequences. [...] It's like, especially regarding environmental issues in Iceland, I feel like that's mostly women” (Helga). Several studies noticed too, that female innovators seem to have more knowledge of communal needs through a higher awareness of local needs and consequences for the communities (Fhlatharta & Farrell, 2017; Markantoni & Van Hoven, 2012). Therefore, women are more active in initiating activities for a social cause.

Not just Helga's projects are focussing on social or environmental challenges or local needs of the communities. Laufey, who moved from Reykjavik to the Westfjords to experience a more rural lifestyle with her family also noticed, that the women in the community focus on different topics than the men. She sees a difference between the ideas women have and their approaches to innovation in comparison to men. Her explanation is, that women and men in the communities have very different lifestyles due to their jobs and roles in the community.

I think we get different ideas, but I think not that that is because of the gender. It's just because of her upbringing and, uh, and the community we live in. [...] It's because most of the men here are fishermen and farmers and road workers and something like that, then most of the women they work at the hospital or at the school or something. So it's that, of course our ideas are different because we are in different places. So they [men] get more ideas, they're more spontaneous (Laufey).

But those women are in different places, spatially as well as mentally, is because of gender and embeddedness of gender roles. As gender is a social construct, the fact that women and men pursue different careers depending on their upbringing and the societal values in their communities is one of the reason why women have different ideas. Some of the interviewed women do not seem to recognise their embeddedness as women in a patriarchal system, even though they acknowledge that there are differences how men and women act as well as how men and women are treated by the community. This theme will be deeper explored later in the analysis.

Skaptadóttir (2000) even calls the innovativeness of women in rural and remote communities a common response to crisis. As she discovered in her case study in a fishing village in the region of the Westfjords, women tend to think more about collective consequence of for example

economic shocks, whereas men tend to think more about individual consequences (Skaptadóttir, 2000). The women in her case study organized collective initiatives to tackle community needs that arose through exogenous changes and therefore developed new adaptive strategies to cope with the new situation.

Concluding, one can say that female rural innovation is something new to the local context, either because a product or service is actually new to the area or a new approach made something possible, that did not work before. The innovations are created through created processes and in collaborative approaches. Female rural innovators in the case area focus on communal challenges with their innovations and aim to solve problems for their community instead of solely focusing on an economic goal.

## Motivation

In order to explore the essence of female rural innovation, the participants were asked about their motivation for being innovative in their communities.

The women shared several motivations for their innovativeness. *Shaping the community* through their actions and therefore creating the kind of community they want to live in was mentioned several times. Both Helga and Björk want to change the community or the system they are living in through their actions. As the communities are small, the women really can have an impact.

I'm just actively working on making the community that I want to live in (Helga).

All of these are innovation projects because through them I'm trying to change the society, change how the society looks at education (Björk).

By tackling challenges that women want to see changed in their communities, a focus lies more often on social issues such as poverty or health, compared to male innovation (Rosca et al., 2020).

As there are benefits of living in a small community, like being able to have an actual impact, there are also downsides. The *lack of (active) citizens* also leads to another motivation for innovation. Because there are not a lot of other people, some of the participants felt that they needed to be active if they wanted to see change – otherwise no one would end up doing something. Isla for example missed activities for her children when moving to her community after living in bigger cities for some years. When she wanted something to happen for them, like

sport events, she needed to organize them herself. Even little things, like driving her kids to games or competitions needs to be organized in small and remote communities, and if one does not take it in their own hands, it might never happen.

You have to do it yourself. That's how it works in a community like this. If you want kids to play sport, go to games, you have to help organize in driving them, doing a lot of things. And also that's how it works. If you want something to happen, you have to do it. And you have to be the drive in it. So you get a lot of extra duties when you move to a small town, but of course you also get a lot of a closer relationships to your neighbours, to the people in town (Isla).

This motivation of being innovative because of the communities need but also the lack of other people doing it is also described by Madureira and Torre (2019).

Another reason is the *deficiency of services* and the need of such in rural communities. The community members must come up with innovations in order to offer services or job opportunities. Laufey, after moving into the case area, experienced, what seems to be everyday hustle of the small and remote communities. She has been asked to offer a service that was lacking in the community. But when she wanted to stop offering it and do something else with her time and career, she realised there was no one else in the community to take over.

So, and then there was no one doing a good job. And I was like, okay, I can do it for a while. Like, even though I don't want to. [...] I want to do something else, but if I stopped, no one's going to do it. [...] We say in Icelandic [inaudible], man comes instead of a man, very male dominant, but still we say this, but it's not like that in a small community there, if you step down, you don't know if another one's going to come. [...] And if you stopped doing something, maybe nothing else comes into that (Laufey).

Due to the lack of people, some services can just not be offered. And it is not just about services, the innovator herself might miss as Isla experienced, but services that everyone in the community needs. And it needs people who feel a *sense of duty* to just provide the service for the community.

Some women, and not just the ones who grew up in the region, say they feel connected to the area and therefore feel a certain *responsibility* of being active and shaping the community. Solveig, who grew up in the region, but has been away for education, feels responsibility for the

community she is living in. In the small communities every action will have an impact, and everyone should try and give something back to the community.

And so for me, I belong here and I have responsibility for my village, for the Westfjords, because that is, it's kind of my theory for my life. You know, you should do what you can, the best for your local community. If that is a small village, you can always do a tiny little thing to make it better. And, you know, for yourself and for your neighbours or for the society. I feel that I belong here and I think I have responsibility for the, my local, community (Solveig).

The thoughts about responsibility connect to the theme of deficiency and need. The less people there are, the more the people need to be active and participate in order to keep the community alive. So even a woman who moved into the region and might not have plans to stay and settle, feels the responsibility of participating and contributing with her ideas.

Besides the responsibility for the place, two women mentioned *empowerment* of the younger generation. Björk as one of them, says it is important to empower younger women in the community to speak up and stand with their ideas. Later in the interview she also mentioned one of the main challenges for female innovation being the lack of confidence of women in their own ideas.

So I would say, I define my role as a person, not either man or woman as a person who is trying to have some influence in the society and to also to influence younger ladies to do that. Also, I that's how I see my role to be, to be unafraid, to speak up. And I think it is very important to do that (Björk).

There is not just the thought of making the community attractive for young people to stay or consider returning to their home communities, but also to empower them, give them confidence and the tools to be innovative in their way of living. As Eversley (2019) states too, social innovation in the rural context is a form of empowerment.

There is motivation beyond serving the community. Through their innovations they felt empowered to *follow their dreams* and to their “own thing”. It helped them to see themselves more than a mother and caretaker but having an impact. Herdis for example grew up in the region and stayed here all her life. She is the only one of the eight interviewed women, who grew up and in and never left the region. She worked wherever she was needed in the family business, which was agriculture and tourism, and in the community in the fisheries sector. After

not being happy in her last job and a long time of illness and recovery, she found the courage to follow her dreams and pursue a career in a field she was really interested in.

So I was always in the same chair, but there was always a new company and always just like giving people like the notice and, not really good for you or anyone. So, and then I got sick [...]. So, and I lost my job. Yeah. And then I just like, when that was over, I did all my therapy [...] and stuff. And I said, it's like, everybody sees this, like do it now. Just because you get the new also side of your life. Go for it. You only live once (Herdis).

In rural areas the labour markets are limited. There are just a few main industries in rural areas and high skilled labour is rare. If a woman wants to pursue a career in the profession she learned, use the skills she holds, or wants to be active in a specific industry, she might end up having to establish a company. “I actually, I just wanted to make one [job] for myself and live wherever I wanted whenever I wanted” (Jorunn). The limited labour market brings another challenge that can be a motivation to be innovative. Fhlatharta and Farrel (2017) state as well that being unemployed or being in need for a sufficient income drives women into being innovative with their livelihoods and maybe even to open a business on their own.

Kadlin mentioned, that it was hard for her to find a job in the very limited labour market of rural communities, especially for women who are over 50. It was not because she had not worked for a while because of taking care of her kids – she had been active in the labour market all her adult life. But she experienced that employers did not believe her to be capable of taking over new tasks. “And that might be one of the points [of] older women [to] start to do something by themselves as innovators. It's because it's difficult for them [to get a job]. And they don't feel like stop working” (Kadlin).

And by creating a job for herself, Jorunn, who mentioned earlier that she just wanted to have a job for herself that provided her freedom and independence, realised she could have an impact bigger than just on herself. The establishment of an own company can lead to job creation for others and therefore the economic development of the community. “But a part of me wanted to establish something that would grow that would leave a mark, that could make jobs actually” (Jorunn). Which leads the theme back to the beginning of the analysis, where all women said they were innovative because they wanted to have an impact on and shape the community, they are living in.

## Interim summary

Female rural innovation is not necessarily about inventing a new product or service but finding an approach or way to make a product or service work in the local context. As the rural communities that have been observed for this study are remote, offering a service might not be as easy as in more densely populated areas. The innovation lays in the way of meeting the community's needs by collaborating with other community members and finding creative approaches. It is not limited to ventures with the goal of economic growth, instead it is about creativity. Female rural innovation has the goal of shaping the community in a way that is liveable for the women, their family and potential new community members. In detail that means meeting deficiencies, taking over responsibility for the community, and empower each other by their activities. As the observed communities are small, every active citizen counts and can have an impact. This feeling of responsibility and significance of one's actions is what drives the women to be active.

## 3.2 Community needs

As already examined in the first sub-question, women feel responsible for their communities and therefore take the change into their own hands. Sub-question two asks "How does female innovation contribute to rural development?". In this part it will be explored what that change is that the communities need and how female innovation contributes to that development process.

The interviewees had been asked what they think their communities or remote communities in general need to thrive and to be resilient. Seven out of the eight interviewees answered that their communities need people and especially active inhabitants to stay or become resilient. It was mentioned by all the participants, that it does not really matter in what way people are active or how they contribute to the community. "But then like here in [this community], we need lots of just basics, you know, we need the carpenter and a plumber and, you know, just the people that have some skill that we need for our basic needs to keep our houses good and stuff like that" (Solveig). Besides skills needed to keep the infrastructure intact, also any kind of participation is required by the citizen. Due to the remoteness of all the communities, there are most likely not enough people to fill all the positions needed and in the same time services cannot be paid as much and regularly as in bigger and more connected places. Therefore,

everyone needs to help and participate wherever they can. And as these community are all so small<sup>2</sup> it is very noticeable if someone does not participate. As Laufey stresses, it is not about a specific topic or field people should be active in. The people are needed in every field, and every action supports the community.

It doesn't really matter if it's something for the environment or gender equality or I don't know, like some, some kind of, you know, sea angling or whatever it is. Like, people are just happy that someone is doing something and likes to support it. [...] I think it's more about that then really the issues (Laufey).

Another need that has been expressed is to be more open to new approaches. As the development has been focussing on fisheries and the fisheries ancillary services, the interviewees express the need to focus on other industries and other approaches besides a pure economic development. In order to do so, the communities as well as the politicians need to be more open to creative approaches from within the community. Other industries besides the fisheries sector can be the knowledge sector with research and development institutions, the tourism sector, or the creative sector with for example artists residencies. Isla mentions that the focus on the fish industry needs to loosen, and the focus needs to switch to other sectors. “We have to take next steps. It doesn't need only industry. We need all the research community, [...] we need more scientifically educated people” (Isla).

A very concrete need that has been mentioned by Jorunn is the underdeveloped infrastructure of the region. The accessibility of the region is unreliable due to harsh weather conditions and the mountainous topography. In winter, various communities are cut off from supplies because they are snowed in, planes cannot land and electricity as well as internet connections might black out for several days. Low connectivity and under-development of infrastructure are common challenges of rural areas, as Dijkstra et al. (2013) state. This makes it hard to build up a business if the connectivity to other communities and the capital region is unreliable. Gamito et al. (2019) describe that as a common challenge of rural development. The development of reliable infrastructure under harsh conditions is a need of remote communities because they need the connectivity to other towns in regions in order to get supplies and run their businesses. Jorunn, who pointed out this community need, is in-migrated, and lived in mainly bigger cities

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<sup>2</sup> The studied communities have between 70 and 930 inhabitants, with a deviation in Ísafjörður with 2685 inhabitants (Statistics Iceland, 2021c).

in the Nordic regions before she moved to the Westfjords. She was the only one who mentioned infrastructure as being the main need of the communities. She also mentioned that she experienced that locals do not seem to worry about these concerns and learned to live with the uncertainties regarding connectivity.

However, all the above-mentioned needs are drivers for innovation. The lack of active citizens needs to lead either to creative approaches of running services with a few people or to attract more people to the communities in order to run services in traditional ways. How did women in the case area try to tackle these needs with their innovations? There are multiple solutions that meet the communities' needs that came from women within the region. When talking about services, the women talk about education, health care and free time activities for them and their families. Schools are facing shortages of students, but as the communities are so far from each other, the women are looking for ways to keep the schools in each community running. To keep the social life active and alive, parent-children playgroups, driving services for the children and several groups like art groups or games nights for children as well as older citizens are organised. There is a centre for mental health, several youth work activities, community gardens and social events such as concerts or clothes swaps. All these small offers make a community active, interesting, and liveable. Besides jobs the social life in these communities is important to keep citizens and attract new inhabitants. As mentioned above people are needed more than anything else, all these social innovations will keep and attract community members. As Baragheh et al. (2009) stated, innovation enables citizens to take local challenges into their own hands, as long as they are active. But when they care and take responsibility, they can even lead transformational process in their communities (Baregheh et al., 2009). Creative approaches outside of the stringent goal of economic growth, like reinvention of traditions or the focus on land- or nature-based productions helps capacity building and makes the communities more resilient (Gamito et al., 2019).

Job creation is, of course, also an important factor. Multiple businesses are founded by women in the region to. There are multiple bed and breakfasts, cafés, small product lines such as sewing and knitting products, bigger productions such as tiny houses, food products (fish, fish oil) and a maker space.

### Interim summary

Female innovation contributes to the development of rural communities as it tends to directly target the needs of the community. It is not relying on external interventions or side effects of



bigger economic ventures. The women see a need, feel responsible for their communities, and know, that if they do not tackle the need, probably no one else will. Therefore, they collaborate and come up with creative solutions to tackle the needs by at the same time enhancing their personal situation too.

### 3.3 Challenges of rural female innovation

After defining what female innovation means in and for rural communities, it is important to explore what challenges female innovators face in their innovative processes and where these challenges root. Sub-question three asks “How does the women’s reality of life influence their innovativeness?”. Women in rural areas face different challenges than men in general but also than female innovators in urban areas, which influences the success of their innovations. These challenges go back to embedded gender roles due to place specific history and traditions, but they also depend on the individual upbringing and life realities of each woman. So, besides the more obvious differences between men and women, there are also difference between the women.

#### Gender roles

All challenges or obstacles that were identified have strong interlinkages with prevalent gender roles in the communities. All interviewed women talked about dominant gender roles and a certain divide between men and women. The identified gender roles go back to the time when the communities were solely dependent on fisheries and agriculture. In the early 20<sup>th</sup> century, when almost all men were working on fishing boats, the women would stay on land, run the household, take care of the kids and when they had an employment it was mostly in the fish processing plants. The men would be out on the sea for multiple days in a row. When industrial fishing trawlers were introduced in 1960s, where the processing and freezing of the fish would happen on board, the men stayed out on sea longer, up to multiple weeks. That brought a change of family dynamics, as the men were away from their families longer, but also due to the processing of fish on board, there were less jobs in fish processing plants for women or less jobs that Icelandic women were willing to take, as the positions were not well paid and therefore often taken by migrant workers. With the transferable quota system being introduced and changes in the local fish stocks, the fishing industry in the small villages faced another change.

However, not all men are working on trawlers and as times are changing, traditional roles of men and women in the communities are challenged.

About if women have special roles compared to men in the Westfjords. Yeah, I think [...] that is my opinion. When those places here were more like fishing villages, it was more specific for women and for men because the men, they were often away for a long time and the women took all the responsibility of the household and the children, but that has changed. So I'm not sure about that anymore. So I think we are moving a little bit forward (Björk).

The changes in the industry and other sectors like public administration, health care and tourism moving into the Westfjords, the traditional gender roles are shaken up. Nevertheless, compared to the capital region, the Westfjords are still behind when it comes to gender equality. "I definitely see a big difference. I think concerning gender roles. I sometimes think we might be 20 years behind compared to Reykjavik" (Laufey).

There were multiple women who did see differences in how men and women are treated by society, acting in, or perceived within the community, but did not lead these observations back to gender inequalities. Herdis repeated that she does not feel that there is a difference between men and women, but when asked to share some experiences from her everyday work in her company, she shared that her husband's voice seemed to have more power than hers in negotiations.

But if I need something done, I have my husband call. You know, it's sometimes like that, the man's voice is more powerful. In a phone. If you're making deals, I don't know how to explain it, if you are making deals with carpenters or like, the man's voice is somehow more powerful (Herdis).

As already mentioned earlier, Herdis grew up in the region and never left to live somewhere else in or outside the country. She has the most long-term perspective on how the region developed and she does notice changes in the traditional gender roles. "I think it's changing a lot. And the school are definitely helping" (Herdis). That she does not perceive the way she and her husband are treated unequally might lead back to what roles and inequalities she experienced growing up in the region. So, for her, they have already come a long way and having her husband call the carpenter instead of her doing so, is a comparably small thing to mention. But it can also be a mechanism of self-protection. Not accepting that the own role in a community might be less

powerful than another's, is protecting her from facing another struggle besides the one of establishing a company. She is negotiating her own embeddedness in a patriarchal system but not actively fighting it.

These historically rooted differences of how women and men act but also are treated by the opposite sex are the root cause of the following challenges women face when being or trying to be innovative in their communities.

## Family

A challenge that many women mentioned is *family duties* or being responsible for the care of family members. Especially when they start having their own children, their households' tasks are increasing. "It depends on their, like life status. I would say as soon as you have kids, it gets more complicated for women" (Helga). Specifically, that means to get the children ready for school, pick them up or await them after school, prepare meals, organise free time activities and help with personal as well as school related tasks. And it is not just about taking over these family related tasks, but organising the household, keeping the overview, and managing the family in general. Women carry the mental load of managing the family.

It depends on their [women's], like life status. I would say as soon as you have kids, it gets more complicated for women. [...] And I think there's a lot about project management regarding household and family life that is mainly run by women. [...] If you would check out who's the project manager really, who's doing that too, like, additionally, it is in most cases the woman. [...] Having oversights in delivering assignments. It's mostly women, that takes a lot more time than just doing one or two chores (Helga).

Because men are working in less flexible positions in fisheries or road maintenance, their time schedules often do not allow a consistent care for the children. Which then leads to the women taking over the main informal care work in the families.

So they [men] can never take the kids to school or kindergarten and they can never pick them up. And you can never know if, uh, if your partner is coming home at four or eight in the evening, and if they want to plan, they are just told, like, this is not the job for that. So you just have to quit and work somewhere else (Laufey).

And even if families decide to have a more *modern* family organisation, voices from within the community may arise and devalue the attempt by mocking it. Laufey, who moved to the Westfjords with her partner from Reykjavik, experienced, that people questioned her husband's masculinity because he took active part in the household tasks and the upbringing of the children. She also mentions that she has seen families moving away because they did not want to comply to these unspoken rules of gender segregation.

Here in my home, me, and my husband. We share cleaning and taking care of the kids and stuff like that. And people think it's very weird and he does most of the cooking. But I do more. [...] he has to change because otherwise people would just think he's gay. People have said that. [...] I know of families that had, where the man really wanted to be like a part of the upbringing of the kids and everything. They just moved away because there's nothing for them to do here. (Laufey).

Also, Isla had a similar experience. She and her partner had lived in bigger cities and other parts of Europe before, and when moving to a smaller community in the Westfjords, they realised their established, more equal lifestyle was not accepted by everyone in the community.

And when he needed to stay at home because of children's sickness, then he was like, the guys at work, making joke of him, 'You are too soft [...] and you should not let your wife rule you' or things like that. That was not pleasant, but it was not so bad either (Isla).

It needs to be emphasised, that men in the studied communities are of course active in social engagement as well. But as the engagement seems gender segregated, as many other activities and the labour market too, the women might not have mentioned the male engagement in their interviews. Men in the communities of the Westfjords are active for example in sport clubs and the search and rescue teams, which run fully on a voluntary basis.

In the communities a traditional family image of the woman taking care of family issues is kept alive. Women are expected to follow these traditional expectations and fit into certain gender roles. The main expectation is that a woman who has a family is taking care of her children and the household. Solveig experienced, that in her community women mainly take over the traditional roles of parenting and taking care of the household. She perceives that it is just all right to leave that role occasionally if all the tasks of the housewife and household caretaker are

sufficiently fulfilled. As this is of course more work than just fulfilling one role, she has just seen a few women doing so.

It is really the norm that the women, they take the most responsibility of parenting and householding and stuff like that, traditional women roles. And that is really the norm. And if you can do that and then you are maybe allowed to do something else also [...] Then it's okay to go outside the gender role. If you still are good in it [your role], then you can do something else if you like. [...] there are a few women here that are, fishermen, fisherwomen, but they are also super housekeepers when they come home, they clean the house and bake a cake, you know, fry the fish and, but that's, and that's a bit what I feel here (Solveig).

If a woman is prioritising her education or career over her family, voices arise in the community and rumours start. But as long as these traditional gender related expectations are fulfilled, women experience the freedom of also pursuing a less traditional path in their activities or career.

These traditional family roles affect those, who have family or children. Jorunn, who is not married and does not have children, expressed, that she does not feel any gender pressures – though she puts an emphasis on the reason that she does not have children or a partner. “I don't have any children or husbands or anything, so I'm free as a bird and, I like that” (Jorunn).

This very strict and traditional gender roles influence the women's career and of course their ability to be innovative and start projects or initiatives besides their paid work and the work they must do for their families. As mentioned above, the mental workload for women in the studied communities is higher than the men's. Their days are filled with family duties, which leaves little to no time for networking, education, or creative processes. As the mental load is so high, the women are occupied with family issues and do not have time or mental space to think about or work with other topics. This lack of mental space hinders creativity and innovation (Sofer & Saada, 2017).

### Segregated labour market

As already described in the local context, the labour market in the case area is segregated. There are jobs, that are mainly occupied by women: Teaching, care taking, nursing, tourism. And there are jobs that are mainly occupied by men: Fisheries, craftsmen, road workers. “Most of the men here are fishermen and farmers and road workers and something like that, then most of the

women they work at the hospital or at the school or something” (Laufey). Even though women express that they do not feel that they were excluded from that part of the labour market, they do notice the significance of the male domination in these specific sectors. “So if I look over the field, then I don't see a lot of differences. Well, yeah, it's more women working in the hospital and the nursery, the elderly house and the kindergarten and in teaching.” (Kadlin).

The segregated labour market perpetuates gender roles and stereotypes. It seems hard to enter a sector that is dominated by the other sex. The creative idea generation process is heavily influenced by the realities the women experience every day, and if they are not part of certain male sectors, they will not have the same ideas or innovations as men in their community. Of course, this does not necessarily have to be a disadvantage.

## Network

Some women struggled with either building up or keeping a network with other likeminded women in the region. In the case region the distances between the communities are far and therefore every day contacts are limited to the people living in the same community. Interestingly, the global pandemic brought a positive effect to the remote communities of the Westfjords in this regard. Due to the risk of infection with the virus a lot of meetings and workshops were held online in 2020 and 2021. For people from remote communities, for whom it was hard in pre-covid times to participate in these meetings, the shift to online events made certain opportunities accessible to them. Laufey states, that she had been struggling before to join meetings regularly and felt a disadvantage compared to women from Akureyri or Reykjavík. To the new culture of holding meetings online, she feels more connected and able to network with like-minded women.

And so through these kind of things, and it's very helpful for us in the small communities to have Covid because before these courses were just in Akureyri or Reykjavík. And if you're not there, you're not participating. Now it's all on zoom, and people are like thinking outside the box. So, I feel that people and it's mostly been women, but people in rural communities, they are really taking advantage of this and like really working on networking and stuff now, because this is an opportunity for us (Laufey).

As already described above, women in the Westfjords have diverse resumés and educational background. All the interviewees left their home communities at one point, either for starting a family, getting education or pursue a certain career. Being more mobile resulted in having less

tight knit bonds as men in the communities. The men stayed in the communities and therefore were more able to maintain friendships and networks over time. As women moved, they lost their connections and networks. Isla noticed too, that women are less able to keep long term networks and assumes that the reason behind that is the mental workload of taking care of a family.

I think we should maybe look into that how a woman act and how a man act in certain circumstances, because the system is kind of made for those male actors. They've been playing football together, all their childhood, and then they go to school together and then they start businesses, not together, but separately, but still they keep the community somehow. And women are not good in that. We are not good in keeping [the connections], we get busy taking care of our kids and family. And so the connections we have made during our working lives, study lives, we somehow lose them (Isla).

Through getting education elsewhere and gaining life experience in other parts of the country or the world, they have a harder time to bond again with people with the communities. Some women miss like-minded people for discussions and therefore they often do not feel understood by their neighbours. Solveig lived in Reykjavik before she moved to the Westfjords and still keeps tight bonds to her community in the big city. She is an artist and expressed that she has not found like-minded people in her community in the Westfjords with whom she can share her creative ideas. In Reykjavik she has an artist community where people are more progressive and open to change. After living in the small community, she has not found someone yet with whom she shares the same values and can have a creative conversation and an open idea generating process.

When I go and meet my friends in Reykjavik that are thinking similar as I, I end up with, like, a 30 ideas of possibilities that you could do this and that, because we are having some kind of a conversation, but then not so many here, I can't have this conversation (Solveig).

Isla experienced something similar. She has been working in the fisheries sector and worked in managing positions. She mentions that her interests were not ladylike and therefore she finds it hard to have interesting and meaningful conversations with women from her community. During her interview she expresses her interests in research, science, the fisheries industry, and the development of the region. Her interests are more political, and she feels that local women

are more interested in issues on the family or community scale, with a focus on social topics, such as their children, the expansion of the kindergarten or the next community bake off.

What I have experienced is kind of, my interests are not very ladylike, so some of my interest I'm not discussing in that group because they are not interested at all. So you just speak different things and you talk about different things sometimes. But I know that I avoid talking about some things in a group of a woman. Because I know they are not interested, so I will shortly be taken out of this group (Isla).

The lack of a supporting network hinders innovation. It was mentioned that new ideas and innovations are generally well received in the communities, as every active citizen who somehow engages with the community helps to strengthen the resilience of the town. But if women do not have a network where they can discuss their ideas in a safe place with likeminded people, these ideas do not get a space to grow and become these potentially community changing innovations. Gender roles are very traditional in these communities and family values are prioritized. It seems like speaking about business or non-family related topics segregates women from each other. But in order to be innovative and be brave enough to start an initiative, people need mentors, role models or examples to aim for. Role models have been proven to have influence on the necessary confidence to start a project or a business in other contexts too (Arenius & Kovalainen, 2006). Markussen and Røed (2017) stress that same gender role models have a bigger influence than role models from the other gender.

The way networking events are organised do not suit the life realities of rural woman, as distances between places are far and the daily workload from professional work and informal care and household work does not leave enough time and energy to foster networking. The global pandemic of Covid-19 already tackled unintentionally this challenge. In order to keep the infection risk low, meetings were hold online, which saved a lot of people the time to travel to meetings and the online meetings also gave more flexibility to join a meeting without having to re-organise household duties, such as taking care of their children. As networking and exchanging ideas is an important part of the innovative process (Bell et al., 2018), the shift from in person meetings to online meetings can help women to be successful in their innovations.



## Confidence

A repeating obstacle for women to be innovative mentioned by the interviewees is that there is a lack of confidence over their own ideas. It is not that women have less ideas than men, but they shy away from sharing them. They do not believe in the innovativeness or necessity of their ideas and therefore do not share them or carry them out. Björk is a teacher in a community in the Westfjords. She experienced especially young women not being confident with their own ideas and not feeling safe to speak up and share their ideas.

I have so often witnessed especially women say[ing] to me, when we are on a meeting or doing some political arguments or things like that, some lady whisper something to me and say 'Can you say it?'. I think that's not the right way to do it because you are supposed to be the owner of your own ideas [...]. I would like the atmosphere to be the way that people do not have to be afraid of speaking up. [...] And perhaps afraid of getting into disagreement or things like that. So I think it is really important to encourage women to do that (Björk).

In a community or a region where traditional gender roles are kept alive and the men are showcased as the doers, young women still feel not safe enough to speak out. Also, when it comes to community development, economic growth as the main goal is emphasised a lot. But as female innovators are focussing more on social issues and less on economic growth with their innovations, their ideas are not valued as much as the ideas of male innovators. That perpetuates the feeling of insignificance and hinders the development of confidence in their own ideas. This lack of confidence and belief in their own ideas has a tremendous impact on the success of female innovation, which Schneider (2017) also found in her case study.

## Support system/ Fundings

There are funds and programs that support innovation in Iceland and even some that specifically target female innovation. Herdis found the existing support systems for female founders so supporting, that she said it felt easier to start a business as a woman than it would have been for her husband. "For me, it was easier to start a woman's business. They started with this woman brands. So it felt like it was easier for me to start the business than this for my husband. Because there was like a certain support for workshops or something" (Herdis). The interviewees saw not necessarily a discrimination of women applying for these funds, but more an *urban-rural divide*. As a lot of the innovation funds in Iceland require an innovation being a new idea,

it seems like applications from rural communities are disadvantaged, as they are not necessarily new, but only innovative in the local context.

That's the problem with all those fundings, they are requiring like new, new, new innovation, but it doesn't help someone if you have developed something in, for example, Reykjavik and it has been going on for 10 years, then no one else in the country can apply for that kind of innovation (Isla).

Even though there are not a lot of job opportunities for people with an education on university level, the communities need higher educated people in order to create jobs for this group. The funding application processes are complex, and it is hard to keep up with all the other applications reaching the fund. The higher the education level is the easier it becomes for the applicant to compete nationwide.

The problem is always the money and you have to apply and you are actually facing, that's one of the reasons that we need more scientifically educated people is that, when applying for something, here and you just a local, you really want to do some great things. And your application is in the same pile as, the doctor from the University of Iceland applying for something similar, but still not the same, you know, of course this application from the local entrepreneur fades a little bit. It isn't as sexy as the other one (Isla).

Several studies (Fhlatharta & Farrell, 2017; Sullivan & Meek, 2012) found out that women have less access to funding and loans and more often rely on their own capital when funding a company. Therefore, women do not have the same amount as starting capital then men which has a negative impact on the success of their venture. The perception of the women does not align with the outcomes of the other studies about women having less access to capital. The women in this case study did not mention that as a struggle.

### Interim summary

The prevalent gender roles in the observed communities have a big impact on the innovativeness of the communities' women. The communities' expectation is that the women take care of their family and children. This leads to a high mental load which leaves little to no space to be creative and innovative. The still segregated labour market exacerbates gender roles and stereotypes and restricts a free process of creativity. When women just act and move within the expected gendered roles, it is less likely that they will have ideas outside of these boxes. The

labour market and the traditional distribution of roles within the families hinders intersectional networking and leaves women isolated within their direct contacts, who might be either not supportive or do not leave space for creativity. All these restrictions are resulting in women not valuing or sharing their ideas with other peers. This leads to a lack of confidence when it comes to idea creation and sharing processes.

## 4 Conclusion

The conclusion is wrapping up the study. The discussion answers the main research question by putting the findings from the three sub-questions into the context of the overall problem and discussing the finding's validity. In the outlook the delimitations of this thesis will be discussed, and further research presented.

### 4.1 Discussion

This part answers the main research question “What characterizes female innovation in rural development and how can a feminist approach to innovation enhance the resilience of rural and resource-dependent communities?” by summarizing the results of the three sub-questions and discussing the challenges of female innovation in existing concepts of rural innovation.

The analysis of the three sub-questions revealed the characteristics of female innovation in rural development. As women in the case area were socially, educationally, and professionally brought up by a domination of cultures and traditions that root in the local fishing industry, they have their own spin on innovation.

Female rural innovation does not mean introducing ground-breaking tech innovation or growth-oriented firms. Instead, it means approaches and concepts, that are either new to the context or make an old concept that worked somewhere else, work in the local rural context. This is also pointed out by Gamito et al. (2019), who found out that innovation in the rural means to provide something, that does not exist in that place yet or was discontinued because it was not profitable enough anymore. Social community needs and a feeling of responsibility for the community are the main drivers for female rural innovations. But as women as well as their motivations are diverse, also other drivers were pointed out. Some women acted out of a sense of duty whereas others decided to become innovative to change their personal economic situation or even fulfil a long-cherished dream.

The prevalent gender roles in the observed communities have a big impact on the innovativeness of the communities' women and lead to challenges, that need to be addressed in order to be able to value and foster female innovation in rural areas. The communities' expectation is that the women take care of their family and children. This leads to a high mental load which leaves little to no space to be creative and innovative. The labour market and the

traditional distribution of roles within the families hinders intersectional networking and leaves women isolated within their direct contacts, who might be either not supportive or do not leave space for creativity. All these restrictions are resulting in women not valuing or sharing their ideas with peers. This leads to a lack of confidence when it comes to idea creation and sharing processes.

The overarching challenge is the neglect and the lack of acknowledgement of female innovation in research as well as in the local economic development. As women in rural and traditional communities tend to have a lot of local knowledge about the society, the environment, and impacts of endo- or exogenous shocks on both (Markantoni & Van Hoven, 2012), their innovative activities are important for rural communities. As rural communities often have a focus on natural resources, women are excluded from a participation in the labour market. And when in community or regional development the diversification of the industry through innovation within in this industry is chosen as a development tool, women, who are already excluded from that industry, will be left out of the development process. This fits into the ecofeminist perspective of this research, which says the exploitation of nature leads to oppression of women (Oksala, 2018; Warren, 2001).

This study revealed that female rural innovation tackles a lot of communal needs and does not necessarily contribute directly to economic growth. Therefore, female rural innovation can be seen as a big part of the submerged part of the iceberg. Innovation concepts or concepts of rural development that use innovation do not acknowledge activities that fall under the definition of rural female innovation in this study, because they often focus on the three *floating* elements, “wage labour, market exchange of commodities, and capitalist enterprises” (Gibson-Graham, 2006, p. 69).

In the case area, the iceberg model of a diverse economy by Gibson-Graham (2006) has its own division. Figure 8 shows a strongly simplified depiction of the case area’s economy. The dominant and acknowledged parts of the local industry are fishery, fishery ancillary services, and tourism. The submerged part is what keeps the local economy floating. In this case it holds non-capitalistic elements, such as community, gardens, creativity, elder and childcare, mental health care, knitting, communal activities, empowerment etc. This study does not say that this whole part is carried by women, but the local female rural innovation covers a lot of these elements.

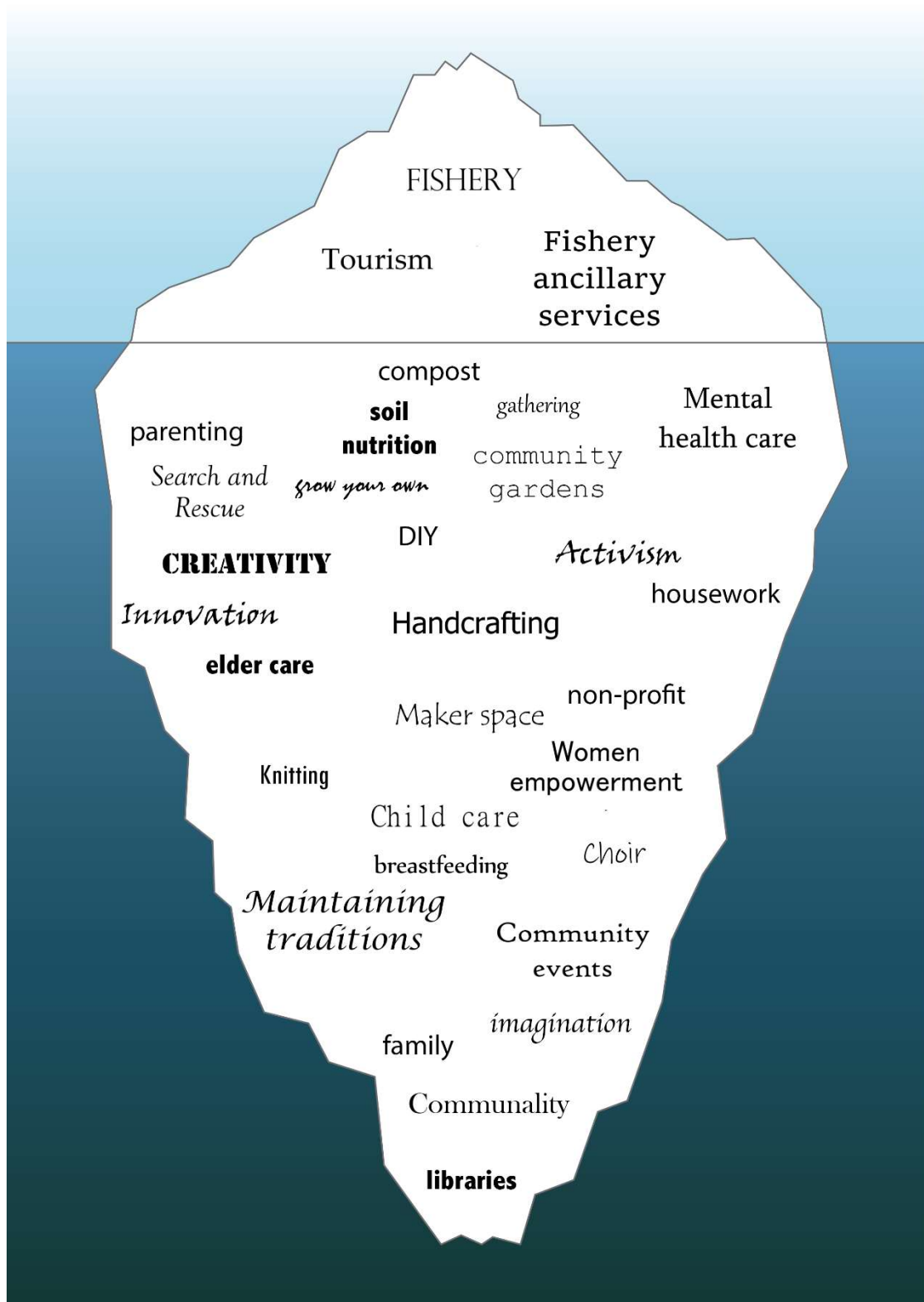


Figure 8 The Iceberg Model, adapted to the case area the Westfjords, using result of the interview analysis. Adapted from Community Economies Collective. *Diverse Economies Iceberg* (n.d.). Licensed under a Creative Commons Attribution-ShareAlike 4.0 International License. Retrieved from <http://www.communityeconomies.org/resources/diverse-economies-iceberg>

Innovation in rural areas should not mean to think innovation within the classical resources with a pure capitalistic aim and focus on direct job creation, but instead changing the narrative of predominant structures and enhancing the attractiveness of a community. Women need to be included in that process of changing the narrative as man already have their space in the narrative of the region. This study challenged the traditional concept of the innovative region and tried to apply a more feminist approach.

Through innovations of every description, women can become the forefront of a social and economic transition. Their activities will fulfil social needs and tackle local challenges, empower other citizens, and enhance the liveability of the place. Even though some innovations might not have a direct economic impact, the empowerment and resultant initiatives will lead to diversified activities, new networks, enhanced attractiveness of the communities, and mobilisation of other innovators. An innovative and active community will enhance the liveability of a place, strengthen the resilience, and will be more responsive to exogenous shocks. This will attract visitors, new inhabitants, investors, and maybe even industries.

## 4.2 Outlook

As already outlined in the beginning of this study, the impact of female innovation on rural development needs to be deeper explored, as it is an under-researched field. This study unfolded some main characteristics, challenges, and implications of female rural innovation in a case study in the Westfjords in Iceland. A case study is of course just able to give a snapshot of the situation in the chosen case area. But as the main challenge has been distilled to be gender asymmetries within the case communities whereas Iceland continuously reaches a high rank in the Global Gender Gap report (World Economic Forum, 2021), one can assume, that the identified challenges and underestimations of female rural innovation can be found in other rural communities as well.

The analysis might at some points sound very black-and-white, putting men and women in very distinct corners of the society and assign them very distinct roles. This leads back to the interviews and the very personal perspectives of the interviewees, which is what the data reflects. As one of this study's aims was to capture the women's reality and their experiences, these distinct statements might wonder the reader, but they have to be accepted as valid as this is how the women experience their surroundings. Nevertheless, there are aspects that need to

be further explored, such as more holistic statistics of who is innovative (with a broader definition of innovation, as proposed in this study) in which field, the experiences of younger women, and the views and experiences of men.

An element, that has not been studied in this thesis is the impact of global (labour) migration on the communities, the predominant gender roles, and therefore the female innovation. The total net immigration of foreign citizen to the whole region is comparably small with an average of 41 men and 31 women per year in the last 10 years (Statistics Iceland, 2021a). But it is unclear if they distributed equally over the whole region with its 7.108 inhabitants (Statistics Iceland, 2021b). An influx of this size in a community of a size of 300 inhabitants will have on the other a big impact on the community, its social life, and the local gender asymmetries.

As some of the interviewees mentioned, they benefitted from the shift to online meetings, workshops, and networking introduced due to the infection risk of Covid-19. As they are living partly in small and isolated villages, for them it had been challenging to organise or attend meetings, where some or all participants had to travel to a certain location. Looking forward, it will be interesting to examine whether these benefits resulted out of the global pandemic will stay and even will be further developed in order to facilitate the access to workshops and networking events.

The study showed that a lot of innovative activities are happening in the case area and are also valued on a local level. But these activities are not necessarily acknowledged on a national level or in research as innovations with a valuable effect on rural development. Female rural innovation needs to be at first acknowledged and valued, so the specific challenges, such as traditional gender roles, mental workload, and networking can be fostered purposefully.



## Appendix

### A Interview guideline

#### Background

- Age (approx.)
- Where are you from? Did you grow up here?
- Do you have children? How old?

#### Work life

- Where have you been working? What are you doing at the moment?

#### Family life and gender roles

- Do you think women have specific roles compared to men in the Westfjords?
- How would you define your role as a woman in this community?

#### Belonging

- Do you feel a certain connection or even responsibility for this place (the Westfjords)?  
If yes, why?

#### Attitudes to changes and innovation

- What do communities here need?
- How would you define innovation?
- Do you think that you are innovative/ and innovator in this region?
- Where do you see differences between men and women?

#### Network

- Is there a support system for engagement or innovation?
- What are specific challenges for women and innovation in the Westfjords?
- Do you exchange knowledge and experiences with other innovators?
- Who do you go to when you need support/ help? Who do you work with?

#### Other

- Do you know women of every age I could talk to?

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