



SCHOOL OF
ECONOMICS AND
MANAGEMENT

Master's Programme in Population, Growth and Development

Repartition: Monetary Incentives as a Colonial Policy

By

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Abstract: This study is concerned with understanding the impacts of the changed incentive structure introduced with the repartition policy in 19th century colonial Greenland. Using archival research, this study shows how the policy was designed to increase industrious behavior and caring for one another by introducing monetary incentives. By transcribing data on catch yield, it is for the first time possible to evaluate the effect of the policy on productivity understood in terms of seal catch yield. The study finds some support for a higher seal catch yield following the introduction of the repartition practice.

Key words: Incentives, Colonialism, Arctic, Difference-in-Difference

EKHS11
Master's Thesis - 15 ECTS
June 2021
Supervisor: Erik Green
Word Count: 11373

Table of Contents

1. Introduction	2
1.1. Aim and Scope	3
1.2. Thesis Outline	4
2. Research Question	5
3. Literature Review	6
3.1. Background Literature: Understanding the Long Run Effects of Colonialism	6
3.2. Theoretical Background: Intrinsic, Extrinsic and Reputational Incentives	9
4. Aim of the Policy	11
4.1. The Wardenships: A Response to an Economic Crisis	12
5. Design of the Policy	14
6. Data	19
6.1. Source Material	19
6.1.1 Geography	20
6.2. Source Critique: Reliability, Representativity and Accuracy	21
6.2.1 Subsistence and Informal Trade	21
6.2.2 Types of Catch	22
6.2.3 Money: Accuracy and Usage	22
6.2.3.1 Conflicting Interests	23
6.2.3.2 Issue of Monopsony	24
7. Descriptive statistics	24
7.1. Seal	24
7.2. Population	28
7.3. Other Variables	28
8. Methods	29
8.1. Difference-in-Difference	29
8.2. Model	30
9. Results and Discussion	32
10. Further Study	34
11. Conclusion	35
12. Archival Sources	37
13. References	38
14. Appendix	40

List of Tables

Table 1. Class Designation. Source: Rink, 1860	16
Table 2. Repartition Shares. Source: Rink, 1860	17
Table 3. Repartition Shares according to Rud. Source: Rud, 2010	17
Table 4. Negotiation Protocol, Egedesminde 1872. Source: National Greenlandic Archives	18
Table 5. Regression Output	34

List of Figures

Figure 1. Schematic Report, Sukkertoppen, 1863. Source: Danish National Archives	20
Figure 2. Source: Braunschweig, 2021	25
Figure 3. Source: Braunschweig, 2021	26
Figure 4. Source: Braunschweig, 2021	27
Figure 5. Source: Braunschweig, 2021	28
Figure 6. Source: Braunschweig, 2021	29

1. Introduction

Much academic literature has in recent years been devoted to understanding the long-term economic impact of colonization. Very little scholarship has been devoted to the colonial era in Greenland through the lens of economics. From the perspective of economic history, Greenland is interesting for three main reasons. Firstly, the country has been colonized since 1721, but in contrast to most former colonies the country was inducted into the metropole and became a Danish province in 1953. This was partially reversed, when the country gained home rule in 1979 and took a further step towards independence in 2009, when the country became self-governing.

Secondly, the demographic transition from hunter-gatherer society to a post-industrial high-income country happened very recently and over the course of less than a century. Today the country has developed a strong welfare state, but lacks the necessary economy to support it, as the country remains heavily reliant on support from Denmark. Additionally, for a high-income country, health standards are low and life expectancy is lagging behind Europe with almost ten years less than the OECD average (OECD, 2019).

Thirdly, missionaries and colonial officials collected a lot of data and much of the data has survived until present day. Censuses and annual administrative reports carry data on sex, migration, trade and much more down to micro-level. Thus, the history and development of the country is very well documented. Simultaneously, the economic history of Greenland is not very well researched.

This study is concerned with the effects of the repartition policy in middle of the 19th century, a profit sharing scheme, designed to *retraditionalize* society and incentivize hard work, frugality and caring for others. The repartition policy was part of a wider restructuring of the colonial administration. This restructuring by the Danish authorities entailed administrative and judicial duties being moved from the Royal Greenlandic Trading Company (RGTC) and over to regional councils called wardenships. The wardenships consisted of Danish civil servants as well as local prolific hunters. Their introduction constitute a move away from an extractive colonial regime towards a higher degree of self-governance, as theorized by Daron Acemoglu, Simon Johnson and James A. Robinson (2005).

The repartition policy changed the incentive structure of the Greenlandic society. The main

duty of the wardenships was to distribute the repartition, which consisted of a share of the RGTC profits, to the hunters whom had demonstrated the qualities listed above. This was done in accordance with a key awarding ownership of traditional tools of production, productivity and class membership as determined by the wardenship to name a few examples. The first part of this study consists of archival research to determine the distribution key to enable the understanding of how the policy changed the incentives structure.

Arctic scholar Søren Rud (2010) has examined the subjectivization processes in colonial Greenland in the 19th century and looked closer at the repartition policy. In this light he discusses the repartition policy to understand, how the policy might have affected behavior amongst hunters in Godhavn, now known as Qeqertarsuaq, on the West coast of Greenland. Sources from 1880s, show that local catcher Johan Broberg sold his whalers sloop, a traditionally European single-masted sailboat. Instead he bought an umiak, a traditionally Greenlandic boat also known as a woman's boat. The ownership of an umiak entitled Broberg to one share of the repartition, while ownership of the European sloop was not rewarded repartition. According to Rud there was no reason for switching in terms of efficiency or safety and thus the change of boat suggest that Broberg was moved by the changed incentives created by the enactment of the repartition policy. While it is remarkable that such movement can be observed in the sources, it would be even more interesting to investigate, whether the policy had any effect on productivity.

1.1. Aim and scope

This study is based on archival research, which can be divided into two parts. The first is concerned with determining what the repartition policy actually looked like, the aim and how it was used in practice. This will be done by examining legislative bills as well as the registers detailing how the profits were distributed among the hunters. This will ensure a thorough understanding of both the aim of the policy as well as how incentives were changed in practice. One main component in this part of the paper is to determine the key used to divvy out the repartition, which is not completely clear from the literature. Having determined the aim and practice of the policy, the study will continue by estimating the impact of its introduction in terms productivity of the hunters. To enable this analysis, I have transcribed original administrative documents from 1847-1873 published by civil servants in each colonial region detailing the Greenlanders' catch that was sold to the RGTC.

The current study will in the tradition of much post-colonial literature in economic history attempt to understand economic outcomes by looking at the economic impact of colonial regimes and policies on economic outcomes. Unlike many other studies of colonial era policies and regimes, the rich source material in the case of Greenland enables a longitudinal study of the impact on economic outcomes by change in colonial economic policy.

Having transcribed this data, it is now possible for the first time to assess the impact of the repartition policy. Using a difference-in-difference analysis, I will estimate the impact of the changed incentive structure, which was brought about by the repartition policy in terms of productivity. The study finds some support for the notion that the repartition policy increased the catch of seal.

This study will thus investigate the short-term impact of the policy on productivity and contribute to the wider understanding of the impact of colonial economic policies. Furthermore, this investigation will contribute to the understanding of a seemingly seminal change in colonial policy away from extractive policies towards stronger economic institutions. Lastly, the study will add to our understanding of a previously under-researched economic history of Greenland.

1.2. Thesis outline

Following this introductory section, I will review the relevant literature for this study. I will begin by surveying current post-colonial literature on the long run effects of colonialism. With a fundamental understanding of the research landscape, I will lay out a theoretical framework for understanding how incentives work to influence behavior. With this theoretical background in place, I continue with an exploration of the aim and design of the repartition policy. This will be done using a mix of academic literature and historical documents. Having created a deeper understanding of how the policy worked to influence incentives, I move on to the data section of the study. The data section begins with a description of the source material and source critique before moving onto descriptive statistics, methods and the empirical analysis itself. Here, I will investigate whether or not the introduction of the policy is associated with a change in productivity or employment composition. Finally, the study ends with a suggestion for further research and conclusion.

2. Research Question

The wardenships consisted of the warden¹ the priest, the administrative assistants, the catechist² and a local skilled hunter from each township in the colony. The wardenships held part of the judicial authority and were also tasked with overseeing the distribution of social aid as well as the repartition. The repartition consisted of a share of the profits from wardenships that was divided between the native kayak hunters. The repartition policy promoted self-sustenance and ownership of traditional tools of production via monetary incentives to counteract the dwindling catch yields and resulting in a socio-economic crisis in the period 1850-1880. Importantly, monetary incentives were not the only tool used to influence behaviors. The lists detailing who had received welfare and who had been rewarded repartition was made public in order to shame welfare recipients and celebrate repartition recipients (Rendal, 2015). In the academic literature on the subject, the description of the policy is unclear and it is disputed how the policy actually worked. Furthermore, the effect of this seminal change in the Greenlandic society is an area that is sparingly understood and not researched at all from the perspective of economic history. This leads to the following research question,

1. Why was the repartition policy introduced and how did it work to change the incentive structure of 19th century colonial Greenland?

The existing literature on the topic does not provide an accurate answer to the above. For that reason archival research into the design and use of the policy is necessary. Having established how the policy affected incentives we can move on to evaluating its impact to answer the second research question,

2. Did the repartition policy - via incentives – increase seal yields?

In order to answer this question, I will transcribe data from the National Danish Archives. The main source used for this study is what is known as the *Schematic Reports from Greenland*, which was an annual report put together by the warden of each region detailing the trade, immigration, population development and the like.

¹ Forstander

² A local literate Greenlander, who assists the priest in his work

Analyzing the repartition policy using the theoretical approach on incentives, we expect that the introduction of an extrinsic incentive might spoil the reputational incentive that commonly motivates the *caring for others* aspect of the repartition policy. Furthermore, we might observe that the introduction of the extrinsic incentive in the form of the repartition itself might have the desired effect short-term. However, the effect might decrease over time, due to the crowding out of the existing intrinsic incentive.

Of main interest to the current investigation, however, is how the introduction of the extrinsic incentives might affect productivity. Here the expectation is more straight-forward, the introduction of an extrinsic incentive motivating seal hunting will increase the seal catch yield.

3. Literature Review

To create a fundamental understanding of the approaches that has been used to understand the impact of colonialism, this study will begin with a literature review outlining notable contributions to post-colonial literature within economic history. Following that, it is necessary to lay down a theoretical framework for understanding how incentives work, as the repartition policy was meant to encourage specific behaviors via incentives. Lastly, I will provide an overview of the existing literature on the wardenships and the repartition policy.

3.1. Background literature: Understanding the long run effects of colonialism

A great array of literature is devoted to understanding the long-run effects of colonialism in developing nations of today. In general, the literature attempts to explain present day economic outcomes in formerly colonized countries. Notable examples include Nathan Nunn (2008), who has used historical documents regarding slave ethnicities and shipping records to construct an estimate of how many slaves were exported from individual countries during Africa's slave trade. He finds that current economic performance is negatively related to the number of slaves exported from a country (Nunn, 2008). To explain this relationship Nunn has, alongside Leonard Wantchekon (2011), used contemporary individual-level survey data on mistrust, an inhibitor of trade, and find that high levels of slave trade is related to high levels of mistrust today (Nunn & Wantchekon, 2011).

An important wave of post-colonial literature focuses on the role of institutions. Economic institutions differ from country to country. They determine the constraints on economic actors as well as create incentives. As such, institutions shape economic outcomes. This is broadly what Acemoglu and colleagues argue (2005) when they make the case that the fundamental cause of differences in economic development are differences in economic institutions. In their book *Institutions as a Fundamental Cause of Long-Run-Growth*, they document the empirical importance of institutions by comparing outcomes in North and South Korea after the division of the countries as well as investigating outcomes in colonized countries with different types of institutions such as private property.

Another notable contribution to the field of comparative development is laid out in *The Colonial Origins of Comparative Development: An Empirical Investigation* (2001). In this article the authors estimate the effect of institutions on economic performance by comparing former colonies with radically different colonization regimes. The authors exploit differences in mortality rates for Europeans and find that countries, where Europeans settled due to lower mortality, perform better economically today. This they argue is due to the fact that in settler colonies proper economic institutions were set up, while in non-settler colonies colonial policies were more extractive in nature (Acemoglu et al., 2001).

As mentioned above, Greenland is lagging severely behind other developed nations on a range of socio-economic parameters. Through the theory of Acemoglu and colleagues the introduction of the wardenships and the repartition policy can be understood as a move away from an extractive colonial policy towards a system with stronger economic institutions. In this way, current study contributes to the existing literature examining the economic impact of colonial policies.

As presented in the introduction, the wardenships were tasked with dividing the population into six classes. The imposition of this new social taxonomy, the repartition policy and the wardenships in general can be understood as a redefinition and reconstitution of the Greenlandic society. According to Rud, the instatement of the wardenships is best understood using the Foucauldian theory of governmentality (Rud, 2010, p. 162). In the anthology *Anthropologies of Modernity*, David Scott (1995) and Peter Redfield (1995) have used Foucault as a framework for understanding colonial rule. Redfield writes that often when colonial

governments impose new institutions, they design them in such a way that “following only their own self-interest natives would do what they ought.” (Redfield, p. 63, 1995).

Scott is concerned with understanding how the imposition of a new political system by the colonizer affects the colonized. He uses the Foucauldian theory of governmentality to understand how modernity was inserted in its varied forms into the lives and values of the colonized. In Scott’s theory, the creation of a new political or economic system is a way for the colonizer to exert power over the colonized by imposing a political, legal, economic and value system, a sort of heterogeneous rationality (Scott, 1995, p. 25).

The introduction of the wardenships and the design of the policy was to a large extent rooted in a desire from the Danish authorities to instill values of frugality, industriousness and responsibility for one another. Understanding the wardenships through the theory of governmentality the policy can be understood, as the imposition of a heterogeneous rationality. Rud thus argues that the wardenships and the in-built idea of self-government should not be understood as benevolent development towards democratic rule, but instead as a move by a colonial power to exert influence over the natives, by reordering and redefining of the social structure (Rud, 2010, p. 162,).

Whether or not the introduction of the wardenships was a benevolent attempt to install a form of self-rule or a self-serving imposition of values that would serve to further an extractive colonial regime it remains interesting to investigate whether the new political and economic structure had an impact on productivity.

Understanding the Redfield quote “following only their own self-interest natives would do what they ought” through the lens of economic theory, the economist would argue that what is at stake are incentives. In other words, with the introduction of the wardenships an attempt has been made to align personal incentives with the desired political outcome. Before current investigation can continue, it is important to lay out in more detail what is understood by incentives.

With a better understanding of the research landscape of post-colonial economic history related to current study, we can move on to laying out the theoretical framework that will be used to understand the potential impact of the incentives introduced by the repartition policy.

3.2. Theoretical background: Intrinsic, extrinsic and reputational incentives

Incentives matter is an expression commonly uttered in the economics profession. It is assumed, and many studies support this notion, that in general humans act in accordance with the law of behavior. In short, stronger incentives result in higher performance or more effort (Gneezy et al., 2011). Monetary incentives are generally what comes to mind when thinking of incentives, but other forms of incentives motivate behavior as well. Uri Gneezy and colleagues (2001) highlight a range of studies that show that incentives do not always work the way they are supposed to. Using money to encourage certain behavior can be understood as introducing extrinsic incentives. The introduction of extrinsic incentives may encourage the desired behavior, but might also incur several adverse effects on outcomes. This is because extrinsic incentives have the potential to crowd out existing intrinsic incentives. As will become clear below, this relationship, where one the introduction of monetary incentives weakens existing motivations, might be at play with regards to the reparation policy. For that reason it is important to understand, how different types of incentives work and how they affect each other.

To understand why this may be the case, it must be considered that introducing monetary incentives have two kinds of effects. The first of these being a standard price effect, in which incentivized behavior is made more attractive and the second being indirect psychological effects. The indirect psychological effect of monetary incentives may work in the opposite direction of the direct price effect and crowd out the incentivized behavior (Gneezy et al., 2011). The following will discuss the literature on the subject of intrinsic and extrinsic incentives that will serve as the theoretical backdrop for current paper.

Much research has been done on the subject showing that the introduction of extrinsic incentives to motivate prosocial behavior might have perverse effects. Studies investigating the relationship between reward-incentives and give several examples of adverse outcomes following the introduction of incentives.

Overall incentives can be divided into two categories based on how they work. Behaviour can be incentivized through rewards or punishment. In the literature on reward-incentives, Uri Gneezy and Aldo Rusticini (2000a) have studied donation amounts collected by schoolchildren for charitable organizations. They found that less money was collected, when incentives for

good performance were introduced. Similarly, Richard Titmuss (1970) found that the introduction of payment for blood donations actually decreased the supply.

Punishment-incentives often take the shape of fines and penalties. William T. Dickens and George Akerlof argue that obeying the law is based on a form of “internal justification” and the introduction of harsher penalties undermine this in certain situations. Bruno S. Frey (1997) finds evidence to support this notion using evidence from taxation records. Similarly, Gneezy and Rusticini (200b) found that parents were more likely to arrive late for pick-up and their children’s day-care center after the introduction of fines for arriving late (Gneezy et al., 2011).

However, the above is not sufficient to conclude that the introduction of rewards or punishment systematically drowns out prosocial behavior. A range of studies support this basic premise of economics that incentives generally are effective in motivating behavioral change. Especially in a workplace, setting incentives seems to work (Benabou & Tirole, 2005). What further muddies the issue is the fact that good deeds are commonly done because of norms that assign honor to them. Similarly, shame is often what makes people refrain from doing selfish deeds (Benabou & Tirole, 2005).

In the literature, incentives are divided into two categories, intrinsic and extrinsic incentives. Monetary rewards, as was used in the repartition policy can be understood as an extrinsic incentive. They guide behavior by offering an extrinsic reward, with motivation for doing something being a monetary reward. Conversely, intrinsic incentives take the shape of actions that are done because they are good in-themselves, not because a reward or punishment is attached to them (Gneezy et al., 2011). This distinction does not quite capture the *public shaming/celebration* aspect of the repartition policy. Figuring on either the list of 1st class repartition recipients or on the list shaming recipients of welfare services is principally concerned with the cultivation of a certain image. This image maintenance can be either self-image or public image. Roland Benabou and Jean Tirole (2005) have researched motivations for certain actions and developed a theory of what guides prosocial behavior. In their analysis, they add a third type of incentives, reputational, which would capture the *shaming/celebrating* aspect of the policy (Benabou & Tirole, 2005).

Based on this insight, the fact that reputational motivations also need to be taken into consideration, Benabou and Tirole develop a model with the property that behavior, be it pro-

or anti-social, reflects an unobservable and endogenous mix of three motivations, reputational, intrinsic and extrinsic. They argue that the reputational aspects of motivation are important and provide the example that only about 1% of donations is made anonymously. Their main result of interest to current investigation is that the reputational value of good deeds is spoiled by the presence of extrinsic incentives (Benabou & Tirole, 2005).

The last aspect to draw attention to is that a change in incentives tends to be time-sensitive. Gneezy and colleagues point to the fact that the introduction of extrinsic monetary incentives might create the desired effect on behavior in the short-run. In the long-term however, the existing intrinsic incentive might be crowded out either partially or completely (Gneezy et al., 2011). In the following, I will determine the aim and design of the policy. In order to apply this theoretical background to theorize on the impact of a change in the incentive structure, it is necessary to understand the exact aim and design of the policy.

4. Aim of the Policy

For a large part of its colonial history the administration of Greenland was carried out by the RGTC. Since taking over the administration from the Christian mission in 1776, the brief laid out by the Danish government for the RGTC had been twofold.

1. To ensure the continued material and intellectual development of the Greenlandic people
2. To ensure a financial profit or avoid losses for the Danish treasury (Rink, 1856)

These two independent tasks of the RGTC were at times at odds with each other. In 1856, the then director of the colony Julianehaab, Hinrich J. Rink, wrote a report to the Danish Minister of the Interior. In the report, he pointed out the contradictory nature of the RGTC brief, explaining that the company's pursuit of profits at times happened to the detriment of the welfare of the Greenlandic people. He further outlined the benefits of separating the administration and trade (Rink, 1856). Interestingly, as will become clear below, the policy introduced to mitigate this issue would in fact, if successful, enable the RGTC to live up to both demands set out by the authorities.

The introduction of the institution, the wardenships, marked a seminal change in the political and economic structure of the Greenlandic society, as the RGTC's administrative duties were

reduced significantly and selected Greenlanders were to take part in leading the wardenships. In this way, the introduction of the policy marks a seminal point in the history of colonial Greenland, where the administration of the colony was no longer solely in the hands of a for-profit company. In the context of Acemoglu, Johnson and Robinson's theoretical framework, the change can be understood as a first step away from an extractive colonial policy towards one with stronger economic institutions, namely representation, albeit very limited. It is important to mention here however, that the RGTC continued to be the sole owner of the license to trade with and within Greenland. As such, the company held a monopoly and a monopsony simultaneously (Pettersen, 2017). This power the company held is important to have in mind, as this study continues.

The wardenships and repartition policy has been described in the literature in some detail. However, to provide a clear understanding of how the introduction of the policy impacted the economic structure and incentives, it is necessary to build upon and further substantiate the current understanding via archival research.

4.1. The wardenships: A response to an economic crisis

It was commonly known, also to the native Danish population living in Greenland in the 19th century, that the economic and social state of affairs was volatile and very sensitive to natural phenomena, such as weather and sea mammal migration patterns and epidemics (Marquardt, 1999). However, earlier crises had not been of a general and nationwide character, but restricted to specific regions. This led the Danish administration to believe that the great socio-economic crisis of 1850-1880 was caused by economically irresponsible behavior in the Greenlandic population (Marquardt, 1999).

This behavioral change was believed, by Rink and his colleagues in the colonial administration, to be caused by ill-informed economic and social reforms that had been carried out beginning in the 1830s. The reforms in question were a series of liberal reforms designed to slowly introduce market conditions and commercialize production and exchange. This was done to increase living standards by introducing money as a means of exchange and move away from self-sustenance to a market economy (Marquardt, 1999)(Sveistrup & Dalsgaard, 1945).

An example of this reckless economic behavior was the commonly held belief in the colonial administration that coffee was too addictive a substance for the Greenlanders. The restrictions

on import of coffee was lifted 1837 and many officials believed that the loosening of the ban would have detrimental effects on the native population, similar to that experienced in North America, when the ban on sale of alcohol to the North American native population was lifted. Similar to the trope of the whiskey drinking American Indian, the coffee-addicted eskimo was a common concern held by colonial administrators at the time. Furthermore, scholarship since then has furthered this belief, see Sveistrup & Dalsgaard, 1945. Rink, however, was not particularly concerned with coffee, but believed that the general availability of European luxury goods caused the Greenlandic people to sell so much blubber, skins and other native products that they did not have sufficient stock to support their own households. Furthermore, it was believed that the introduction of social policies, such as *fattighjælp*, poverty aid, had made the Greenlandic people lazy and less likely to venture out in the kayaks to catch seal (Marquardt, 1999). This, Rink believed, resulted in lower productivity, which affected the profits of the RGTC as well as the living standards in Greenland.

The literature thus establishes that the policy was meant to counteract the adverse effects of the market reforms of the 1830's. It was to do so by,

1. Encouraging sensible spending, frugality and industrious behavior
2. Encouraging caring for one another

Historically a custom of sharing catch yield had been practiced. This understanding of property is more social than the private notion of Western Europe and ensured the well-being of all members of the townships and towns and was necessary to mitigate the volatility and harsh conditions of life in the north of the polar circle (Rendal, 2015). Rink believed that the swift economic and political changes had been detrimental to the local customs and culture. Specifically, he believed that the custom of sharing catch yields with the less fortunate had been abandoned in favor of a stricter and more private understanding of property. In his own words, the Greenlandic people, were still *nature's children*, and as such, too immature to resist the temptations offered by luxury goods from Europe such as white bread, raisins and figs (Rink, 1845 & 1862).

This fear of the destruction of the local culture points to the final aim of the introduction of wardenships and the repartition policy, the retraditionalizing of the Greenlandic society. Rink believed the transition and modernization of the Greenlandic society had been too rapid and

this was the source of issues with productivity, lavishness and selfishness. Furthermore, he feared that the skills needed to hunt seal from kayaks were being lost. He hoped that the return to a more traditional way of life would ameliorate the consequences of the market liberalizations and combat the crisis. This principle of retraditionalization was marked by an emphasis on traditional hunting of particularly seal from kayaks. He believed that encouraging frugality and industry and a return to a traditional lifestyle could combat the crisis. The wardenships and the repartition policy were thus designed to encourage such behavior (Rink, 1862). Then a third aim of the policy can be added to the list of aims.

1. Encouraging sensible spending, frugality and industrious behavior
2. Encouraging caring for one another
3. Protecting the traditional way of life

These three combined can be understood as the stated aim of the policy. It is important to note, however, that a more industrious population and increased productivity would simultaneously benefit the RGTC. Both whale and seal blubber was a lucrative good in the European markets. Other species that were traditionally hunted for in Greenland birds and land mammals were less in demand in the European markets. Blubber was used in oil lamps, as candle wax and in the manufacture of soap, leather and cosmetics. Thus, the RGTC wanted to encourage the Greenlanders to hunt for the species that supplied the goods, blubber, which were in demand in Europe.

With the aim of the policy established and further understood through archival research, the study can continue with understanding how the policy was structured to incentivize behavior to meet the above-established aims.

5. Design of the Policy

The precise design of the policy and its implementation has not been clearly established in the literature. For this study it is necessary to understand how the policy was designed to make it clear how the incentive structure was changed in practice.

The reports mentioned above, continuously sent by Rink to the Danish government, laid the basis for the first iterations of the wardenships and the repartition policy. Within the first years

of the existence of the wardenships the legal framework was revised a handful of times and additions to the policy was made. Alongside the Rink report of 1845, the documents *Preliminary Provisions for the Greenlanders' Fund and the Wardenships* published recurrently in 1860, 1862, 1863, 1867, 1868, 1870, 1872, 1881 and 1884 lay out the policy for the wardenships and repartition policy. One of the main duties of the wardenship was of economic character. It had to administer the so-called repartitions. The policy worked as follows: The hunters sold their catch to the RGTC and some of the profits was then given back from the company to the wardenship ex post. The revenue was thus divided into shares, and shares of the repartition were granted to the inhabitants based on their capabilities. From the literature, it is unclear what the distribution key looked like, however (Andersen, 2013). The following will illuminate the design of the policy by using the existing literature as well as archival research into Rink's original law texts as well as the negotiation protocols of the wardenships that outline the accounting methods used in the different colonies at different times.

The National Archives of Greenland explains in its introduction to the fond that contains the *Protocols* of the wardenships that the repartition was rewarded to hunters according to three criteria, how much they caught, ownership of hunting equipment and size of family (National Archives of Greenland, 2021). This is not completely accurate. As Rink stated in 1862,

”The funds that are to serve as encouragement for the producers, should not be repartitioned in accordance with the quantity of goods sold to the Company, but in accordance with his (the hunter) general wealth, independence and as a replacement for the help he may provide for his neighbours.” (Rink, 1862)

As such, the quantity of seal caught was not used directly as a deciding factor for the reception of repartition, but did serve as an indirect determinant for the class divisions. Table 1 below shows the criteria for the division into the six classes.

Table 1. Class Designation. Source: Rink 1860

Class	Greenlandic Designation	Economic Status	Criteria
1st	Pigigsut	Well off	1. Is a skilled hunter or used to be before old age or debilitation. 2. Maintain an orderly house and hunting equipment; Ensure proper clothing for the household and teaching of the male adolescents in the skill of hunting seal from kayak. 3. Has not incurred any debt within the previous year.
2nd	Pigigsut tugdle	Less well off	Fulfilling two of the criteria for 1st class.
3rd	Pigigsut tugdle	Almost poor	Fulfilling one of the criteria for 1st class.
4th	Piitsut	Poor	Owens a kayak that he himself uses and delivers some catch to the RGTC.
5th	Piniartuerutut	Those who have lost their provider	Widows and orphans and others.
6th	Siporutut	The rest	Employees of the RGTC that make above 60 Rigsdaler per annum.

The top three classes were to receive a share of the repartition, whereas the bottom three were excluded from receiving any repartition, because they in some form had been a burden to society, i.e. had borrowed money or received poverty aid (Rink, 1860). As shown in table 1, in addition to wealth and productivity, caring for other members of society, in the form of food donation or shelter, was also used to award membership in the upper classes (Rink, 1860).

Returning to Rink's initial aim of the policy, the policy was meant to reinstate a social practice of caring for one another and the expectation was that the upper classes would care for the lower classes in accordance with tradition (Rink, 1845)

The *Preliminary Provisions* (Rink, 1860) states that the repartition sum received from the RGTC, were to be divided into equally sized shares and divided using the following key:

Table 2. Repartition Shares. Source: Rink, 1860

Description of trait	Shares awarded per item
Each person in the family belonging to first class	3 shares
Each person in the family belonging to second class	2 shares
Ownership of a riffle	6 shares
Ownership of Umiak	18 shares

It was a further requirement that the repartition was spent on something sensible and useful (Rink, 1860).

A different key is described in the academic literature on the subject. In his PhD thesis, Søren Rud (2010), investigated the subjectivization processes in colonial Greenland in the 19th century and looked closer at the repartition policy. He examined the repartition lists from the area Logen Godhavn and found a different key was used than the one described by Rink in his *Preliminary Provisions*. Rud writes about the hunter Johan Broberg who in 1884 received 19 shares of the repartition. The shares were awarded for:

Table 3. Repartition Shares according to Rud. Source: Rud, 2010

Description	Shares awarded per item
Membership of first class	3 shares
Ownership of Umiak	4 shares
Dogs and sled	2 shares
Family and dependents	10 shares

The fact that the key described by Rink in 1860 and the key extracted by Rud from the repartition lists from Logen Godhavn in 1884 is not unusual, as the Provisions from 1860 were preliminary. For current investigation it is important, however, to understand the key and what other aspects of the policy that might influence incentives and productivity. For that reason it was necessary to conduct archival research into the *Negotiation Protocols*, which contains the

original tables outlining how the repartition was awarded in practice. They show who received shares, how much they received and what they were awarded for.

Table 4. Negotiation Protocol, Egedesminde 1872. Source: National Greenlandic Archives

Navne	Klæde			Bændene		Siam. B. B. B.	Tilkommer	
	1	2	3	1	2		8	8
Tausfærte						469		232-72.
Peter Hændriksen	3			3	2	8		11-2+
Jost. Hændriksen		2				2		2-72+
Gjerm. Gjermundsen		2		3	2	7		9-61+
Jost. Hændriksen	3			3	2	8		11-2+
Kongidsiakt.								
Jost. Hændriksen			1	3	2	6		8-25+
Højsingasak								
Lars Philipsen		2		3		5		6-55+

Through temporal and spatial sampling of the Negotiation Protocols of the wardenships, I have been able to determine to a high degree of accuracy what the distribution key looked like. Even though the weighting changed somewhat from year to year and between colonies, I found that in practice the repartition distribution key looked more like the example supplied by Rud than what Rink first envisioned. Shares given for ownership of umiak varies from 3-5, but is nowhere near the 18 that Rink first suggested. I also found that in addition to the above, a share was sometimes given for having a deposit in the bank as well as the number of dependents in the household. Awarding repartition shares for rifle ownership was not exercised in practice, while shares were given for owning a sled and dogs. See table 6 in appendix for the approximate distribution key.

I have found that quantity of seal sold to the RGTC was not a direct determinant of shares awarded as had been suggested by the academic literature. Instead, the fact that a hunter was productive was used indirectly as one of many factors used in a qualitative assessment of the hunter's ability. This then served to classify the Greenlandic people into six classes, not the three as described in the literature. The above distinction is important, because had quantity of seal sold to the RGTC been the sole determinant of the amount of repartition received, hunters might have been likely to sell so much that they could not sustain themselves. This type of behavior was, as shown above, exactly, one of the issues the policy was introduced to hinder.

With the above, the first part of this study concludes. With the distribution key, it is for the first time possible to understand how the repartition policy was carried out in practice and perhaps more importantly, how certain behavior was incentivized. Before the study can continue, it would be useful to apply the theoretical background on incentives and post-colonial theory to the newly unearthed understanding of the repartition policy.

The incentive structure involved in the repartition policy is at first sight simple; extrinsic values are introduced in order to motivate a behavioral change. However, as the different aims of the policy have been illuminated it has become clear that it is more complicated than that. It is particularly with regards to the aim of encouraging the Greenlanders to care for one another that the question of how incentives work becomes complex. Here an existing intrinsic incentive of caring, might be crowded out by the introduction of the policy. However, as the current study is mainly concerned with productivity the incentive mechanism should be more straightforward – the introduction of an extrinsic incentive is expected to increase productivity as understood in terms of seal catch.

The double-sided brief that the RGTC operated under partially supports the notion that the colonial efforts in Greenland were not completely extractive. However, it should be remembered that it is not an either-or situation; a regime can be more or less extractive. How extractive the regime was is a question for a different paper, but what is clear, when understanding the introduction of the wardenships through the theory of Acemoglu and colleagues is that, it was a move towards stronger economic institutions. In this case, a degree of representation and self-determination on government level, which Acemoglu and colleagues argue, is a crucial step towards better economic institutions and thus economic development. As described, such a change is associated with better economic outcomes in the long run. Therefore, it is interesting to find out whether a similar pattern can be observed in the short run.

6. Data

6.1. Source material

The *Schematic Reports* were first introduced in the 1840s. The reports were preprinted charts filled in by the warden, the Danish official in charge of the region and approved by the wardenship council at their annual meetings. Of interest to this study is the information they carried on the catch yield and trade-in for the year in question. The wardens also filled in

information on health, buildings in the area, weather, as well as demographic factors including population size, age and sex (National Archives and Museum of Greenland, 2019). The reports were introduced to enable both the colonial inspector for Greenland and the authorities in Denmark to closely follow the demographic, social and economic state of affairs in the colonies.

As this study is concerned with productivity, I have limited the data collection to include the section regarding trade-in. This section contains information of the amounts of a variety of goods that were bought by the RGTC. See image for an example of the source material. I have transcribed the records to create a data set that will enable the analysis. Figure 1 is an example of the Schematic Reports from Sukkertoppen in 1863.

4. Productionen.

a) De i det forløbne Handelsaar indbrundne Producter have i det Hele udgjort (vide Bilag C, som udviser Productionen ved ethvert Indhandlingssted især):

507	Zonder Salspaf,	deraf afbrændt	507	Edr.	til	422 $\frac{1}{2}$	Edr.	Ern.
	"	Hvalspaf,	"	"	"	"	"	"
82 $\frac{1}{2}$	"	Hvidfiskepaf,	"	82 $\frac{1}{2}$	"	"	67 $\frac{1}{2}$	"
56 $\frac{1}{3}$	"	Kreperkafspaf,	"	56 $\frac{1}{3}$	"	"	30 $\frac{1}{4}$	"
53 $\frac{3}{4}$	"	Haitlever,	"	53 $\frac{3}{4}$	"	"	27 $\frac{1}{4}$	"
106	"	Lorsfelever,	"	106	"	"	37 $\frac{1}{2}$	"
76 $\frac{1}{2}$	Stfr.	Salsfind.		Stfr.	Hvalbarder.			
4	"	Rensfind.		Yd.	Centjerningshorn.			
120	"	Rævefind.		"	Renshorn.			
	"	Bjorneffind.		"	Hvalrostander.			
	"	Hundeffind.		152	Stfr.	Bandffindopelse.		
282	Yd.	Edderdunn.		152	Par	dito	Beenklader.	
789 $\frac{1}{2}$	"	Fuglefjer.			Stfr.	Kobberrenne.		

b) Udgifterne ved Erhvervelsen af disse Producter have for Handelen andraget:

	til Gronlændere for Producter	2,411	Rdlr.
	ved Hvalfangst		"
	" Garnfangst	876	"
	" Haisfangst		"
	" Kreperkaffangst		"
		4,287	Rdlr.

Figure 1. Schematic Report, Sukkertoppen, 1863. Source: Danish National Archives

6.1.1. Geography

Colonial Greenland was divided into administrative areas, known as *colonies*. The colonies were known under the name of the main town in the region. This town was also where the

RGTC would have their trading posts. The documents contain yearly reports from each trading post. Reports exist from 17 trading places. However, the reports from the smaller trading places are infrequent and some trading places have been submerged into the main town during the period observed, e.g. the minor trading place Niarkonak, was merged with the main town of the colony, Umanak, in 1857. To ensure continuity and consistency in the data, the observations have been merged for the areas where such a change took place in the accounting. This leaves 12 trading posts in the sample, which corresponds with the names of the colonies. In this study, the colonial names of the colonies are used, as opposed to the modern equivalents to ensure accuracy.

The most complete collection of the reports is to be found in the Danish National Archives. The earliest report in the fond is from 1847 and the last is from 1947. For current purposes observations have been collected from 1847-1873. For the above-mentioned colonies, there are 186 reports from the period. There are no reports for the years 1848, 1853, 1858, 1859, 1860, 1861 and 1862, which makes the dataset unbalanced. Crucially, the scarcity of reports is quite high in between the introduction of the policy in 1857 and 1863 for the South and the North respectively. The effect on the analysis of this scarcity will be discussed further down. Reports from the southern colonies are scarcer, due to wreckage of the ship *Hans Egede* in 1959 (National Archives and Museum of Greenland, 2019).

The reports further contain the total amount of money paid out to the Greenlanders for all the products combined. On top of sourcing products directly from the hunters, the RGTC also employed natives for whaling and seal hunting. The RGTC's salary expenses for these workers are also provided in the data. Before moving onto the descriptive statistics, it is necessary to critique the source and discuss its reliability and representativity.

6.2. Source critique: Reliability, representativity and accuracy

As this study is concerned with productivity, the question arises whether or not the sources are able to accurately describe the level of productivity both before and after the introduction of the policy. There are several issues of representativity that need consideration in relation to the current study, these are discussed below.

6.2.1.1. Subsistence and informal trade

Most, if not all, Greenlanders sustained themselves mainly through subsistence hunting. This means that it was mostly surplus that was sold to the RGTC and that the Greenlanders mostly supported themselves by consuming directly what they caught as opposed to selling their catch and then buying produce (Bjerregaard, 2008). As such, the effect of a change in policy on productivity might be smaller than if market trade was a bigger part of securing access to food. Another question in relation to subsistence is how big the informal market was. If this study finds a relationship between the introduction of the policy and increased yield, it might be due to catch that was previously being traded in the informal sector now being traded in the formal sector. As such, the policy might not have changed productivity, the result would merely be due to the fact that catch which was traded informally pre-repartition was being traded formally post-repartition. However, the strict laws and high penalties against, what was known as *snighandel*, black market trade, that were in place throughout the period (Petersen, 2003), makes it improbable that a high amount of black market trade existed before the introduction of the policy. Furthermore, Marquardt has shown that money income from other sources than hunting varied from place to place. In this study, I will assume that these employment patterns did not vary greatly in the short term. Thus, the difference from region to region will actually improve the robustness of the analysis due to increased variance.

6.2.2. Types of catch

In his book *Settlements, Kinship and Hunting Grounds in Traditional Greenland*, Robert Petersen (2003) discusses the issue of the representativity of the *Schematic Reports* on catch. He argues that they may not be sufficiently representative for the precise calculation of overall productivity (Petersen, 2003, p. 27). However, while Petersen might be right, the *Schematic Reports* can serve as a proxy for productivity. However, the *Summary of Statistical Information on Greenland* (1942) questions this notion. It is a scientific work commissioned by the Danish government. The book is a collection and treatment of the most notable scientific explorations and works on Greenland. In it, the issue of the Schematic Reports as a measure of productivity is discussed. They compare the Catch Lists that were compiled from 1862, which also include seal kept by the hunters and the numbers from the Schematic Reports. They find a strong correlation between the two numbers. Based on that correlation the representativity of the source is fairly strong (Oldenow, 1942).

6.2.3. Money: Accuracy and usage

Actual Greenlandic currency notes were not printed until 1803. The aim of the introduction of these notes was to bring down transaction costs associated with bartering in the country. The colonial authorities wanted the notes to replace gunpowder and tobacco, which until then had been used for trading. A German mineralogist named Karl Ludwig Giesecke noted in 1809 that the Greenlanders did not consider the notes neither desirable nor a legitimate form of currency. The Danish authorities also worried about the distrust in the currency. On several occasions in 1863 and again in 1906 the disbandment of the currency was discussed, as the authorities believed that the Greenlanders “lack of appreciation” for the currency meant that the population was discouraged from saving (Sørensen, 2012). Certain mining companies also issued their own notes for use in the country. Alongside the different types of bills silver coins also circulated as a method of payment in the 19th century. These coins seemed to have been more trusted as a currency according to Sørensen, but it is unclear how much trade took place in each currency and how much trade was facilitated by bartering (Sørensen, 2012). An impact of the repartition policy could also be that the currency and the use of money in general was more widely adopted as the repartition was paid out in cash. During the 19th century, the metropole Denmark switched currency from the Rigsdaler to the Krone. This switch that took place in 1875 also marked the shift from a currency pegged to the value of silver to being pegged on gold (National Bank of Denmark, 2018). If a substantial amount of trade took place in silver coins, this shift might have disturbed the value of this currency. The extreme geographical and political isolation of the country, however, might mean that the fluctuations resulting from this shift were not as severe in Greenland as they would have been otherwise. Another reason why the above may not pose a big problem for the analysis is that in general the repartition was not paid out in cash. Instead, the payment was made in the form of IOUs for use in the local store. As such, price levels in the store is what first and foremost was the deciding factor in the value of the money, and the price level was set politically and did not change very often.

6.2.3.1. Conflicting interests

The *Schematic Reports* were kept and approved by the wardenship, which as mentioned above consisted of one or more hunters from the community, the local minister and colonial officials. This means that within the wardenship there was also conflicting interest. While the hunter might favor accounting that increased the reparation shares to his fellow hunters, the minister and colonial officials might have had other inclinations. One can assume that the colonial officials would have the upper hand and final say in matters of dispute. As such, one might be concerned that the numbers brought to protocol were skewed. It is unlikely, however, that the

numbers are skewed against the hunters. This is because the policy also had the aim of encouraging industry and improving self-reliance. For that reason, the protocols were kept in both Danish and Greenlandic and published for everyone to see. This means that underestimating the catch numbers would be directly in opposition to the aim of the policy and thus it is likely that the reported numbers on catch yield are quite accurate. Furthermore, historian Robert Petersen (2003) has argued for the accuracy of the reports. He bases this argument on the fact that the repartition practice was discussed amongst Greenlanders and issues brought to the wardens. The records show only disputes on the amount of repartition shares awarded and never the actual accounting practice (Petersen, 2003, p. 27).

6.2.3.2. Issue of monopsony

As the RGTC was the only buyer of skins and blubber, it held a monopsony. As such, the company was able to set prices as they saw fit. As discussed above, the company, which was partly a government entity, did not only have profit maximization as a goal. Stability and welfare of the Greenlandic people was also part of the company's purpose. For that reason the common issue with monopsony that the single buyer is able to set prices and conditions as it pleases might not have been as severe in this case. One way in which the hunters might have mitigated the company's power was through storing their catch until the following year. This was done by drying and controllably rotting meat and by storing skins. Robert Petersen (2003) has compared catch lists with the amount of skin sold in the area of Upernavik from 1931 to 1967. He found that following years, where the amount of seal caught was low, a drop in skin sales was observed. This suggests that the hunters kept a store of skins in order to mitigate periods of poor catch yield. Similar practices could probably be observed in the 19th century. This feature would also mitigate some of the monopsony power.

7. Descriptive statistics

7.1. Seal

Alongside sealskins, seal blubber is the most consistently occurring good in the reports. A range of other products was also reported, although with less frequency. There are 20 main product categories, which includes blubber and liver as well as skins, pelts, horns and antlers from land and sea animals native to Greenland. The blubber categories designating the blubber and liver from seal, Greenland whale, beluga whale, humpback whale, shark and cod are further divided into how much was boiled and the total amount of oil obtained. Figure 2

illustrate the overwhelming importance of seal blubber in comparison with other product categories that is used for the production of oil. Similarly, figure 3 illustrate how many skins from seal were bought by the RGTC in comparison with skins, pelts and furs from other animals. Both bar graphs show the mean for all the colonies combined for all the observed years.

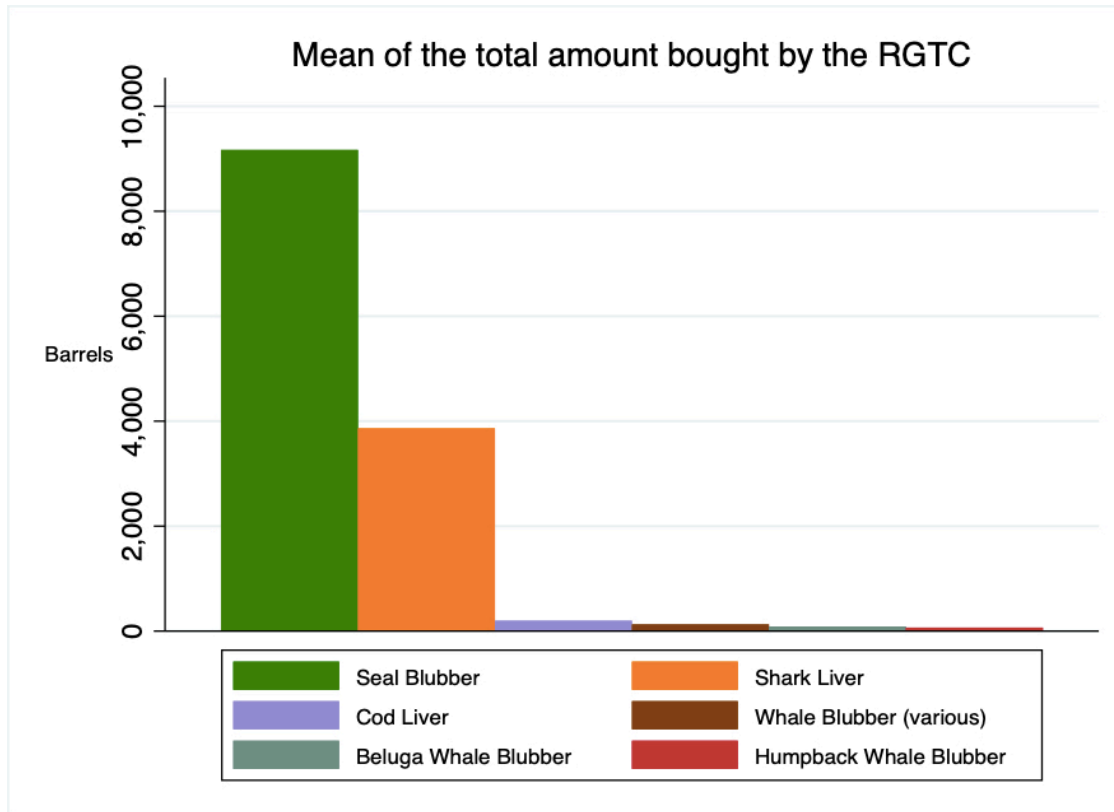


Figure 2. Source: Braunschweig, 2021

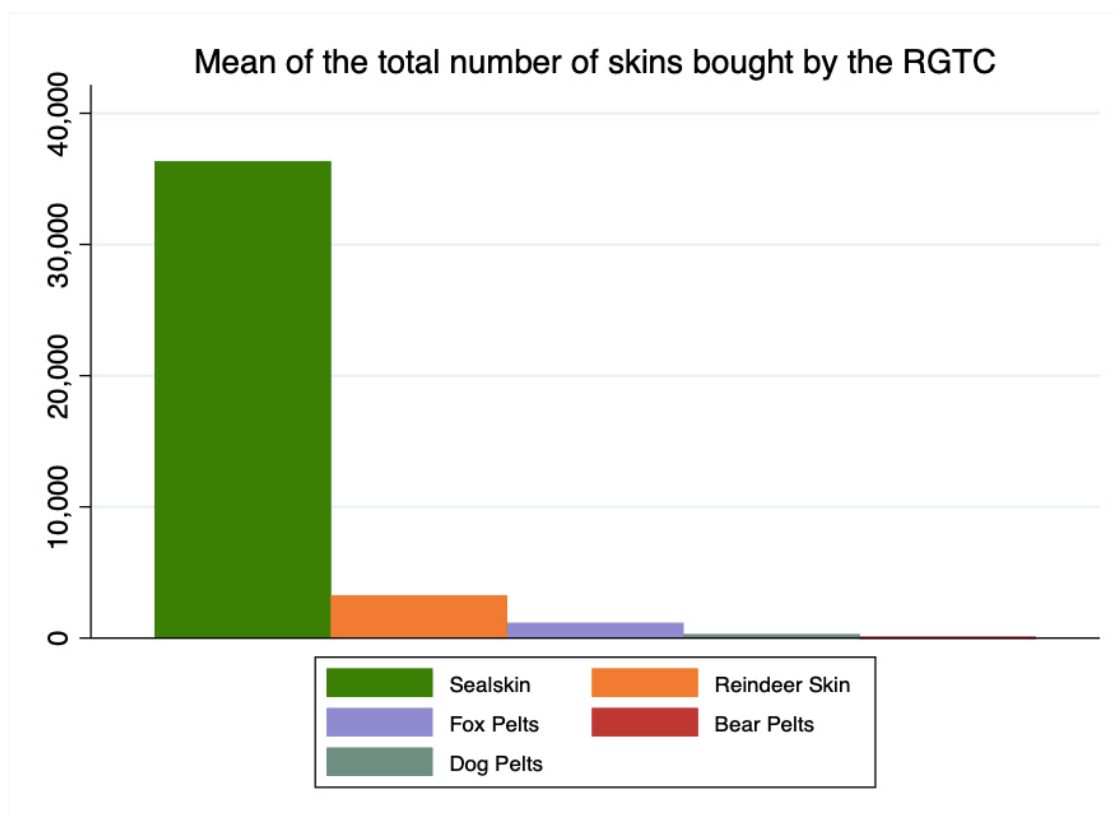


Figure 3. Source: Braunschweig, 2021

Seal blubber is given in two units depending on times and location in the source material. The first is a straightforward and common measurement barrel. The other is somewhat obscure, *baller* or *balier*, which translates into tubs. This unit was a local measurement that does not appear in the current literature on measurement units in 19th century Denmark (Kjærsgaard, 2018). A report published in 1937 treating the scientific and commercial surveys carried out by Norwegians before 1814 mentions the unit *ballier*. According to the report, the *ballie* was a customary unit of measurement that commonly equaled a barrel, however, in some places the unit could contain up to two barrels (Dybwad, 1914). It has not been possible to further determine the usage of the unit. For present purposes, I will assume that the measurement practice used is consistent throughout the observed period within each location, as such this should not influence the validity of the analysis. Furthermore, I will assume *balier* and barrels to be the same. The other important product from the seal hunt is the skins. Sealskins were used for clothing, housing and boats and also sold to the RGTC. The number of skins bought by the RGTC varies a lot from colony to colony. Unsurprisingly, the number of skins and the seal blubber amount has a positive correlation³. See figure 7 in appendix.

³ Correlation between seal blubber and skins is 0.5918*

As seal hunting held such overwhelming importance and is what the repartition policy aimed to incentivize, the development in seal products in relation to the introduction of the policy is what is interesting for this study. Figure 4 and 5 show the development in seal bought by the RGTC from each colony in relation to the introduction of the repartition policy. For both the Southern and Northern colonies there seems to be a slightly upward moving trend after the introduction of the policy, which would add support to the notion that the introduction of a new incentive structure increased productivity. The analysis below will enquire further into this seeming trend.

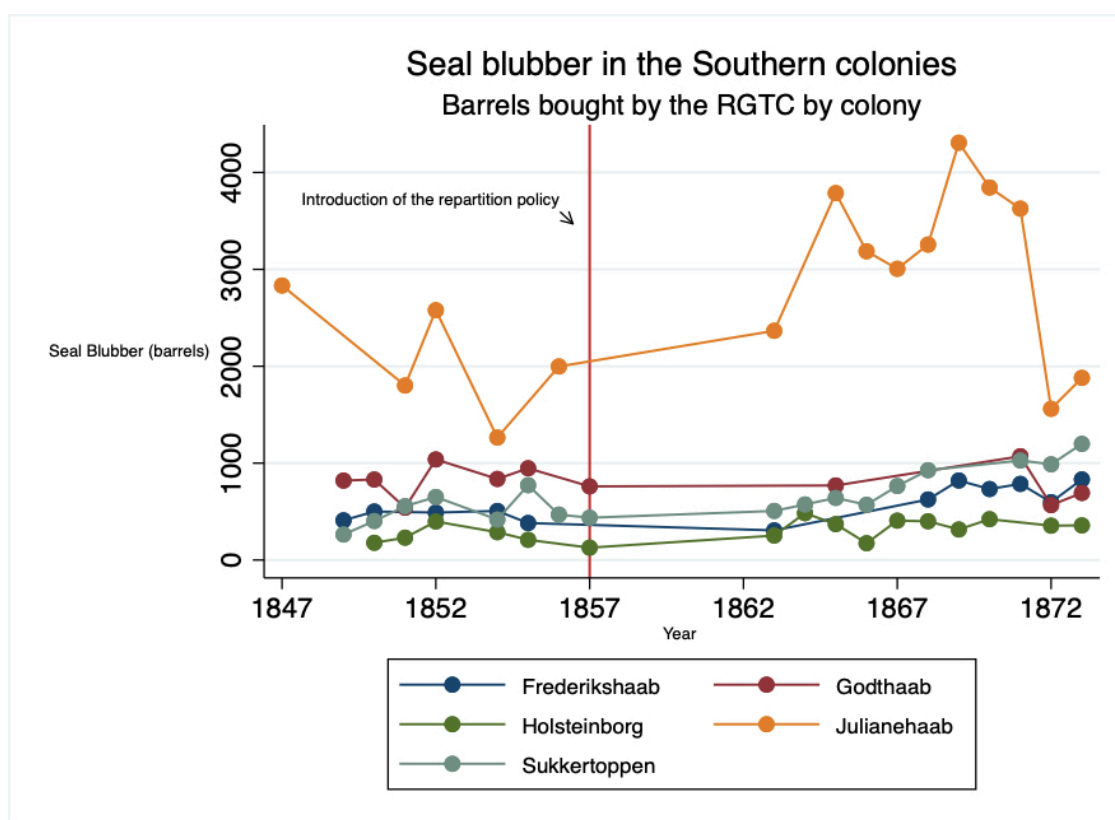


Figure 4. Source: Braunschweig, 2021

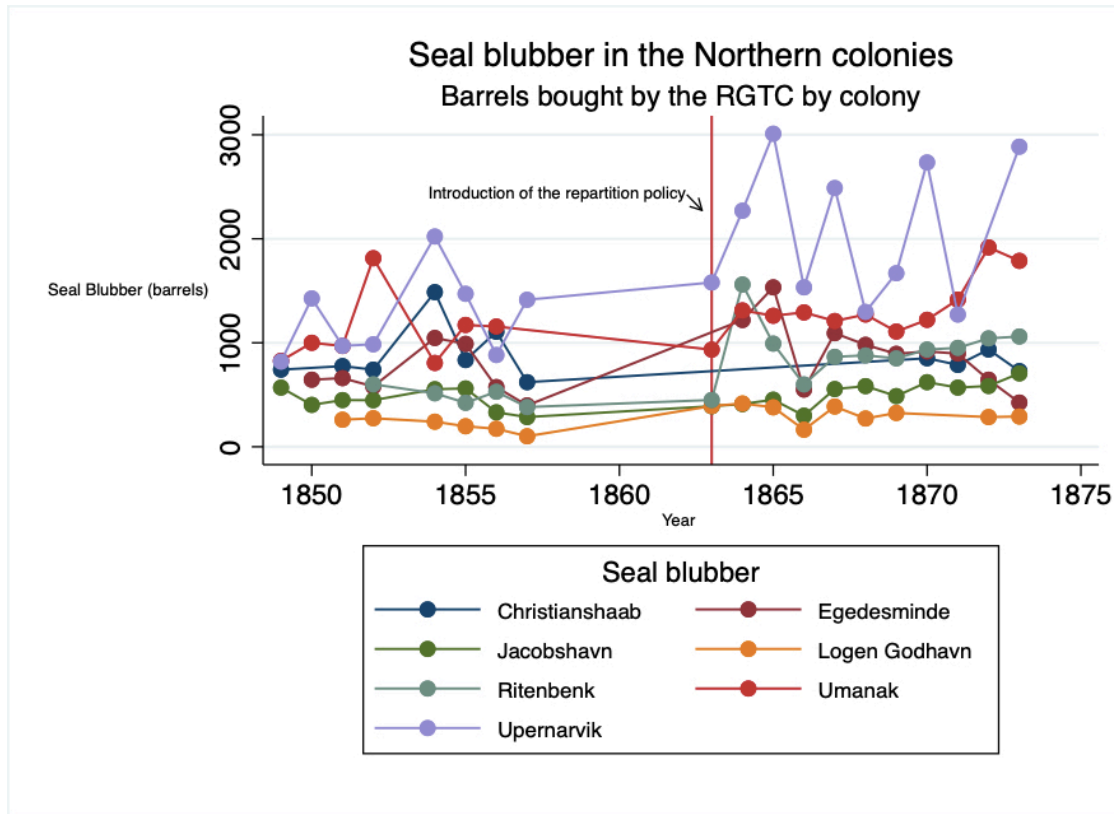


Figure 5. Source: Braunschweig, 2021

7.2. Population

Population data is collected from Statistical Reports on Greenland. These reports contained information on the state of the colonies with a focus on population development. The colonies varied in size as shown by the range 235-2617. Each colony, however, had a fairly consistent population size. See figure 8 in appendix. The figures were reported once every five years, which means that the numbers do not always correspond with the observation year on catch yield. Based on an assumption of linear development between the reported years simple interpolation has supplied the missing values on population size.

7.3. Other variables

The total amount paid to the hunters for their goods is a continuous variable with a range of 0-20980. The currency is Rigsdaler. This amount covers only what was given to the hunters, who were not employed by the RGTC.

The RGTC also ran its own hunting operation. They hunted for seal using nets, as opposed to the traditional method from kayak and different types of whale. In this operation they employed

Greenlanders. This variable consists of the money paid out as salaries to these hunters. There is a downward sloping trend over time for this variable. See figure 6. Looking at the figure it seems, that as incentives for being a self-employed seal kayak hunter increased with the introduction of the repartition policy, thus attractiveness of other employment types would decrease. This is in line with the expectation.

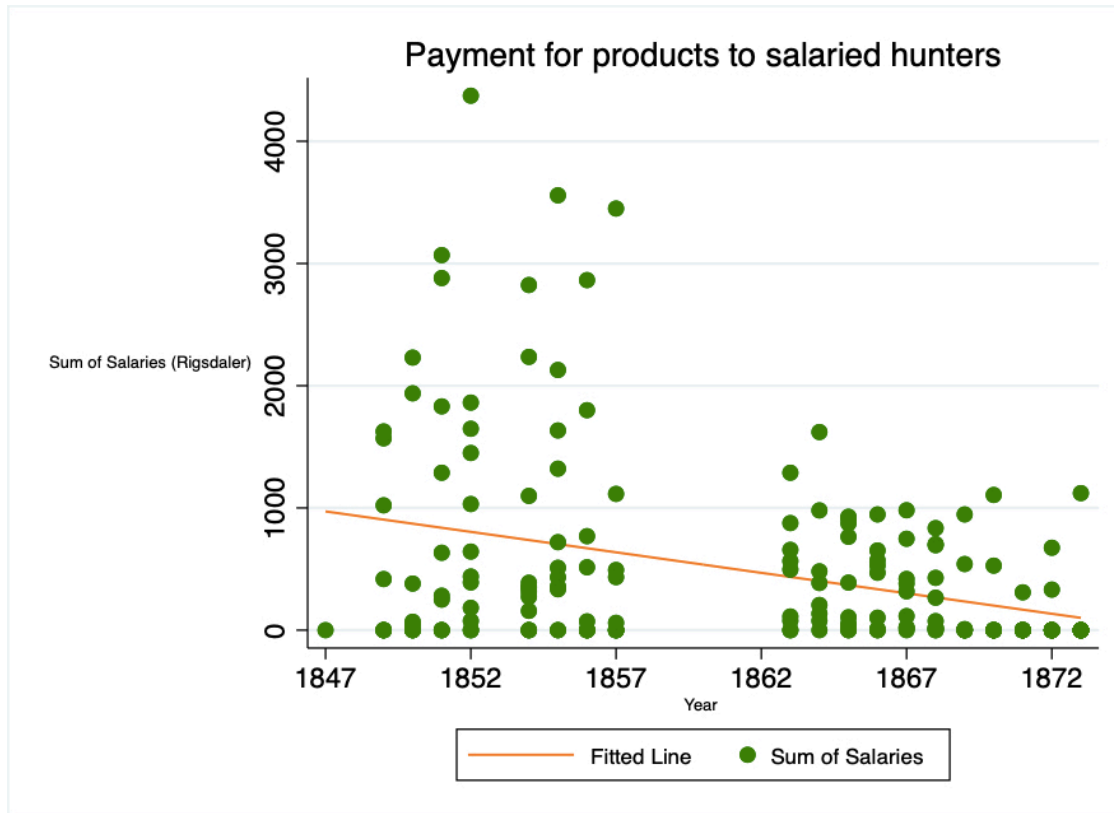


Figure 6. Source: Braunschweig, 2021

Summing up the descriptive analysis, the data shows the overwhelming importance of seal in Greenlandic society. As such, the research design decision to investigate seal as a main variable is finds supports. Additionally, the introduction of the policy in the South and North respectively, seems to be associated with an increase in the seal yield. Furthermore, the composition of employment also looks to be changing over time as shown by the decline in total amount of money paid out for salaried hunting for the RGTC. Below statistical analysis will investigate these relationships further.

8. Methods

8.1. Difference-in-Difference

To examine the short-term impact of the introduction of the repartition policy on productivity and the composition of the goods sold to the RGTC a difference-in-differences strategy will be used. Using data on the years before and after the introduction of the policy, a difference-in-difference analysis will help investigate whether the introduction of the policy is positively related to an increase in seal yield. An important methodological challenge is the fact that the data set is unbalanced crucially lacks observations in the time between the introduction of the policy in the north and in the south.

An important assumption that ensure the internal validity of the difference-in-difference model is the parallel trend assumption. The requirement for this assumption to hold, is that the difference between the treatment variable and control group is constant over time in the absence of the treatment. There is no test for this except for visual, but it has been proposed that the assumption is more likely to hold, the smaller the time period sampled is (Columbia Public Health, 2021).

8.2. Model

As described above, seal blubber and skins were the single most important goods, both for domestic use and export via RGTC. Furthermore, the policy and the introduction of incentives to motivate seal hunt makes seal the product category of interest to this investigation. As shown above, the total amount of blubber bought by the RGTC correlates, as would be expected, with the total amount of skins.

Thus, I estimate the model of the following form

$$\ln(Y_{ipt}) = T_{it} + \beta_p + \theta_i + \lambda_t + \varepsilon_{it}$$

Where $\ln(Y_{ipt})$ is the natural logarithm of amount of seal blubber bought by the RGTC in colony i in year t as determined by the treatment variable T_{it} and a control for population size β_p . The treatment indicator consists of a dummy variable that takes on a value of 1 for observations after the introduction of the policy. I exploit the fact that the policy was introduced in the Southern colonies in 1857, whereas it was introduced in the Northern Colonies in 1863. λ_t consists of fixed effects for each year in the period and captures other effects that might influence seal catch yield, e. g. national weather patterns, while θ_i consists of

fixed effects for each sub-national colony to capture local geographical differences that might affect marine catch yield. ε_{it} is the error term. To increase statistical significance another version of the model without fixed effects for year will also be estimated.

Based on the theoretical background on incentives above we can hypothesize the following: While other incentivized behavior like caring for others might be negatively affected by the introduction of incentives, the expectation is that productivity would increase following the introduction of the policy.

As the notion of retraditionalizing society, through the emphasis of seal hunt, was an important aim of the policy, another way in which an effect of the policy could be observed is on the composition of products sold. It was a condition for receiving shares of the repartition that the recipient supported himself through seal hunt from kayak. In this way the incentive to hunt for seal increased and perhaps more importantly the incentive to hunt for everything else as well as being employed by the RGTC decreased. Ideally, a single variable that covers all goods purchased by the RGTC, not including seal, would be constructed to test whether a move away from other types of production than seal hunt can be observed. This is not an easy task however. The first issue relates to units. Some goods are given at a per-piece basis, e. g. pelts and skins, while some are given by their weight, e. g. feather and down, and others by their mass, e. g. blubber. The second relates to the different monetary value of each good. Lastly, it would be necessary to somehow estimate the opportunity cost for the individual hunter by getting an understanding for the time spent and the risk factor in acquiring the individual goods. While it might be possible to construct a useful figure with these aspects in mind that could deepen the understanding of the repartition policy, it would be so time-consuming that it is a research project all on its own. Therefore another strategy must be pursued.

Using the collected data, the result of the changed incentives might be observed in a different way. As mentioned above the RGTC ran its own hunting operations. The company operated about a dozen whaling ships. It also organized seal catch using nets. For these operations Greenlanders were employed. The amount paid out as salaries to these workers are also a part of the Schematic Reports. Constructing a variable from these numbers is much more straightforward and can be created via simple summation. Thus, the second model is identical to the first except in this iteration, I estimate the amount paid out to Greenlanders as salaries for their work for the RGTC with the following model.

$$\ln(Y_{ipt}) = T_{it} + \beta_p + \theta_i + \lambda_t + \varepsilon_{it}$$

The expectation is that as incentives for hunting seal the traditional way increased, the Greenlanders would be less likely to take on wage labor positions.

9. Results and Discussion

The OLS estimates for model 1 are presented in table 5 column 1. The coefficient is negative, which is not in line with the expectation and is not statistically significant. The lack of significant results may be due to a variety of reasons.

Firstly, the lack of observations in the time period between the policy's introduction in the southern colonies and in the northern colonies may be of importance. This lack of observations impacts the precision of the treatment variable. Instead of there being two points in time, where an impact may be observed, in effect, there is only one, 1863. At this point in time, the policy has already been in effect for six years in the southern colonies and only just introduced in the northern colonies. As such, some noise is created in the data. This may be accounted for by way of analysis. Adding a six years period to the year in which the policy was introduced in the northern colonies, 1863. This may improve the significance of the results. However, it would also require that the years sampled to be extended with six years in order to ensure validity of the analysis.

Secondly, a lack of variance in the data may be another explanation for the lack of statistical significance of the analysis. As mentioned previously, a shipwreck in the middle of the 20th century resulted in a great loss of historical material. The ship mainly carried archives from the southern colonies. This results in a lack of variance, but also a possible bias in the data, because the northern colonies are more represented.

Leaving the statistical analysis aside for a minute, the lack of an economically significant result might be explained by the other incentives pulling the other way. As discussed above, the aim of increasing productivity and industrious behavior, while simultaneously encouraging frugality by via less trade-in, might affect the total trade-in in opposite directions simultaneously.

Another explanation may be that the behavioral change following an alteration in the incentive structure takes longer to manifest, than the years sampled. Once again increasing the temporal sampling might increase significance of the results. However, in this regards it is important to note that increasing the sample size, might violate the assumption of parallel trends as already mentioned.

Furthermore, the difficulty in determining income from other employment and the uncertainty around the ratio of catch kept compared to amount sold to the RGTC further question the immediacy of the impact caused by the introduction of the policy.

Two changes may be made to the analysis to improve on the statistical significance. Firstly, as mentioned above sampling more years particularly in the period after the introduction of the policy may improve significance. The second change is related to the model used, where a less restrictive approach may yield significant results.

The lack of data means that fixed effects for years might be too restrictive. Running the regression without fixed effects for year improves on the statistical significance and results in a coefficient that is positive, statistically significant at the 10% level and in line with the expectation. See table 5 column 2. Here, a less restrictive analysis yields a statistically significant result and a positive correlation is found between seal catch and the introduction of the policy. In this way, some corroboration is found for the positive relationship between seal catch and the introduction of the policy observed in the descriptive statistical analysis.

Table 5 column 3 presents the OLS estimates for model 3. The treatment variable is negative in line with expectation. This means that the amount of money paid out to Greenlanders as total salaries paid out fell substantially alongside the introduction of the policy. This would suggest that the increased incentive to hunt for seal from kayak made the Greenlanders shift from other forms of income in favor of the traditional hunting method. However, the result is not statistically significant.

Table 5. Regression output

VARIABLES	(1) (ln) seal blubber	(2) (ln) seal blubber (without FE for years)	(3) (ln) Sum of salaried labour
Treatment	-0.160 (0.202)	0.317*** (0.0543)	-1.745 (0.999)
(ln)Population	0.339* (0.167)	0.312* (0.147)	0.758 (1.956)
Constant	4.541*** (1.081)	4.390*** (0.961)	-1.543 (12.61)
Observations	187	187	187
R-squared	0.448	0.251	0.388
Number of Colonies	12	12	12

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

10. Further Study

As mentioned above, the current analysis could be improved by further data collection from the sources used for the study, namely the *Schematic Reports*. Increasing the temporal sampling may yield better results. However, other sources may also be used to assess the effects of the repartition policy.

This study has been concerned with the productivity part of the repartition policy, and as discussed above, the lack of overwhelming evidence for the impact of the policy may be due to the fact that other incentives were pulling in different directions. For this reason, it is important that policy was constructed with the other aims in mind, namely frugality, retraditionalization and caring for others. As such, an interesting future avenue of research could be concerned with assessing the impact the policy had on the other areas of interest, namely, retraditionalization and caring for others.

Exploring the source used for this study, the *Schematic Reports* further could illuminate the other issues. As described above, the reports contained information on boat ownership. The retraditionalization aspect could be investigated further by looking into the ratio of traditional Greenlandic boats to European boats. In this way, Rud's theory that the hunter Johan Broberg

had switched boats could be assessed. Here, we might observe a surge in the ownership of traditional boats around the introduction and a dip around the time the policy was discontinued in 1910. Statistical Information on Greenland (1945) includes data on boat ownership around 1910 and a quick look at the numbers shows a dip in ownership of umiaks and a surge in the ownership of wooden boats around 1910.

Another and perhaps more interesting avenue of further research would be to look into the protocols from the annual meetings of the wardenships that were used in current study to determine the key used to award the repartition shares. These protocols if transcribed contain micro-level data that could be exploited to understand how people cared for each other. Heads of families were allowed to induct anyone they pleased into their families. This would entail housing these people as well as providing for them in terms of food and clothing. Simultaneously, it would increase the amount of shares of repartition received. As described above intrinsic incentives tend to be crowded out by the introduction of extrinsic incentives. As such, it will be interesting to investigate whether a dip in “caring for others” can be observed in the data.

11. Conclusion

With this study, I have shown that the wardenships and particularly the repartition policy were introduced in order to combat the socio-economic crisis of 1850-1880 in Greenland. Based on a paternalistic understanding of the Greenlandic natives, the colonial administration believed that the crisis was caused by irresponsible economic behavior and the disappearance of the custom of caring for one another.

With this diagnosis of the crisis in mind, Rink and the broader administration, designed a policy that was meant to protect the traditional customs and way of life, while encouraging industrious behavior and a frugal lifestyle. This policy, if successful, would not only increase living standards among the natives, but also increase profits for the RGTC. This policy marks the beginning of a movement towards stronger economic institutions, namely representation in local government.

The policy was designed to create behavioral change through the introduction of so-called extrinsic incentives in the form of a monetary reward given to prolific hunters that displayed

frugal behavior and cared for their neighbors. Through my archival research, I have widened the general understanding of the policy by determining exactly how the policy was used in practice. This knowledge corrects some of the misinterpretations in the literature and enables an analysis of the impact of the policy.

With our current understanding of incentives as a tool for behavioral change, I have shown that, where intrinsic and reputational incentives are concerned, the introduction of monetary rewards may have perverse effects. With regards to productivity, however, the relationship is more straightforward, increased monetary incentives are associated with better performance. As such, the expectation was that increased monetary incentives for seal catch is associated with an increase in productivity as seen in the quantity of seal sold to the RGTC by the hunters.

By transcribing data on catch yield, I have collected a data set which enables testing of whether such a relationship can be observed. I have been able to find some support for the notion that the introduction of the policy is associated with an increase in productivity, as understood in terms of seal catch yield, albeit without fixed effects for years.

Further studies, using the data I have transcribed and data from the designation protocols, can further illuminate the effects of the policy in terms of the impact on the other aims of the policy, namely the degree of caring for others.

12. Archival Sources

The Danish National Archives

Direktorat Kgl. Grønlandske Handel - Bogholder- og Korrespondancekontor, 458, *Skematiske Indberetninger fra kolonierne til direktionen 1849-1947*, National Danish Archives

The National Archives of Greenland

Julianehåb forstanderskab, 31.02.00, *Forhandlingsprotokoller*, 04.10: Protokol for Julianehåb forstanderskab 1860-1880

Egedesminde forstanderskab, 31.10.02, *Forhandlingsprotokoller*, 04.10: Protokol for Egedesminde forstanderskab 1860-1880

Jakobshavn forstanderskab, 31.12.00, *Forhandlingsprotokoller*, 04.10: Protokol for Jakobshavn forstanderskab 1860-1880

Ritenbenk forstanderskab, 31.13.00, *Forhandlingsprotokoller*, 04.10: Protokol for Ritenbenk forstanderskab 1860-1880

Umanak forstanderskab, 31.15.00, *Forhandlingsprotokoller*, 04.10: Protokol for Umanak forstanderskab 1860-1880

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14. Appendix

Table 6. Distribution key. Source: Braunschweig, 2021.

Name	Year	Settlement	Class			Property			Total shares of repartition	Total amount rewarded	
			1st	2nd	3rd	Wife's boat	Dog sled	Money in the bank		Rigsdaler	Skilling
Isak Gideonsen	1865	Egedesminde	3	0	0	0	0	0	3	4	13
Jens Erik Øster...	1867	Egedesminde	3	0	0	0	2	0	5	6	85
Henrik Liksamiak	1872	Egedesminde	0	0	1	0	2	0	3	4	13
Niels Steenholdt	1865	Nivak	3						3	4	13
Lars Johansen	1867	Nivak		2		3			5	6	85
Jacob Olsen	1872	Nivak		2		3	2		7	9	61
Gudmand Johans	1865	Sukkertoppen	3			3	2		8	11	2
Adam Johansen	1867	Sukkertoppen		2					2	2	72
Jonas Stork	1872	Sukkertoppen	3			3	2		8	11	2
Andreas Lau...kse	1865	Umanak	3			3	2		8	11	2
Siucan Lau...ksen	1867	Umanak			1				1	1	36
Jørgen Reimer	1872	Umanak			1	3	2		6	8	25
Ludvig Johansen	1865	Holsteinborg		2		3			5	6	85
Thomas Berthols	1867	Holsteinborg			1	3			4	5	49
Conrad Jakobsen	1872	Holsteinborg			1	3			4	5	49
Silas Smith	1865	Frederikshaab	3			3			6	8	25
Mikkel Smith	1867	Frederikshaab	3						3	4	13
Hans Johansen	1872	Frederikshaab	3						3	4	13
Henrik Smith	1865	Ritenbenk			1				1	1	36
Just Smith	1867	Ritenbenk	3			3			6	8	25
Samuel Smith	1872	Ritenbenk			1				1	1	36

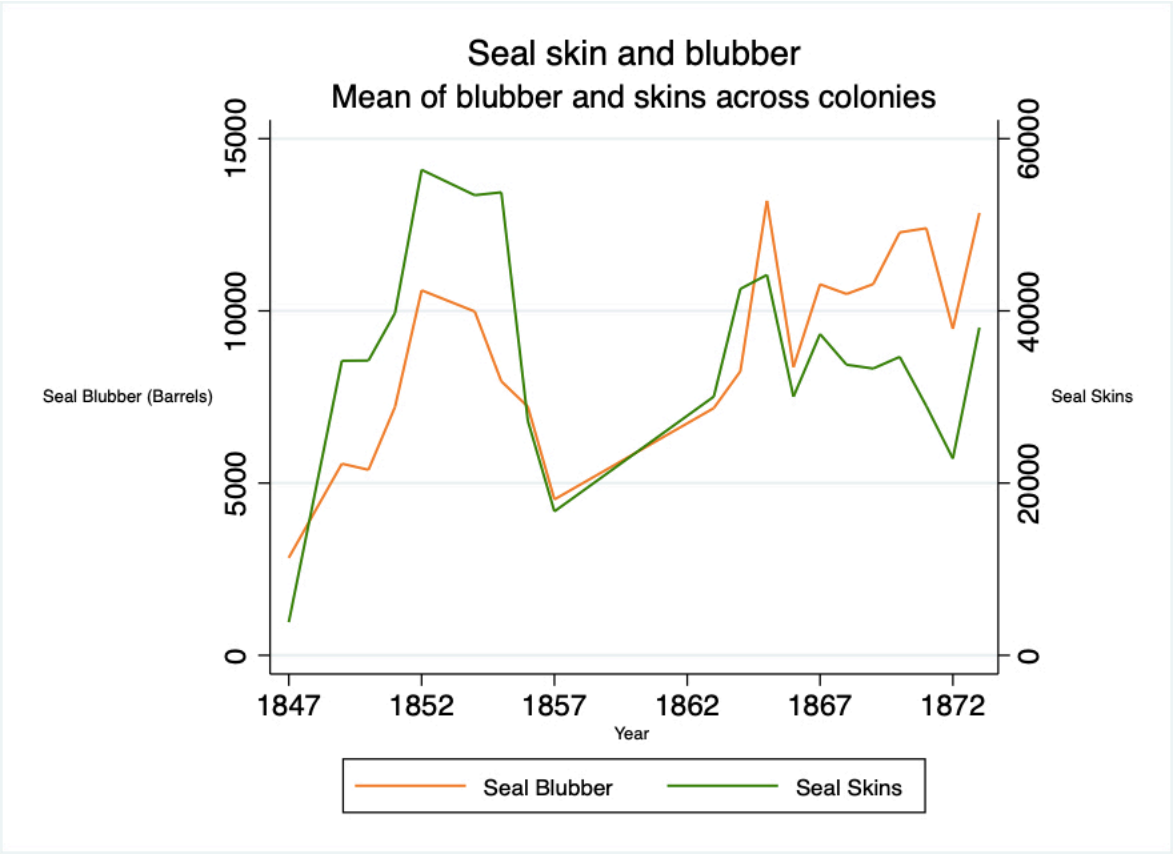


Figure 7. Correlation blubber and skins. Source: Braunschweig, 2021

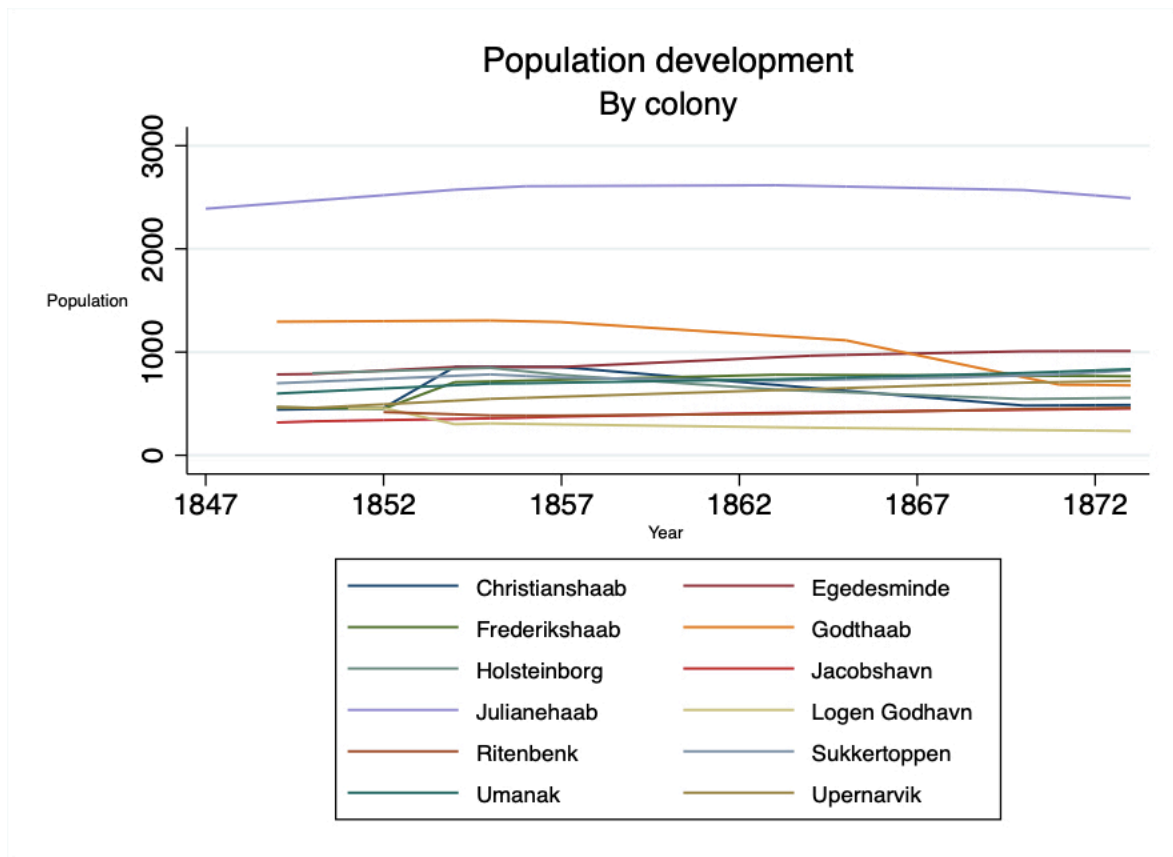


Figure 8. Population development. Source: Sveistrup & Dalgaard, 1942