Financing higher education in Tanzania: Exploring challenges and potential student loan models

Carl Johansson and Jacob Lundborg Ander

DIVISION OF INNNOVATION ENGINEERING | DEPARTMENT OF DESIGN SCIENCES
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MASTER THESIS

Financing higher education in Tanzania: Exploring challenges and potential student loan models

A case study in Tanzania

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Supervisor: Jessica Wadin
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Abstract

The demand for higher education is quickly rising in the Sub-Saharan Africa region and the question of giving access to all members of society often comes down to financing. Many countries, including Tanzania, have opted for cost-sharing policies where the cost of education is split between the state and the individuals - leaving many without the possibility of attending higher education.

This master thesis, conducted together with Swedish NGO Help to Help, aims to research the challenges students in Tanzania face when financing higher education, and understanding the implications of different student loan terms and policies in the Tanzanian context.

This study is based on a literature review, qualitative interviews, both with students in Tanzania and experts in the field, and a quantitative analysis of different loan models. The loan model analysis examines the perspective of both main stakeholders of a student loan - the lending entity and the student - by looking at key measurements such as repayment burden and built-in subsidies.

Students in Tanzania encounter several challenges when they are trying to finance higher education. Given that the main realistic financing alternative is the governmental student loan institution (HESLB), many of these challenges are related to their operations. The preeminent one is that HESLB lacks the supply to grant everyone who needs a student loan.

There are many factors in a student loan design that have a large operational and financial impact. The primary ones include the repayment plan, the interest rate, and the policy of payment deferment. These terms have a great impact on the repayment burden of the loan beneficiary and the number of built-in subsidies that the lending entity allows.

Organizations giving student loans are faced with the dilemma of keeping themselves financially sustainable while also taking social responsibility by supplying fair loans. Balancing these two sides could lead to long repayment horizons, large capital risks, and much uncertainty.

Keywords: student loans, Tanzania, loan policies, repayment burden, income-contingent loans

Sammanfattning

Efterfrågan på högre utbildning ökar snabbt i Subsahariska Afrika och frågan om att ge tillgång till alla samhällsmedlemmar handlar ofta om finansiering. Många länder, inklusive Tanzania, har valt en kostnadsdelnings policy, där utbildningskostnaderna delas mellan staten och individerna - vilket gör att många saknar tillgång till högre utbildning.

Detta examensarbete, som genomförs tillsammans med ett svenskt NGO, Help to Help, syftar till att undersöka de utmaningar studenterna i Tanzania står inför när de finansierar högre utbildning, samt att förstå konsekvenserna av olika studielånvillkor och policyer i det tanzaniska kontexten.

Denna studie baseras på en litteraturstudie, kvalitativa intervjuer, både med studenter i Tanzania och experter inom området, och en kvantitativ analys av olika lånemodeller. Analysen av lånemodellerna granskar perspektivet hos båda huvudsakliga parterna i ett studielån - organisationen som lånar ut och studenten - genom att titta på nyckelmått som återbetalningsbördan och inbyggda subventioner.

Studenter i Tanzania stöter på flera utmaningar när de försöker finansiera högre utbildning. Eftersom det huvudsakliga och viktigaste finansieringsalternativet är det statliga institutet för studielån (HESLB), är många av dessa utmaningar relaterade till deras verksamhet. Den främsta är att HESLB saknar medel för att bevilja alla som behöver studielån.

Det finns många faktorer i en design av studielån som har stor operativ och ekonomisk inverkan. De främsta inkluderar: avbetalningsplanen, räntan och policyn för betalningsuppskov. Dessa villkor har stor inverkan på återbetalningsbördan för låntagaren och mängden inbyggda subventioner som den långivande enheten ger.

Organisationer som ger studielån står inför dilemmat att vara ekonomiskt hållbara samtidigt som de tar socialt ansvar genom att tillhandahålla rättvisa lån. Att balansera dessa två sidor kan leda till långa avbetalningshorisonter, stora kapitalrisker och mycket osäkerhet.

Nyckelord: Studielån, Tanzania, lånepolicy, återbetalningsbörda, inkomstberoende lån

Preface

This master thesis researches what challenges students in Tanzania experience when financing higher education and explores different student loan models that fit the Tanzanian context. The student loan designs examined in this study are broken down into loan terms and loan policies; both are thoroughly discussed to find a balance between the social responsibility of funding education with the financial obligation it requires to run a lending operation.

This study was conducted in collaboration with Help to Help and Lund University's faculty of engineering. Thank you to the staff at Help to Help, Clara Luthman and Naomi Shimba, for your warm and welcoming atmosphere and for making this thesis possible. Thank you to our supervisor Jessica Wadin at the Faculty of Engineering in Lund for your support and guidance.

Finally, a large thank you to Malin Cronqvist for inviting us to do this thesis and inspiring us with your enthusiasm and energy.

Lund, May 2021

Carl Johansson and Jacob Lundborg Ander

Table of contents

List of acronyms and abbreviations

GER	gross enrollment ratio
GDP	gross domestic product
HE	higher education
HESLB	Higher Education Students' Loans Board
ICL	income-contingent loan
ISA	income-share agreement
NBS	Tanzania National Bureau of Statistics
NER	net enrollment rate
NGO	non-governmental organization
NPL	non-performing loan
SSA	Sub-Saharan Africa
TCU	Tanzania Commission of Higher education
TZH	Tanzanian shilling
UN	United Nations

1 Introduction

This chapter introduces the topic of the master thesis and presents the purpose of this study together with research questions and delimitations.

1.1 Background

The United Nations General Assembly has 17 interlinked global development goals to be reached by 2030. The fourth goal is "Quality education," which refers to ensuring "inclusive and equitable quality education and promoting lifelong learning opportunities for all." This goal includes "affordable higher education" and "an increased number of people with relevant skills for financial success" (United Nations, Department of Economic and Social Affairs, n. d.). As of 2021, 76.7% of the population in North America and Western Europe have participated in higher education while only 8.5% in Sub-Saharan Africa **(**Calderon, 2018**)**.

Higher education not only yields higher income and better health for the individual but also gives societal gains to the community (McMahon & Oketch, 2013). Many are excluded from pursuing education because of the cost. Student loans can be an instrument to grant financially needy students access to higher education, and a supportive lending entity can provide many with skills needed for financial success.

1.1.1 **University and higher education development in the world**

The amount of people participating in higher education has seen a significant rise in recent years. It is projected to have increased by 596% between the years 2000 and 2040. At the same time, the world is experiencing a shift in geographical population. Africa will go from having 13% to 26% of the world's population and have 78% of the population growth for people at university age (Calderon, 2018). Since there is a substantial projected increase in people attending higher education and the majority of the young population coming from Africa, there will be a large

estimated demand for higher education in those areas. However, according to Suresh & Kumaravelu (2017), the financial burden of the increased demand is too high for the nations to satisfy. The cost is instead put on the students and their families. This means that there will be increased demand for a way to finance higher education, especially for lower-income individuals who currently have next to no participation in higher education in some parts of Sub-Saharan Africa (Independent Evaluation Group, 2017).

1.1.2 **The importance of access to higher education**

According to the World Bank Group (2018), higher education is beneficial both for students and society. It relates to a higher income, higher employability, better health, and great longevity for the individual. The personal benefits have spillover effects on society, resulting in more revenue in taxes, lower crime rates, and a healthier population (McMahon & Oketch, 2013).

1.1.3 **Financing higher education**

Countries in Sub-Saharan Africa currently have a wide variety of different loan schemes. Still, due to vast reductions in governmental student support and other grants, many countries struggle to accommodate the increasing demand for higher education. Furthermore, the student loans that the governments have offered often suffer from many problems such as high default rates, poor management, difficulty in tracking down students, and, most importantly, lack of funds. The banks are often unwilling to lend money to students due to the lack of accountability present in many of these countries (Oketch, 2016).

The problem of financing higher education is complex, but there are some proposed solutions. Salmi and Haptman (2006) advise that unsubsidized loans could be used, which would be relatively cheap and therefore reach more people. Private funding has also been seen as an alternative to accommodate excess demand. However, both solutions only cater to the population from the higher income quantiles with the financial capabilities to use them, resulting in an inequitable higher education.

1.1.4 **Help to Help**

This thesis was conducted in collaboration with the non-governmental organization (NGO) Help to Help. Help to Help, founded in 2010, is an

organization that promotes access to higher education and labor market skills to 18-30-year-old individuals in East Africa. This is achieved by providing crowdfunded scholarships to students and arranging Help to Help Academy, which teaches marketable skills (Cronqvist, 2021; Luthman, 2021).

The Help to Help scholarship covers tuition fees for financially needy and motivated students pursuing higher education in East Africa. People who receive the scholarships are seen as potential changemakers who can use their knowledge and motivation to positively impact society. As of 2021, Help to Help has supported 389 students, 189 of them have graduated, and most have started to help finance education for someone else (Cronqvist, 2021; Luthman, 2021).

The Help to Help Academy provides free training in work- and labor market skills to students in East Africa. Over 2000 students have attended an Academy program activity to increase work- and labor market skills to help attendees be more marketable and have higher confidence (Cronqvist, 2021; Luthman, 2021).

Help to Help is looking into ways of scaling up the impact they can provide. One way they want to explore is to introduce a student loan to complement their scholarship program. A successful loan scheme would allow Help to Help to remain financially sustainable while providing access to higher education for many years to come (Cronqvist, 2021; Luthman, 2021).

1.2 Purpose

This study aims to research the impact of higher education in Sub-Saharan Africa and evaluate different student loan options to finance higher education for individuals. Mainly, this study considers the opportunities and obstacles for an organization to operate a student loan scheme in Tanzania. There are two main aspects to this. First, an analysis of the challenges students currently face when trying to finance their education. Secondly, how different loan terms and policies affect the situation for a loan beneficiary and what financial implications they have for the lending organization in the Tanzanian context.

1.2.1 **Research questions**

1. What challenges are Tanzanian students currently facing when financing their higher education?
2. What factors need to be considered when designing a student loan in Tanzania?

3. What financial implications do different loan terms and policies have for the loan beneficiary and lending entity?

1.3 Delimitations

The explored method of financing higher education will be focused on student loans. The student loans will be discussed in theory, and implementation concerns will not be the main topic in this study. The thesis will consider theory and examples from a broad geographical perspective but narrow down to mainly focus on the student loan environment in Tanzania.

The case organization Help to Help will be the lending organization in mind during the discussion and recommendations. Much of the results are derived from interviews with either the case organization or people in their network, such as administrative personnel at partner universities or students who have attended Help to Help Academy.

2 Methodology

This chapter describes the work process and methodology used for data collection and analysis. Also, ethical aspects and research credibility are discussed.

2.1 Research strategy

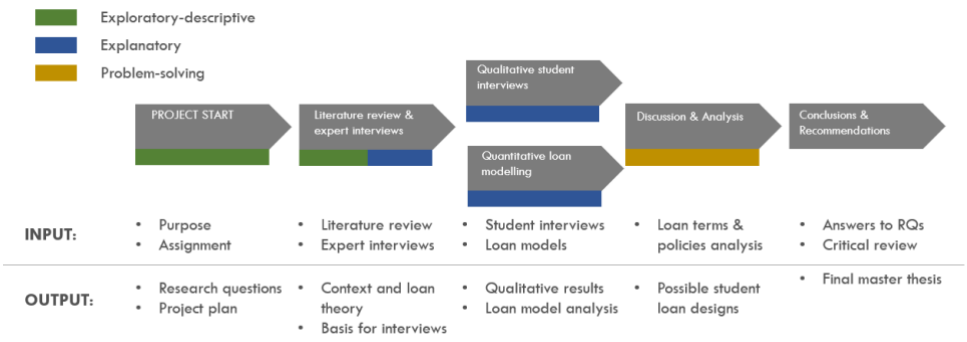

Figure 2.1: Research work process

According to Denscombe (2010), the choice of the research strategy is one of the most important decisions made for a project. The strategy works as an overview of the entire project and a plan of action together with a clearly defined goal.

The research started with defining the purpose of the study; thereafter an overview of the project was created and segmented. At each segment of the study, a plan for the input and expected output was formulated. This process culminated in answers to the research questions. Generally, the first part of the study was used to understand and describe the challenges of financing higher education at an international and national level in Tanzania. The last part of the study explored solutions to these challenges by examining different loan models and policies.

The thesis used exploratory and descriptive methods during the first part. An exploratory study seeks to explore what is happening (Saunders, Lewis, &

Thornhill, 2009), while a descriptive study aims to examine and depict a specific event or situation (Höst, Regnell & Runeson, 2006). These methods were used to describe and understand the current state of education, especially the state of higher education, in Sub-Saharan Africa and specifically Tanzania.

After the exploratory-descriptive phase was completed, an explanatory study was conducted. An explanatory study is more thorough than a descriptive study in understanding a certain phenomenon and tries to identify causality (Höst et al., 2006). The explanatory study consisted of both interviews and a questionnaire where the intention was to deepen understanding of the challenges with the current financing situation and what causes them. Furthermore, the modeling of the different loan schemes was part of the explanatory phase. The modeling was conducted to better understand how different loan terms and policies affected the students. Finally, the last part of the thesis took a problem-solving approach. This method is commonly used in engineering studies with a goal of solving a specified problem (Höst et al., 2006). This part consisted of discussing and presenting possible loan solutions with the knowledge gained from the previous parts of the study.

There are two main research alternatives, either quantitative or qualitative research. The main distinction between the two approaches is that quantitative research uses numbers as the unit of analysis and examines specific variables. In contrast, qualitative research uses words or visualization to give a holistic perspective (Denscombe, 2010). The early phases of the study used a qualitative approach to view the problem using both the literature review and the exploratory interviews. A quantitative approach was used better to estimate the effectiveness of the different loan models during the loan modeling process.

2.1.1 **Research approach**

According to Timmermans and Tavory (2012), there are three different ways to approach research: deductive, inductive, or abductive. This paper used abductive reasoning, which is when the consequences are identified, and then the most reasonable explanation for why it occurs is deemed the best answer. This choice is because the paper seeks to determine why the challenges of the current financing situation exist so that they can be handled with a new student loan model. However, it is easier for the interviewees to communicate their challenges and often harder to understand the root causes. Therefore, the interviews and questionnaire focused on identifying the challenges and afterward infer the best explanation for why they occur.

2.2 Data collection

2.2.1 **Literature review**

A literature review gives a proper background on what research has been published before on the subject. This ensures that the reader has a good understanding to base their analysis on and make sure that the new research adds to the issue rather than repeats and reinvents earlier published material (Saunders et al., 2009).

The literature review was an iterative process that was continued throughout the writing of the thesis. This study did a literature review of the effects of a university-educated population in developing countries and the effects of student loans giving access to higher education both on a global scale and specifically for Tanzania. Theories on student loan design and their effects on the loan beneficiary were also explored.

The sources for this study were found through the search engines LUBSearch and Google Scholar with the following keywords in combination: “Sub-Saharan Africa,” “higher education,” “Student loan design,” “Financial literacy,” and “income-contingent loans.“

- LUBSearch: the search engine for academic articles, journals, PhD theses, and more, provided by Lund University.
- Google Scholar: the search engine for academic articles, journals, PhD theses, and more, provided by Google.

2.2.2 **Qualitative Interviews**

Qualitative interviews have been used throughout the research to complement and further knowledge gained from the literature review. During the exploratory-descriptive phase, interviews were conducted with Help to Help personnel in Tanzania and other experts to acquire a better understanding of the current state of financing higher education in Tanzania. During the explanatory phase, interviews were conducted to further understand students' challenges and why they occur. Finally, during the problem-solving phase, interviews were conducted to validate the proposed solutions.

The structure of the interviews suits different types of research. A structured interview is preferable for descriptive research. Semi-structured interviews are more suitable for exploratory or explanatory, while unstructured interviews are

optimal for exploratory (Saunders et al., 2009). During the different stages of the research process, different types of interview structures have been used. During the early stages, structured interviews were used to help describe the current situation and challenges, which transitioned into semi-structured interviews during the explanatory phase.

During the explanatory process, 8 Tanzanians were interviewed using a semi-structured format. These interviews were conducted to explore the challenges students face regarding their student loans. Before creating the interview guide for these interviews, a pre-study consisting of interviews with experts and 4 Ugandan students was conducted to ensure the questions were relevant and easily understandable. The interviews were all recorded and subsequently transcribed. The 8 Tanzanian students interviewed were picked to represent both students who recently started taking the loan, students who did not get any loan, and upcoming graduates who will stop receiving the loan.

Table 2.1: List of interviewees.

Interviewee	***Role***
Malin Cronqvist	Founder and CEO, Help to Help
Clara Luthman	COO, Help to Help
Naomi Shimba	Head of Operations, Help to Help
Epifania Sylivester Mhagama	Former student and Help to Help volunteer
Geofrey Mshana	Professor and student counselor, University of Dar es-Salaam
Sayumwe Kayanda	Chief Internal Auditor, University of Dar es-Salaam
Batya Blankers	Co-founder and CEO, CHANCEN International
4 Ugandan students	Applicants to Help to Help scholarship
8 Tanzanian students	Current students at different universities in Tanzania

2.2.3 **Questionnaire**

Questionnaires work well when the questions are standardized and interpreted in the same way by all respondents and are therefore best used in descriptive or explanatory research (Saunders et al., 2009). This study used a questionnaire to understand Tanzanian students' perception of their current loaning situation and assess their financial knowledge and thoughts about the future.

This study chose to have questions primarily with a Likert-scale from 1 to 5 and the occasional open-ended questions asking the respondents to motivate their answer when more insights and explanations were needed. Some questions were

also incorporated to determine characteristics of the respondent, such as age, gender and if they were still studying or have graduated.

Before designing the questionnaire, four interviews were conducted to better understand what areas to explore. During these interviews, several themes related to the student loaning situation in Tanzania appeared, and the final questions in the questionnaire were arranged according to these themes. The questionnaire was tested and changed through an iterative feedback process together with staff from Help to Help in Sweden and Tanzania so that the questions were easily understandable and designed to give answers with the study's objective in focus.

The questionnaire was distributed through Help to Help's social network in Tanzania using email and WhatsApp. The questionnaire collected 121 answers in total from both graduates and students.

Table 2.2: Respondents to questionnaire.

	Information
Number of respondents	121
Gender	74% female, 26% male
Age	Ranging from 19-30 years, majority being 23 years old
Graduates	18% have graduated, 82% have not
Type of degree (both graduates and those currently studying)	73% bachelor, 27% diploma/certificate
Help to Help scholar	51% did not have a scholarship from Help to Help, 49% did have a scholarship

2.2.4 **Loan modelling and data collection**

The loan modeling examines the economic burden from both the student and lender perspective and studies multiple different loan schemes, namely, income-contingent loans (ICL), income share agreements (ISA), linear amortization loans, and annuity loans. The literature review laid the groundwork for how to construct linear, annuity, and ICL models. Experts were consulted when creating the ISA student loan due to the limited literature written on the subject.

Table 2.3: Overview of loan models.

	Normal Linear Loan	*Annuity Loan*	*Income Contingent Loan (ICL)*	*Income Share Agreement (ISA)*
Repayment	Amortization and interest	Equal repayment every installment	Percent of total income until repaid	Percent of total income for set amount of time
Time horizon	Predetermined	Predetermined	Until repaid or retirement	Predetermined
Uses interest	yes	yes	yes	No

The statistical data and variables used in the loan modeling were collected mainly from the Tanzania National Bureau of Statistics (NBS) and Higher Education Students' Loans Board (HESLB). Answers on the questionnaire provided the initial income for students.

2.3 Data analysis

2.3.1 **Qualitative analysis**

The qualitative analysis of the interviews and the open-ended questions in the questionnaire were conducted in 3 steps: transcribing, coding, and finding themes.

All interviews conducted were transcribed. The transcriptions kept the meaning and emotion in each statement but were edited to form coherent sentences. In the next step, the transcriptions were coded so that keywords and their immediate context were assigned a descriptive code to assign a symbolic word to that chunk of data. The keywords were identified by acknowledging how many times they were repeated and how much they were emphasized during the interviews. The codes and the chunks of data they symbolized formed themes in an inductive process by organizing the codes in piles with similar content and using labels that emerged during the process to decide on what the final themes were (Ryan & Bernard, 2003).

This was followed by a discussion of the meaning of all themes and their importance for this study. General conclusions were summarized for the case organization and their relevance for a potential student loan.

2.3.2 **Loan modelling**

This paper examined four different loan models quantitatively—namely, ICL, ISA, traditional linear loan, and annuity loan. The discussion segment examined ICL and ISA loans more thoroughly, while normal and annuity were used to compare the students' loan burden. The modeling used the definitions of the different schemes explained in section 3.5. The analysis was made up of comparing repayment burdens, examining what income level receives subsidies, studying the repayment times of different models, risk of the ISA model, and administrative costs of the ICL.

2.4 Ethical aspects

During the writing of the thesis, ethical aspects were considered according to Denscombe's (2017) key principles to ensure proper ethical conduct of the study. The fundamental principles, and this study's interpretation of them, were:

- Treating data collected from interviews and questionnaires confidential
- Keeping respondents anonymous in the report
- Asking for consent before recording interviews
- Informing participants about the research and what their contributions were going to be used for
- Operating within the law
- Upholding scientific integrity and professionalism

2.5 Research credibility

Validity and reliability

Several different sources of information and methods have been used in this study to strive for validity. Interviews and questionnaires have collected qualitative data which have been contrasted with already published research and the opinion of experts within the field. The questions in the interview guide and the questionnaire were aiming to be as unbiased as possible.

To achieve reliability, the study worked structurally with consistent interview guides for all objects. Respondent validations were conducted while comparing conclusions to other sources. Respondents to the questionnaire and interview objects all came from Help to Help's network, but the authors tried to sample students from different universities and backgrounds.

Generalizability

Some of the results in this study, such as the opinion of the current financing situation, represent financially needy students in Tanzania but are not transferable to other countries with other operations in place. However, the loan model results may be transferable and generalizable to environments with similar economic factors.

Objectivity

The authors have strived to keep the study objective and free from their own biases. The main stakeholders are the authors, two students at Lund University Faculty of Engineering, and the case organization Help to Help. There have been no financial incentives for the authors or conflicts of interest between the stakeholders. Help to Help has been positive to the publishing of this study.

3 Theoretical framework

This chapter provides a description of the current state of higher education and the financing of it in Sub-Saharan Africa while also exploring research done on loan design and theory connected to risk assessment and repayment models.

3.1 Higher education in Sub-Saharan Africa

In recent years there has been a surge of people being able to attend higher education worldwide. Between 2000 and 2015, the number of students attending tertiary education increased from 99.7 million to 214.1 million. Furthermore, the number of students are estimated to grow to 377.4 million by 2030 and 594.1 by 2040. (Calderon, 2018) This would constitute a 596% increase in the number of students from 2000 to 2040.

The gross enrollment ratio (GER) for tertiary studies in the world, which is the amount of students participating in a specific part of their education divided by the number of students in the age group that education is intended for, has increased from 9.9% in 1971 to 36.8% in 2016. The increase has been uneven among the different regions globally; North America and Western Europe have increased their GER 76.7%, South and West Asia to 25.0%, and Sub-Saharan Africa (SSA) to 8.5% (Calderon, 2018).

The world is undergoing an increase in population, but also a shift in the world population distribution. In 2015 the world population was 7.4 billion people but was expected to rise to 9.2 billion people in 2040. Africa's share of the world population is projected to rise from 13% to 26% of the world population (Calderon, 2018).

The main participants of tertiary education are aged 18-25. The expected growth of this young population is substantial, and 74% of this age group's growth will come from Angola, the Democratic Republic of the Congo, Egypt, Ethiopia, Kenya, Niger, Nigeria, Pakistan, Uganda, and Tanzania (Calderon, 2018). Since SSA's population, and especially the young population, will have a significant increase, we can assume that there will be a lot more people wanting to attend tertiary education, and these countries' higher education demand will surge.

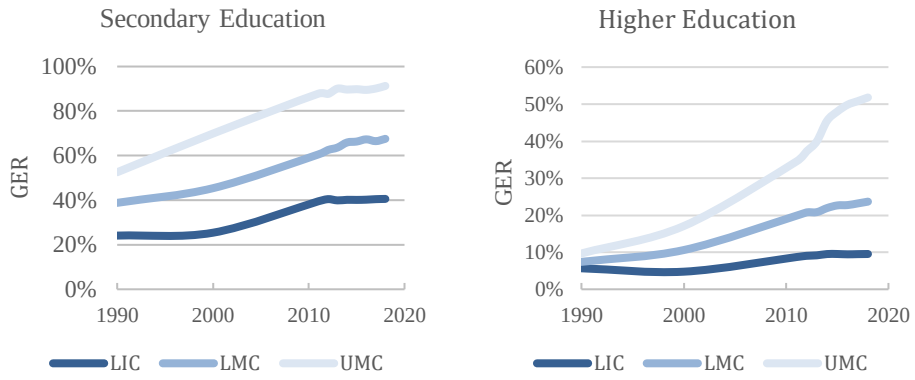

Figure 3.1: Gross Enrollment Rates (GER) for Secondary and Higher Education (World Bank, World Bank Development Indicators, 2021a; World Bank, World Bank Development Indicators, 2021b)

3.2 Benefits of higher education in Sub-Saharan Africa

According to the World Bank Group (2018), higher education (HE) is fundamental both from the individual and society's perspective. The individual benefits from higher education by getting a higher income, becoming more employable, and coping better with economic shocks. An individual with a college level education will earn 17% increased salary per year of completed schooling. This can be compared with primary education's 10% increase in salary per year of schooling. The society also benefits from having an educated workforce by having a higher level of innovation, a better long-term growth, and healthier children.

The benefits that come from HE can be divided into two groups. One is how education increases personal gains and well-being, while the other describes how society benefits from having a more educated population.

Personal benefits

There is clear evidence supporting that HE increases personal income; however, some debate whether the marginal increase is higher for basic education or tertiary education with evidence supporting both cases. More recent studies argue that the marginal benefits are higher for tertiary education (Oketch, McCowan & Schendel, 2014).

According to McMahon and Oketch (2013), higher education increases personal health. The health for bachelor alums will increase by 5.6%, and this is primarily attributed to graduates having problem-solving capabilities, reduced smoking, and other factors. There are also health benefits for the immediate family of graduates; both child and spousal health is proven to increase together with greater longevity.

Societal benefits

Higher education has multiple social benefits for society, including reduced poverty, lower homicide and crime rates, lower welfare costs, higher public health, and lower prison costs. Many of these positive changes increase with the average degree level. Higher education is also argued to reduce environmental degradation through reduced poverty and population growth, which reduces the water and air pollution and deforestation. This is especially true for developing countries (McMahon & Oketch, 2013).

Hoffman and Rex (2005) argue that higher education improves two societal aspects, either monetary or non-monetary. The economic improvements consist of increased productivity due to increased use of technologies and more sophisticated equipment. Another factor that improves society is the technological spillover where knowledge is shared in society and at the workplace, improving productivity further. Spillovers from educated workers will also have non-monetary benefits such as reduced crime rates. This can be explained with economic theory. The higher wages create a higher cost of incarceration, which deters them from committing a crime. Furthermore, it has been empirically proven that participation in civic duties increases with higher voting participation and more work with civic groups.

3.2.1 Challenges with access to higher education in Sub-Saharan Africa

The Independent Evaluation Group (2017) states that access is one of the main problems facing higher education. Where access is defined as being able to attend and complete one's studies. Several challenges must be addressed to allow for better access to higher education and will be discussed in this chapter.

As seen in chapter 3.1, the number of people attending higher education has seen a large increase and is projected to continue growing. The projected growth in people and the expansion of secondary education will most likely result in a much greater demand for higher education in all countries, especially in the developing world (Independent Evaluation Group, 2017). The rise in demands has led to nations not being able to fully fund their populations' education, which has led to a

higher financial burden on students and their families (Suresh & Kumaravelu, 2017).

The higher financial burden on students and their families leads to inequity for low- and middle-income countries where higher education is only easily accessible to the wealthiest socio-economic group. The disparity is exceptionally high in Sub-Saharan countries where the two lowest income quintiles have next to no participation in higher education (Independent Evaluation Group, 2017).

3.3 Financing higher education in Sub-Saharan Africa

According to Oketch (2016), Subs-Saharan Africa has a wide range of different financing schemes, but there are some similarities. Some countries with dual-tracks, such as Kenya, Uganda, and Ghana, where public universities have one portion of students unable to pay that have their tuition subsidized while the other portion of students pays full tuition. However, the amount of people having their education subsidized has in recent years shrunk all over Africa, inviting the private sector to fill the gaps earlier filled by the public.

According to Darvas, Gao, Shen, and Bawany (2017), government-subsidized student loans are one of the most essential tools a nation with a tuition-based higher education have to reduce the inequalities in accessibility of higher education. Currently, 9 out of 44 Sub-Saharan countries have a government student loan program.

Even though student loans are widely used in SSA, they have several challenges, including high default rates, complex rules, and an unfair selection process for the candidates. Without a fair selection process for identifying needy students, student loans pose the risk of instead catering to middle and upper-class students (Independent Evaluation Group, 2017).

According to Oketch (2006), many student loans in Sub-Saharan Africa have been very rushed to compensate for the increase in demand. This has resulted in a wide range of problems in tracking down defaulters, high non-repayment rate, poor loan management, complex rules, and very high administration costs. Finally, governments lack the capital to fund the student loans, and banks are unwilling to lend to students when the governments are fickle, and the student's sense of accountability is less than desirable.

According to Salmi and Hauptman (2006), a solution to the lack of funds is to have unsubsidized loans, which would be cheaper to reach more students. Private funding has also been seen to accommodate the excess demand, but both solutions run the risk of only catering to the elite few due to the cost placed on the students (Oketch 2006).

Scholarships are the other major policy that can enable education for those who cannot afford tuition. These scholarships can come from the government, international bodies such as the world bank, large charitable foundations, universities, and many smaller organizations or companies. However, a merit-based system may lead to funds not reaching the neediest students but instead favor students from middle and high-income families. Therefore, it is important to have Need-based scholarships which have been confirmed to reduce inequality (Independent Evaluation Group, 2017).

3.4 Loan design

According to Lochner and Monge-Naranjo (2016), the optimal student loan should be designed to maximize the utility for the loan beneficiary while fulfilling the participation criteria, such as making break-even for the loaning entity. This would mean that the lender absorbs all risk associated with the loan, such as market labor risks, and even make positive transfers after graduation to allow the borrower to sustain consumption during times of unemployment. However, this would lead to more economically lucky loan takers to pay more than they borrowed to sustain the lending company and the unlucky borrowers.

In reality, that level of commitment from borrowers is practically unrealistic, so the optimal student loan is not viable. Therefore, a student loan must have incentives for the borrower to refrain from defaulting on their payments but at the same time incorporate insurance for those cases where it is impossible to avoid. (Lochner & Monge-Naranjo, 2016) Three main principles for a good student loan are discussed below, which aim to balance insurance and incentives for the borrower while ensuring that the lender can remain financially stable.

1. **Borrowers are expected to fully repay their loan**

To have a sustainable lending model, the lender should give loans under such conditions that the loan is expected to be repaid in full when averaging all possible outcomes for the student. In practice, this will mean that not all students repay their loans in full, and others pay more than their loans (Lochner & Monge-Naranjo, 2016).

Furthermore, it is highly valuable to have a credible institution that has the right incentives and systems to collect the repayments, ensuring that it is a smooth process for both the student and the lender (Albrecht & Ziderman, 1991).

If the loan scheme is designed to not expect the loans to be repaid in full, it should be a conscious choice from the lending organization. Student loans not hoping to

make even may be entirely valid because they see the value in the societal gains of promoting higher education (Albrecht & Ziderman, 1991).

2. **Insurance is a central aspect in the design of student loans**

Taking a degree and paying for it with borrowed money is a risky investment. There is no guarantee, even for successful students, to have a well-paying job after graduating. Therefore, an efficient loan scheme must incorporate some form of insurance against not-ideal labor market conditions. The insurance could be a grace period after graduation where the student does not have to start repaying the loan. The repayments could also be based on the actual salary of the loan taker, ensuring that they pay a fair amount of their income (Lochner & Monge-Naranjo, 2016).

Hoyt (2020) confirms the importance of having a loan that allows an income-contingent repayment plan and an option of deferring payments for struggling borrowers. Although, it may be costly to validate the salary of borrowers, which makes the option of a 100% income-contingent plan for all students not always economically viable.

There should never be an excessive burden on the graduate since it will lead to higher default and high costs for the lending entity and low social value (Albrecht & Ziderman, 1991).

3. **Incentive problems must be recognized and properly addressed.**

An optimal student loan finds a way to align the interest of the borrower and the lender so that the student has incentives to study hard, find a job, and pay back their loans. A challenge for the lender is to identify potential incentive problems and moral hazards during the lifetime of the borrower and adequately address them (Lochner & Monge-Naranjo, 2016).

This may also mean the loan scheme should target the right group of students. Finding the right candidates with motivation to study and repay the loan could mean that the scheme creates the most impact and that there will be fewer issues with repayment (Albrecht & Ziderman, 1991).

3.5 Student loan types

Student loan programs, or the concept of financing tuition with borrowed money, have in some form been in existence for as long as universities have been providing education. Often, they started small-scale and philanthropically

financed. However, during the 1900s, the world has seen more and more federal student loan systems operating on a large scale. These are in place in most countries worldwide and especially prominent in high-income countries (Fuller, 2014).

Governmental student loans are in operation as a way for the country to both give access to higher education to the student and relieve national budgets by collecting school fees. There are considerable differences in how these student loan schemes are operated and what loan terms they provide. Still, they all have in common that they are helping the students temporarily put off the upfront tuition payments and collect payments later when the students, hopefully, have an income (Shen & Ziderman, 2008).

There are three main types of student loans currently in practice: fixed payments plan loans (called linear or annuity loans in this report), income-contingent loans (ICL), and income-share agreements (ISA).

Income-contingent repayment plans

An income-contingent repayment plan refers to when a borrower makes repayments on their loan based on a percentage of their income. This model is proven to reduce defaults because it has more favorable repayment terms for borrowers with a low income (Nikalexi & Yannelis, 2019).

Some countries' federal student loan programs require an income-contingent repayment plan, including Australia and the United Kingdom. The payment plan in these countries calculates the amortization amount based on the borrower's salary above 150% of the poverty income level in each country, called the repayment threshold. The point of the threshold is to give low-income earners payment deferments until they reach a certain income, providing economic safety in times of unemployment.

The percentage of salary over the threshold repaid varies between 2-9% for the UK and Australia. In the US, these types of repayment plans are steadily on the rise. In 2017, 55% of all graduate student loan debt was under some form of income-contingent plan. Additionally, many federal US student loans forgive the outstanding loan after a certain number of years if the plan has been followed, after around 20-25 years (Congress Budget Office, 2020).

Cai, Chapman, and Wang (2018), who researched and simulated the introduction of income-contingent student loans in China, argue that a repayment plan considers the loan takers marginal salary, that is, a salary above the poverty line will significantly improve the chances of repayment.

Chapman and Doris (2018), who did a similar simulation in Ireland, found comparable results.

Table 3.1: Example of ICL student loans around the world (Chapman & Doan, 2019).

	Brazil	*China*	*Ireland*	*Japan*	*USA*
Average loan size	USD 13,500	USD 4,700	USD 18,500	USD 34,000	USD 35,000
Interest rate	At the government cost of borrowing when earnings exceed the first repayment threshold, otherwise 0% real	2% real	2% real when earnings exceed repayment threshold	0.33% nominal	0-2.9% real
Surcharge	25%	no	no	15%	0-22%
Repayment rate	50% of current income tax rates, either marginal or gross	8% marginal	2-8% gross rising in increment of 1% for every €5,000 over €26,000 and up to 8%	5% gross if income is between ¥ 1.44-3 million; 9% gross if income exceeds ¥ 3 million	≤ 7%, depending on other parameters to maintain 0% subsidy rate
Repayment threshold	4 repayment thresholds that equal the thresholds of income tax, with the first one being BRL 22,848 (USD 6,200)	USD 3,900	No	First threshold: ¥ 1.44 million (USD 13,000) Second threshold: ¥ 3 million (USD 28,000)	USD 25,000
Forgiveness	At 65 years	At 55 years	None	None	After 25 years
Average subsidy [a]	12-26%	22.6%	26%	4%	0%

[a] Not counting default and administrative costs

However, having income-contingent loans is not a fail-proof system as it still relies on the graduates finding (above poverty) incomes. During the 1990s, the student loan program in Ghana ran into significant problems due to this fact. It is also worth noting that countries using income-contingent repayment plans often do

so by using existing governmental systems such as tax collection. This minimizes the administrative costs of collecting repayments and ensures that each loan beneficiary repays according to their actual (taxable) salary (Salmi, 2003).

Fixed repayment plans

The main argument against income-contingent repayment plans is that the low-income borrowers repay their loans for a more extended period, allowing them to accumulate more interest and extending total repayment time and amount. Under a fixed repayment, sometimes called a traditional mortgage-type loan, a fixed plan says what amount is to be repaid each month. The amount is calculated based on how many years the borrower has until the loan must be repaid in full. These plans do not consider if the borrower has a high or low income and suffers a greater risk of defaults and nonpayment, especially the first year after graduation when the expected salary is low. In return, fixed plans usually end with fewer years in debt and a lesser amount repaid. The cash flow becomes more predictable for the loaning organization in these repayment schemes (not considering cases of high default). Additionally, there may be less administration cost since you do not need to track income level (Congress Budget Office, 2020).

Income-share agreements

Income-share agreements (ISA) are a non-traditional way of financing education. It emerged during the 1970s USA but has not gained much traction until recent years, especially in the USA. Still, there are also organizations targeted towards Latin America and Sub-Saharan Africa.

In an ISA, the providing organization offers to pay for the tuition for a student in exchange for a percentage of their future income for a set number of years. ISA often includes mechanisms that ensure that the student does not need to pay anything until they reach a certain income, i.e., they do not need to pay any percentage of their income under the national poverty level. ISA relies on some students earning high salaries in their careers to support the organization's losses from students who do not earn much. Practically this means that the lending organization assumes the risk of human capital investment. Less successful students make no repayments and are bad investments, and successful students repay more than what they lent and prove to be good investments.

ISAs are meant to be a supplement to traditional student loans by offering access to education for those who, for some reason, cannot, or want to, take a conventional student loan (Peek, Mason & Soldner, 2016).

They may also be a more beneficial financing option if the beneficiary's income stays low., but for the ISA organization to stay financially stable, they must make

sure to enroll students who have the capacity to earn a high salary in their career, possibly by excluding people who are deemed to have tougher conditions in the labor market (Delisle, 2017).

Income share agreements are reliant on correct income information from its loan beneficiaries. ISA operations in countries where it is hard to leverage the tax system to access this information are exposed to moral hazard since they need to rely on the loan beneficiary to provide their correct income level.

3.6 Interest rates

The interest rate on a traditional loan reflects how risky the lender deems the contract to be and what costs the lender has and needs to cover.

The riskiness of the borrower can be determined from factors such as time horizon to pay the loan back, expected income, the size of the loan, collateral, or any other form of security such as a guarantee of the loan. The more risk the lender deems it takes by borrowing the money, the higher the interest rate on the loan will be to cover for potential defaults and nonpayment.

The lender's costs may include inflation or administrative costs, such as costs for handling the application and the recollection of the loan. The inflation affects the interest rate in the following relationship called the Fisher's effect (Cooray, 2002):

$$r = i - \pi \tag{3.1}$$

Where r is the real interest rate, i is the nominal interest rate and π is the expected or actual inflation.

The nominal interest rate is the rate stated in terms of the loan, but the real interest rate, which the lender can use to cover its costs, is determined by inflation. If the inflation is high, the nominal interest rate also needs to be high if the lender wants to keep a sufficient real interest rate.

Student loan schemes operated in currencies with high inflation should protect themselves by basing the nominal interest rate on inflation. Failure to do so may result in heavy losses or bankruptcy, which happened in the 1980s to the Argentinian government student loan scheme (Salmi, 2003).

The interest rates for governmental student loans are in some countries tied to the cost of lending for the government, for example, in Sweden (Salmi, 2003).

Surcharge instead of interest rate

Some student loan programs, for example, in Japan, choose not to apply any interest rates on the loan, but instead add a fixed percentage surcharge on the total amount lent. Contrary to compounding interest rates, a surcharge is a very transparent and understandable loan term. A surcharge may even out the debt burden across different income levels since a high earner will repay their loan faster than a low-income earner and therefore not accumulate as much interest on their loan. In practice, this means that the more successful graduates repay less than the unsuccessful with a real interest rate. A surcharge, however, will be the same for all borrowers and may even be more beneficial for low-income earners who repay their loans for a longer time since positive inflation will lower the real value of the outstanding debt.

The downside of a surcharge instead of an interest rate is that environments exposed to unpredictable inflation rates will have issues with calculating a fair surcharge on the loan, and different repayment times across the cohort will lead to higher discrepancies in subsidies (Barr, Chapman, Dearden & Dynarski, 2018).

3.7 Financial literacy

Financial literacy is the ability to make informed judgments and decisions regarding the use and management of money. It is necessary to have the financial literacy to avoid making mistakes when handling financial products and to make decisions in one's best interest (UNCDF, 2012).

Hung, Parker, and Yoong (2009) argue that financial literacy can be modeled as a combination of financial knowledge, both perceived and actual, plus financial skills, predicting financial behavior. You develop financial knowledge and skills through experiences and education, both formal and informal.

This is a causal relationship that Lusardi and Mitchell (2011) agree with, showing that a better financial literacy and awareness results in better planning for smooth consumption over a lifetime. Their study also concludes that women seem to have less financial literacy than men, and the older people generally have less understanding of financial products than younger people.

Generally, financial literacy affects the possibility of making informed decisions on financial products such as student loans and the possibility of planning for repayment.

3.8 Repayment and law compliance

Non-repayment and default consist of two problems: some cannot pay, and some evade payment. A good loan program will address these issues by having a fair repayment plan for each beneficiary and a mechanism to encourage payments (Albrecht & Ziderman, 1992).

Repayment burdens are discussed later in segment 3.9.1, the encouragement of payment will be discussed here.

Banks and authorities as collectors

Besides banks, and other institutions such as tax authorities, have infrastructure and routines to issue payments and collect repayments, they often have instruments to give incitements for correct repayments. These could include the issuing of credit or other financial services.

A study of the student loan programs in Venezuela shows that the bank has fewer issues with defaults than the public collection agencies, although exact numbers are not available (Albrecht & Ziderman, 1992).

Social norms to increase compliance

Several studies and experiments have shown that compliance with the law in cases such as paying taxes or tv-licenses is not only shaped by law enforcement, the risk of getting caught and punished, but also by social norms.

Social norms messages can help to make people comply with the law in cases such as paying due tax, according to a study by Hallsworth, List, Metcalfe, and Vlaev (2017). People who were sent social norm-reminders in the UK to pay their due taxes were more likely to comply than those who were sent standard public service messages, showing that moral costs can be an important mechanism for changing human behavior and a successful treatment to things such as outstanding liabilities.

Studies made by Elster (1989) and Wenzel (2002) propose that the actor internalizes social norms in the way the non-compliance with the norms comes with a moral cost, guilt.

Rivis and Sheeran (2003) discuss the importance of distinguishing between social norms, which are injunctive norms (opinion of others) and descriptive norms (behavior of others) because these are separate sources of motivation and should be treated differently. Another motivation for message receivers is self-

identification, meaning that mentioning the receiver's local area or country positively links to the result.

Hallsworth et al. (2017) experiments show that both descriptive and normative messages affect. For example, relatively 15% more payments were made by UK taxpayers late on their payments when receiving a message with a descriptive and local message. Including financial information and what public good will come out of compliance also increased the payment ratio.

However, Fellner and Sausgruber's (2003) experiment in Austria on potential TV-license evaders showed that morale had little to do with their positive results when sending messages. Rather, it was the reminder that proved statistically significant as a treatment, especially because the sender was an authority with the capability of legal enforcement.

Using well-formulated reminders to those of is due on their loan payments may show a positive effect on repayments. If there is a little threat of legal enforcement, using a combination of injunctive norms and descriptive norms together with financial and public good information may be effective.

Creating a culture of compliance

In a case study, Salmi (2003) found that a loan program that focuses on efficient information systems and personalized relations between the lending entity and the loan taker reduces the risk of default. In their study, the case organization performed individual interviews and in-depth explanations of what the loan meant to create understanding and responsibility.

Furthermore, insights from studying the microfinancing institute Grameen Bank tell us that it is more important to foster a habitual culture of repaying loans than leaning on guarantees of loans, such as a guardian or parent (Jain, 1995).

3.9 Risk assessment

The risk an organization takes by issuing a loan or student loan to an individual without collateral can be assessed both on the loan beneficiary's personal qualities and general characteristics of the market.

The risk the lender takes can be expressed in the risk of the loan beneficiary defaulting on the loan. A loan is generally considered to be in default if the beneficiary is 90 days or more past its due payments, and therefore the loan is unlikely to be repaid in full by the borrower. If a loan is in default, it can also be called a non-performing loan (NPL).

3.9.1 General economic factors affecting default rates

Beck, Jakubik, and Piloiu (2013) comment that except for personal reasons for defaulting on a loan, there is evidence for a negative correlation between growth GDP and NPLs. This relationship is due to growth in GDP usually results in higher income for individuals who, in turn, can manage their loans. Generally, growth and a positive outlook in the local financial markets result in fewer NPLs since a strong financial market translates into high spending, leading to stimulation of the economy and employment.

Moreover, the terms of the loan are deciding factors if a loan will become non-performing or not. High-interest rates have shown to be correlated to NPLs, but that does not necessarily mean that it is the interest rate that makes the default. Lenders often apply high-interest rates when the loan beneficiary is deemed to have a high risk of default, which may explain the correlation (Viswanadham & Nahid, 2015).

Repayment burden

The risk of defaulting on a traditional or student loan is correlated with how much income the individual repaying the loan needs to allocate for installments. Several studies have shown that when individuals allocate more than a certain percentage of their monthly income towards repaying loans, they will experience consumption hardship (Chapman & Lounkaew, 2014). Baum and Schwartz (2006) and Salmi (2003) put this percentage at 18%, while many others, such as Harrast (2004), report that anything over 8% will highly increase the risk of individuals reporting hardship.

3.9.2 Risk assessment on personal characteristics

Many studies have tried to connect personal characteristics, and qualities to the rate of default to better help institutions make risk assessments when giving student loans as well as helping them know where to focus their attention.

Age

Harrast (2004) and Herr and Burt (2005) have found being older to be a correlated factor to defaulting loans, either when starting to pay the loan or being enrolled in school. This may be explained by older people often having more financial obligations, making installments on loans more difficult. They are also financially independent of their parents, reducing their financial safety net.

Education

Podgursky, Ehlert, Monroe, and Watson (2000) found that if a loan beneficiary has a degree from a more selective institution, they are less likely to default. The Steiner and Teszler (2005) study estimated that students who completed their degree had a 2% risk of default while those who did not have a 14% risk. Herr and Burt (2005) agree and add that a higher obtained GPA of the students may also be correlated to lower default rates.

This may be due to better labor market outcomes for those individuals. This factor is also related to a study from Looney and Yannelis (2018), who found that individuals with high debt, and likely studied at a selective university, have a lower default rate than those with low to medium debt.

Looney and Yannelis (2018) agree that completing the degree, especially from a more selective and traditional institution, will make the loan beneficiary less likely to default.

Socioeconomic background

If students came from a higher socioeconomic background, they are less likely to default. This may be because they have a safety net from their parents' income (Herr & Burt, 2005).

Volkwein and Szelest (1995) also suggest that family structure plays an important role. Those who have children and/or are divorced or widowed will have a significantly higher risk of defaulting because that will put a higher financial burden on them.

Summary

The risk of issuing a loan or student loan to a person without collateral can be mitigated by considering a few market and personal characteristics before issuing the loan. It is important to consider:

- The labor market and GDP growth status
- The risk of the loan beneficiary experiencing difficulties in the labor market
- The loan beneficiary's socioeconomic background
- If the student is likely to graduate with a degree.

3.10 Hidden grants and defaults

Government student loans often have a built-in subsidy that occurs because the lender, usually the government, provides beneficial loan terms that systematically result in the loan not being expected to be repaid in full if you consider the cost of giving it. This is called a hidden grant.

Two terms are important, repayment ratio is how much of an individual loan is expected to be repaid, and recovery ratio is how much the lending organization is expected to receive back in payments of the total amount of loans given (Salmi, 2003).

Repayment ratio

One of the most important factors for the repayment ratio is the interest rates. Many student loans worldwide are interest-free during the grace period, which is often at least during the full-time of study. Furthermore, student loans that charge a sub-inflation nominal rate will be provided a grant in line with the devaluation of the currency. In the more normal case where a 0% real interest rate is charged, the interest rate on the loan will fail to cover costs and the risk associated with giving it, resulting in a grant. Even sub-market interest rates can be considered a grant for the student since the lending organization could have invested their money elsewhere for a greater kickback. The longer the repayment period, the more subsidies will be built in for the loans using sub-market interest rates (Shen & Ziderman, 2008).

Recovery ratio

The repayment ratio is a result of policymaking and decisions regarding the loan terms. The recovery ratio will also account for the default rates and cost of administration which can be a measure of the efficiency of the student loan scheme and not necessarily due to voluntary management. The cost of administration may include loan processing costs and loan collection costs. These costs may vary significantly depending on the organization and country where higher costs are implied in countries where it is hard to track and collect money from graduates (Shen & Ziderman, 2008).

Administrative costs

All loan programs have administrative costs related to either processing costs, maintenance costs, or collection costs. Where most costs lie depends on the operational environment and the focus of the loan scheme. For example, in

countries where it is difficult to track and bill students, often developing countries, collection costs are expensive. In loan programs that are highly selective and target a certain socio-economic group, the processing can add up to large costs (Albrecht & Ziderman, 1992).

To establish the actual cost of a loan program, it is important to include the cost of running it. Studies have shown that the most efficient loan programs cost around 0.5% of outstanding debt in administrative costs each year (Albrecht & Ziderman, 1992).

Interest rates

Setting the interest rate for a student loan is a balance between providing enough cash flow for the lending entity to cover costs and having reasonable debt burdens on the beneficiaries. A low interest rate will risk leading to too high subsidies for the loan program to be sustainable, but too high interest rates risk generating unmanageable debt burdens (Albrecht & Ziderman, 1992).

Any interest rate which is under the cost of borrowing will produce a subsidy. The cost of borrowing can be interpreted as either the cost of acquiring the money up for lending, or the alternative cost, depending on the context. The most basic form of cost of borrowing is the inflation rate (Barr et al., 2018).

Setting a high interest rate will, in some cases, lead to a higher debt disbursement on low earners. They are more likely to repay the loan for a longer amount of time, and therefore their debt will be exposed longer to interest (Barr et al., 2018).

Comparison between countries

Here is a summary of the repayment and recovery ratio of a selection of countries worldwide, highlighting how much of the loan is subject to a built-in subsidy and how much repayment is lost due to default rates and administrative costs. Note that much of these subsidies are due to the interest rate being sub-market level (Shen & Ziderman, 2008).

Table 3.2: Repayment and recovery ratios, selected countries.

	Repayment ratio	*Recovery ratio 1* [a]	*Recovery ratio 2* [b]
Russia	11.73%	10.56%	
India	80.23%	60.17%	
Malaysia	56.67%	51.33%	28.68%
Philippines	66.01%	1.32%	-22.05%
Thailand	30.08%	28.21%	
Vietnam	80.11%	73.68%	
Ghana	39.13%	10.96%	
Kenya	27.93%	5.59%	
Canada	99.04%	73.78%	
Jamaica	47.55%	34.23%	19.17%

[a] Repayment incorporating default costs

[b] Repayment incorporating default and administrative costs

In some cases, the main cost for the lending organization may not be the issue of default but the built-in subsidies, highlighting the importance of having a cost-conscious loan policy in place not only considering the risk of default but the implied subsidies from the loan terms, which both Shen and Ziderman (2008) and Salmi (2003) have found in their research.

Although this is mostly true, there have been some significant examples where the high default rates have been the death blow for the loan program, such as in Brazil, Venezuela, and Kenya during the 1980s, which suffered around 90% default rates (Bollag, 2001).

3.11 Loan modelling

Setting up the models

The initial parameters are the same for all models. The starting variables are,

- *years of study*, which is the number of years the education takes to complete,
- *the grace period*, which are years after graduation loan beneficiaries do not need to repay,
- *the tuition fee*, which is the yearly school fee the students,
- *the meals & accommodation allowance*, which also is counted towards the students total loaning amount.

The model assumes that the students start their education at the age of 20 years, finish their education at 23, and are theoretically able to repay until their age of retirement at 60 years old.

Income-contingent loan model

The income-contingent loan (ICL) model uses the same modelling as Britton, van der Evre and Higgins (2019), examining the impact of implementing an ICL in different settings.

The paper examines the cost of the lending entity for an ICL. The cost is determined by the amount disbursed and the money successfully recovered. To determine the loan's total cost, all the disbursements and repayments are discounted to the net present value (NPV).

Table 3.3: Definitions of variables.

Variable	*Definition*	*Variable*	*Definition*
i	Individual	P	Poverty line
s	Time	r	Interest rate
$D_{i,s}$	Debt at time **s** for individual **i**	$\bar{R}_s$	All repayment at time **s**
Y_{isj}	Income at time **s** for individual **i**	$NPVL$	Net present value for all loans
$R_{i,s}$	Repayment at time **s** for individual **i**	$NPVR$	Net present value for all repayments
τ	Repayment percent	LC	Lender cost for the lending entity
ω	Repayment threshold multiplier	RAB	Resource Budgeting and Accounting charge, which is how much of the loan that is subsidized by the lending entity

The ICL-model of Britton et al. (2019) works by starting with the debt $D_{i,s}$ and the income $Y_{i,s}$ where i is the individual and s denotes the age of the individual. The repayment $R_{i,s}$ and debt $D_{i,s}$ is then defined as:

$$R_{i,s} = min(max(\tau(Y_{i,s} - \omega),0), D_{i,s}) \tag{3.2}$$

$$D_{i,s} = (1 + r)(D_{i,s-1} - R_{i,s}) \tag{3.3}$$

$$\omega = 1.5 \cdot P \tag{3.4}$$

Where τ is the rate of repayment, ω is a constant with a value of 1.5, *P* is the national poverty line, and *r* is the interest rate. All simulations, as previously mentioned, have the same initial setup with a *grace period*, a set amount of *years of study*, and a *tuition fee*. Furthermore, to determine the subsidy of the lender, the cost is defined by:

$$Net\ present\ value\ loans\ (NPVL)\ = \sum_{s=1}^{T} (\frac{1}{1+d})^{s} L_s \tag{3.5}$$

$$Net\ present\ value\ repayments\ (NPVR)\ = \sum_{s=1}^{T} (\frac{1}{1+d})^{s}\ \overline{R_s} \tag{3.6}$$

$$Lender\ cost\ (LC)\ =\ NPVL - NPVR \tag{3.7}$$

$$\overline{R_s} = \sum\nolimits_{i} R_{i,s} \tag{3.8}$$

Where L_s denotes all the loans disbursed at year *s*, $\bar{R}_s$ are all the repayments at year *s*, *d* is the discount rate, and *T* is the last year of the loan. The loans are discounted to time 0, and the reason for the discount rate is that the lending entity will pay less interest on the debt if it is collected earlier. Another way to examine the cost of the lending entity is to look at the percentage of how much of the disbursed amount that is returned and then determine of much is subsidized which is called Resource Budgeting and Accounting charge (RAB) and is determined by:

$$RAB\ = 1 - \frac{NPVR}{NPVL} \tag{3.9}$$

Income-share agreement

The income-share agreement (ISA) model is constructed similarly to modeling an ICL using the model of Britton et al. (2019). However, the big difference comes from the fact that a model is used to determine the loan terms for actual loan beneficiaries. According to Blankers (2021), CEO of ISA organization CHANCEN, the model can either be connected to a specific study or a specific university where several important predictions must be made. These are the starting income distribution, the income growth, default rate, and administrative costs. The model also uses the same threshold as the ICL seen in equations 3.4. The threshold ensures that the loan burden does not become too large for a beneficiary to handle.

These predictions are then used together with an assumed future inflation rate to determine how much a cohort is assumed to earn over their lifetime. The model

starts by assuming the borrowed money from the cohort where they have to adjust the amount of capital they want to be paid back for inflation, discount rate, default rates, administrative costs, and potentially a capital gain for the lender. The lender then knows how much capital they wish to get repaid from the loan and then simulates the future income of the loan beneficiaries discounted to present value. This is then used to determine the best terms for the students with the least amount of risk for the lender by varying the loan lifetime and loan repayment percent with some constraints. Blankers (2021) states that their constraints are that repayment percent cannot go above 20%, and the lifetime of the loan cannot go above ten years.

It is important to note that a loan beneficiary belonging to a cohort will get the same terms as the rest of the cohort as long as they borrow the same amount. However, the terms for the loan will change inside a cohort if a beneficiary decides to borrow a larger amount.

Table 3.4: Definitions of variables for ISA modelling.

	Definition
RPM	Repayment percent matrix, (1X2) defined in equation X
LCM	Lender cost matrix, (1X2) matrix defined in equation X

The ISA loan works similarly to an ICL, but instead of being able to repay until the age of retirement, a set time limit is used. Every beneficiary repays at a set repayment rate until the predetermined time is up. The model calculates the lender cost (LC) in the same way as the ICL but then tries to minimize the absolute value of the LC by changing the repayment percentage (RP) of each installment. What this means practicality is that the model will iterate over different possible loan repayment percent until it finds the one with the LC closest to zero. This would lead to the best repayment percent for the students while incurring as low of a loss or gain as possible for the lending entity.

$$LC = NPVL - NPVR \times (1 - Default) - NPV\ admin\ cost \tag{3.10}$$

$$RPM = (\tau + \Delta\tau \quad \tau - \Delta\tau) \tag{3.11}$$

Repayment matrix (RPM) is a 1x2 matrix and $\Delta\tau$ is the change in τ. The LC is then calculated for the values in RPM and creates the 1X2 matrix LCM and minimized with:

$$LCM = (LC\ for\ \tau + \Delta\tau \quad LC\ for\ \tau - \Delta\tau) \tag{3.12}$$

$$min(LCM) = min((|LCM_{RPM}|) \quad (3.13)$$

This will result in a lender cost-matrix with a value close to zero. The process is iterated until the LC stays the same and has reached its minimum. The $\Delta\tau$ is then changed to a lower value to further increase the precision of the τ.

Linear loan model

Linear amortization is defined as a time limited repaying the same amortization amount at each payment as well as paying the interest on current debt (Hofstrand, 2013).

Annuity loan model

According to Williamson (n. d.), an annuity loan is a loan where each repayment is of the same amount and each repayment (annuity) is defined by the formula:

$$annuity = L_0 \times \frac{r}{1-(1+r)^{-n}} \quad (3.14)$$

Where L_0 is the initial loan amount, r is the interest rate, and n is the number of payments during the lifetime of the loan.

Income distribution

The income distribution was created from the data collected in the questionnaire where the students were asked to give an estimate of their starting wage at their first job after graduation.

The data was assumed to be lognormally distributed which income data tend to be (Olsson, 2005). Using MATLAB, the distribution was fitted to the data. This resulted in a mean μ and standard deviation σ which were used to create the lognormal distribution. To determine the validity of the distribution, an Andersson-Darling test was used to get a p value for the fit of the data on the created distribution.

Default rate

The default is modeled as seen in equation 3.14 where a percentage of the net present value of repayments (NPVR) is lost due to the default.

$$Lender\ cost = NPVL - NPVR \times (1 - Default) \quad (3.15)$$

Further definitions of lender cost, net present value loan (NPVL). and net present value repayment (NPVR) can be seen in this section 3.11 under Income Contingent Loan Model**.**

Repayment burden

The repayment burden is defined in the same way as Chapman and Liu does it in their study from 2013:

$$Repayment\ burden\ = \frac{R_{t,s}}{I_{t,s}} \tag{3.16}$$

where $R_{t,s}$ is the repayment and $I_{t,s}$ is the income at time *t* for loan beneficiary *s*.

Identifying the confidence interval for the mean of a lognormal distribution

According to Olsson (2005), the value of the original variable is denoted by *X* with the expected value $E(X) = \theta$ and a variance of $\mathrm{Var}(X) = \delta^2$. The log-transformation is denoted by $Y=log(X)$ with the expected value of $E(Y) = \mu$ and a variance of $Var(Y) = \sigma$. The sample mean of *Y* is defined as $\underline{Y}$with a sample variance of S^2. θ *and* the lower one-sided confidence interval for log(θ) is defined in equation 3.16 and 3.17*:*

$$\theta\ =\ e^{(\mu+\frac{\sigma^2}{2})} \tag{3.17}$$

$$\bar{Y} + \frac{S^2}{2} - z\sqrt{\frac{S^2}{n} + \frac{S^4}{2(n-1)}} \tag{3.18}$$

The lower threshold for θ is calculated as $e^{log(\theta)}$.

4 Description of the case organizations environment

This chapter introduces the context which the case organization operates. The state of education and how it is financed is researched as well as a description of Higher Education Students' Loan Board which is the main student loan actor in Tanzania.

4.1 Introduction to Tanzania

Tanzania is situated in Eastern Africa, just south of the equator. The country was a British colony up until 1961 when it broke free, becoming The United Republic of Tanzania in 1964 by merging the mainland of Tanganyika and the archipelago of Zanzibar (Encyclopædia Britannica, 2021). Tanzania was a one-party state from its independence until 1995 when its first multi-party election became a democracy (Nationalencyklopedin, 2021). Tanzania is currently working with their Vision 2025, taking Tanzania from a lower-income country to a middle-income and lowering poverty (The United Republic of Tanzania, President's office, Planning Commission, 2011).

Tanzania currently has a population of 62 million, with 63% of the population being younger than 25 years (CIA, 2021). The highest population density can be found in the northern half of the country and along the coast, with 35% of the population living in urban areas (ibid.). The country has a religious distribution of 60% Christianity, around 30% Muslim with a very high percentage on Zanzibar and other islands, and about 10% practicing indigenous African religions (Nationalencyklopedin, 2021).

Thanks to vast natural resources, tourism and its new economic and social development vision aptly named Vision 2025, launched in 1999 (Mwihava, Samaje, Mshingwe & Mkobya, n. d.). Tanzania has had an increase of 6-7% GDP growth per year from 2009-2017. The economy is primarily based on agriculture, which employs about 65% of the population. The government owns all land in Tanzania, and citizens can only lease it (CIA, 2021). This creates difficulties for Tanzanians to come up with collateral for loans (Cronqvist, 2021). Tanzania has,

during the last decade, had high income growth. Between 2018 and 2019, the country passed the threshold for being a low-middle income country by having a gross national income per capita of US$1080 (World Bank, 2021).

Poverty and income levels

Government actions have been able to reduce poverty from 34.4% to 26.4% between 2007 and 2018. Even though the percentage of people living in poverty has been reduced, the total amount has increased due to the population growth. In 2007, 13 million lived below the national poverty line of 49,320TZN per month (~ USD20 mars 2021) compared with 14 million people in 2018. The international poverty line, set by the United Nations, is $1.90 per person per day, and 26 million people, 49% of the population in Tanzania, lived below this line in 2018. Even though Tanzania has had a significant increase in GDP, poverty reduction has been relatively low compared to other developing countries. This is mainly due to the GDP growth coming from a sector that accounts for 6% of the total population and mostly employs highly educated Tanzanians (World Bank Group, 2020).

4.2 Education in Tanzania

Tanzanian education is divided into four steps, pre-primary, primary, secondary, and university. Since 2015, pre-primary, primary, and lower-secondary education has been fee-free and compulsory for all citizens (Godda, 2018).

However, higher-secondary, university, and vocational schools still have a tuition fee, and this thesis will discuss the latter two further in the next chapter.

A Tanzanian student will have 11 years of compulsory primary education (Government of the United Republic of Tanzania & UNICEF, 2018). Pre-primary education starts when the child is between 4-6 years old and has one compulsory and free year (ibid.). When a child reaches the age of 7, primary school begins and continues for six years, all of which are free (ibid.). The lower-secondary school takes four years and ends in the CSEE, a final exam, which has to be passed to continue to upper-secondary school (The United Republic of Tanzania, Ministry of Education, Science and Technology, 2018). The upper-secondary school takes two years to complete and often requires students to attend boarding schools since there are very few upper-secondary schools in the country (ibid.).

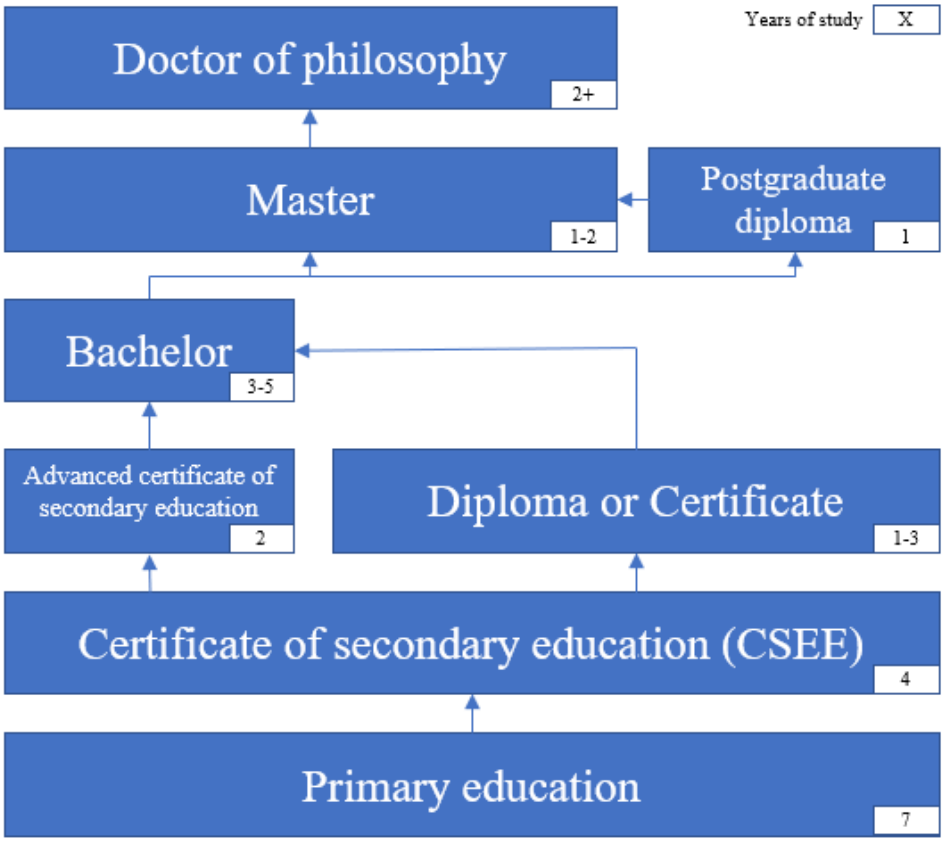

Figure 4.1: Tanzania's education system, authors' illustration (Nuffic, 2015; Tanzanian Commission for Universities, 2020).

The participation at the different levels varies, but Tanzania has seen a large increase since education became fee-free in 2015. The participation for pre-primary education is 33.5% net enrollment rate (NER) (UNESCO, 2021). However, there are still wide disparities in the country, and children from low-income families are three times less likely to attend school than middle- and high-income families (UNESCO, 2021). The primary school had 97% NER in 2007 but declined to 86% in 2016, according to UNICEF (2017). However, the trajectory is shifting. Primary school is seeing an upward trend since 2016, and in 2019 the NER was 86.5% (UNESCO, 2021). The absolute number of students did stagnate during the decline but has seen a steady increase from 8.6 million in 2016 to 10.6 million in 2019 (The World Bank & UNESCO, 2020). In 2019 lower-secondary education had a NER of 33.8% (The United Republic of Tanzania, Ministry of Education, Science and Technology, 2019). However, upper-secondary education had a NER of about 3% and GER of 6.65%, meaning that a lot of students do not

make it to upper secondary school, which is the most common way of transitioning to university (The United Republic of Tanzania, Ministry of Education, Science and Technology, 2018).

The free school system is relatively new, resulting in the older generation having a lower literacy rate, 77.9% in 2015, than other SSA countries (UNESCO, 2021).

According to the Government of the United Republic of Tanzania & UNICEF (2018), Tanzania spends 15% of its total budget on the education sector, making it the second-largest sector by spending. Global Partnerships for Education recommends developing countries to target spending 20% of their budget on education, something Tanzania fails to meet. Tanzania also falls short compared to other countries with 3.6% of its GDP spent on education, while the average for other developing countries is 4.2%.

2019/2020, 190,000 students enrolled in higher education (The Tanzania Commission for Universities, 2020). 145,000, or around 75% of them, have some form of support from the Higher Education Students' Loan Board (Badru, 2020).

A rural-urban pattern where young people migrate to towns resulting in schools in rural areas becoming underpopulated while those in cities become overcrowded (The United Republic of Tanzania, Ministry of Education, Science and Technology, 2018).

4.2.1 **Higher education in Tanzania**

Higher education in Tanzania education in Tanzania can be divided into university or certificate and diploma. Tanzania has recently started to shift focus towards higher education in the country after years of enabling access for everyone to primary and secondary education. In 2017/18, the government spent 47% of its education budget on Higher Education Students' Loans which is more than what was spent on free secondary and primary education combined (Government of the United Republic of Tanzania & UNICEF, 2018).

For a developing economy like Tanzania, quality education is indispensable to produce well-trained human resources. It is necessary to meet national development needs consistent with the National Development Vision (NDV) 2025 and labor market demands.

The distribution of students enrolled by degree can be seen in the figure below, with bachelor's degrees constituting 77.4% while the diplomas and certificates stand for about 15.1% (The Tanzania Commission for Universities, 2019a).

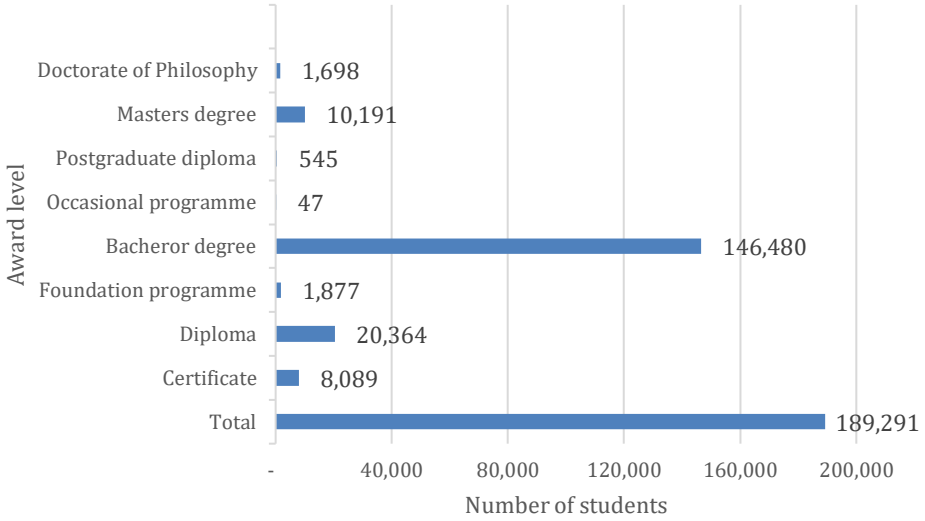

Figure 4.2: Enrollment of Tanzanian students for different award levels (The Tanzania Commission for Universities, 2020).

University

The first higher education system was introduced in Tanzania in 1961, and in 1963 the University of East Africa was established to provide education for Kenya, Uganda, and Tanzania with colleges in each country. The University was later split up, and Tanzania's college became the University of Dar es-Salaam. In 1990 socio-political reforms enabled the private sector to take part in higher education, and in 1996, the first private universities were established. Paired with an increase in public awareness about the benefits of higher education led to a 15-fold rise in participation over the next two decades. The national enrollment was 0.27% in 1997 and increased to 4% in 2016 (The Tanzania Commission for Universities, 2019b).

There has been a steady increase in admissions in recent years, with only a slight decline between 2016/17 and 2017/18. This drop was due to the admission ban issued by the Tanzania Commission of Higher education (TCU), which forbade nineteen institutions from admitting new students (The Tanzania Commission for Universities, 2019a). Furthermore, enrollment saw a significant drop of about 20% of all students between 2016/17 and 2017/18. Since then, the trend has started to go up but has not yet recovered (The Tanzania Commission for Universities, 2020).

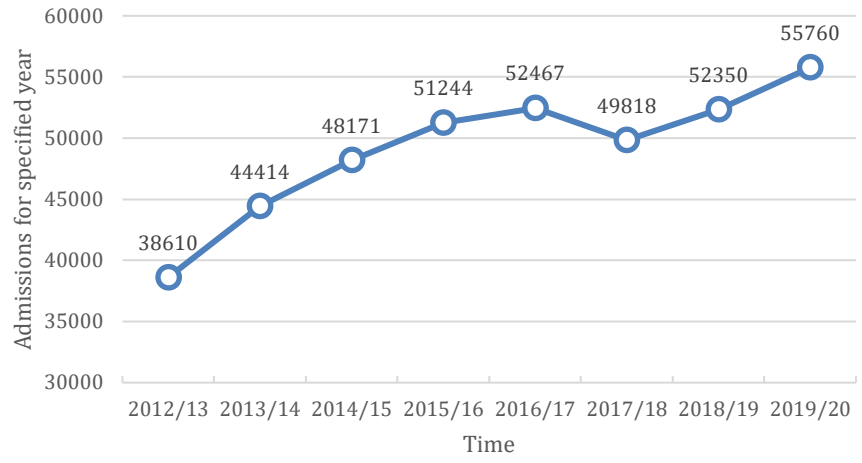

Figure 4.3: Students admitted to Tanzanian universities for each admission period (The Tanzania Commission for Universities, 2020).

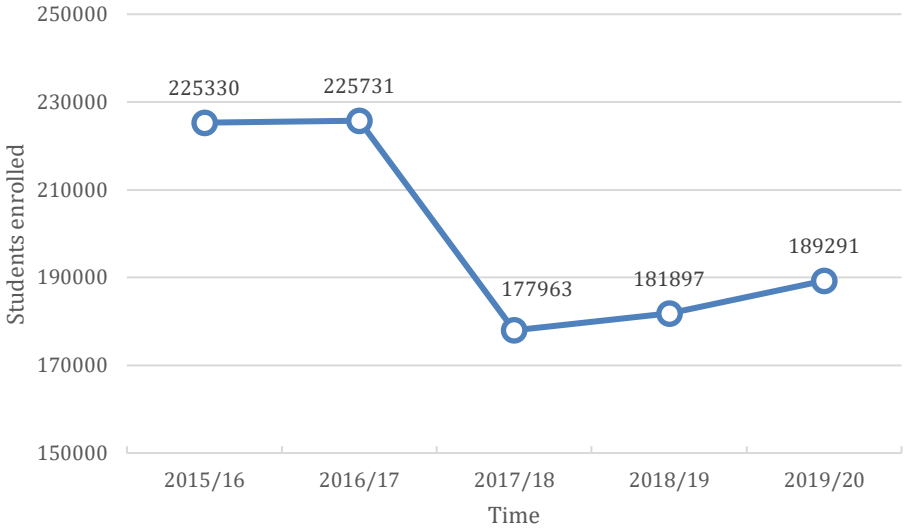

Figure 4.4: Total enrollment at Tanzanian universities over time (The Tanzania Commission for Universities, 2020).

A student can apply for university after completing either upper-secondary school or has earned an ordinary diploma or a full technical certificate (Tanzania Commission for Universities, 2020). Since the enrollment for secondary school is at 3%, not many people can apply for university (UNICEF, 2017).

Most bachelor's degrees in Tanzania are three years except for a few programs (e.g., engineering and law), which take four years (University of Dar es Salaam, 2021a). A few undergraduate degrees take five years to complete, such as medicine (University of Dar es Salaam, 2021b). Master's degrees are usually two years (University of Dar es Salaam, 2021a).

Field of study enrollment

As can be seen from the graph below, the most studied field is education with 28% of the total enrollment. The science, technology, engineering, and mathematics (STEM) fields make up about 22% of the total enrollment.

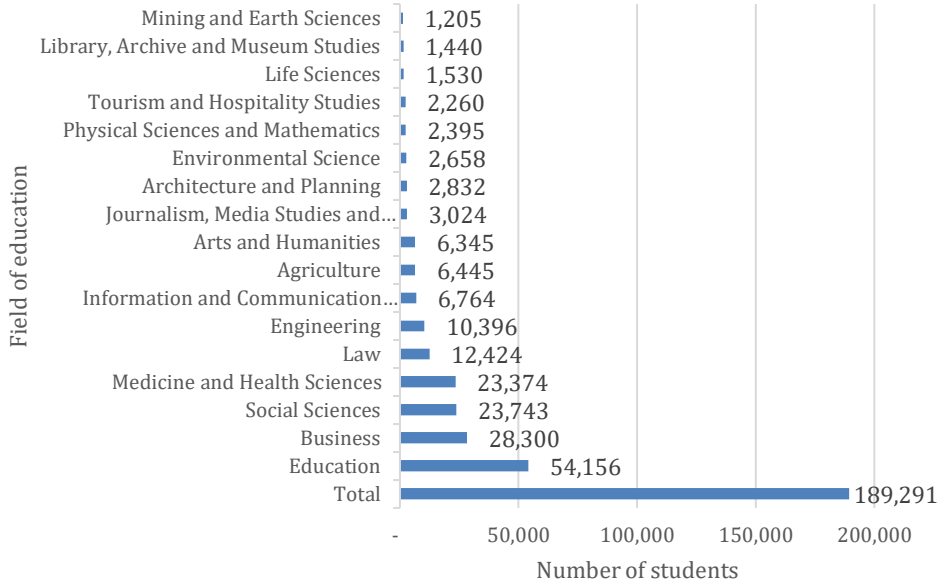

Figure 4.5: Enrollment for different fields of education, 2019 (The Tanzania Commission for Universities, 2020).

4.3 Financing higher education in Tanzania

In 1992 Tanzania reintroduced a cost-sharing program for higher education. The government had, before this, subsidized the entirety of the costs. The reason for the reintroduction of the cost-sharing was to increase access and put more of the cost burden on the beneficiaries of higher education. In 2005 the government

required even more payments, and students and parents had to pay for the entire tuition fee and other necessities such as meals, accommodation, travel, and application fees. These high costs made it relatively unaffordable, and new ways to support the beneficiaries had to be introduced (HESLB Strategic Plan 2017/2018, n.d.).

The primary support from the Tanzanian government comes in the form of a student loan from the Higher Education Students' Loans Board (HESLB) which is estimated to be able to support about 145,000 students during 2020/2021 (Badru, 2020). There are currently 189,210 students in Tanzania (The Tanzania Commission for Universities, 2020).

4.3.1 **Higher education students' loans board**

Higher education students' loans board (HESLB) is a Tanzanian governmental institution started in 2004/2005, 10 years after Tanzania introduced student loans to cover accommodation, meal expenses, and tuition fees. It was established to

- Help needy Tanzanian students who could not afford to support themselves when pursuing higher education, and
- Recover loans issued since 1994.

Since HESLB's establishment, it has encountered numerous problems in data and administration, resulting in HESLB having issues with granting loans to eligible students, paying out loans on time, and collecting due loans from graduates (National Audit Office, 2018).

The student loan from HESLB is designed to be given to Tanzanian students who want to pursue an education in University. The loan is prioritized to students based on the following table.

Table 4.1: Eligibility criteria Higher Education Students' Loans Board.

	Eligibility factors
General	- Must be Tanzanian - Must pass exams continuously - Must not have other funding
Neediness	- Disability - Poor - Orphan - Marginalized community
Education	Priority 1 - Science teacher, health sciences, engineering Priority 2 - Basic sciences (e.g. math, physics), and architectural sciences Priority 3 - Other (e.g. social sciences, business, law, media)

The application process is entirely online via their website. The neediness evaluation of a student is determined by an algorithm using the data the student provided in the application form (HESLB Guidelines and criteria for issuance of students' loans and grants for the 2020/2021 academic year, 2020).

If granted at 100%, the loan will cover all expenses for the student, including tuition fee, housing, food, and medical expenses. The tuition fee is covered 100% for public universities, but those who attend a private university may find that their tuition fee surpasses the amount you receive from a 100% HESLB loan (HESLB Guidelines and criteria for issuance of students' loans and grants for the 2020/2021 academic year, 2020).

You may, however, receive less than 100% of the loan or only a loan for either tuition fee or meals and accommodation. What percentage you receive is determined by the HESLB order of prioritization (HESLB Guidelines and criteria for issuance of students' loans and grants for the 2020/2021 academic year, 2020).

Loan terms and repayment

When graduating, loan takers have 24 months to start repaying their loans. The amortization of the loan is 15% of gross salary each month and directly taken from their salary through their employer. The employer of the loan taker has to make sure that the payments are made, or else they may suffer legal charges. Furthermore, the loan accumulates a 6% interest rate of the outstanding amount each year to allow for the financial stability of HESLB. Every loan is also subject to a once imposed 1% administration fee. Failure to make payments for a year results in a 10% penalty fee of the due loan amount (HESLB Guidelines and criteria for issuance of students' loans and grants for the 2020/2021 academic year, 2020).

If the loan taker defaults on their loan, their guardian is responsible for the loan, and HESLB may take legal actions to recover the outstanding amount. However, few guardians to defaulters are ever contacted, and no amount has been collected from them as of 2017 (National Audit Office, 2018).

Issues with tracking and collecting repayment of due loans have resulted in a 48% loan recovery rate for HESLB as of 2017. This has led HESLB to extraordinary efforts such as publishing names of loan beneficiaries not repaying the loan to shame them into starting to pay their due amounts, which has worked to some extent. However, their largest increase in repayments comes from the 10% penalty fee (National Audit Office, 2018).

Administration costs

HESLB has around 4,000,000,000,000TZH (USD 1,724,881,400) in receivables from student loans on a total of 120,000 student loans (both repaid in full and under repayment). Their administrative costs for 2018 were around 13,000,000,000TZH (USD 5,605,900), or 0.4% of the outstanding loan amount each year (HESLB Annual Report 2017/18, 2019).

This is a reasonable percentage compared to other student loan programs (Albrecht & Ziderman, 1992).

Documented challenges

Mapunda (2017) has studied the challenges facing HESLB regarding loan recovery and determined that many main themes are causing the issues.

First of all, the loan beneficiaries are not happy with the changing terms of the contract. Loan takers went from paying 8% of their salary to 15% of their salary to HESLB when the terms were changed in 2016. The students feel that too much is deducted from their salary, especially when they have other loans.

Another challenge is related to data-keeping. Loan beneficiaries and HR personnel witness that HESLB lacks sufficient recording of who needs to pay what. Some graduates who repaid their loans are listed on the default list, and incorrect billing amounts occur. The lack of proper record keeping and the absence of national ID cards in Tanzania makes it difficult to trace and bill correctly (Mapunda, 2017).

Under the school year 2020/2021, 54,000 first-year students were granted a loan from HESLB, making the total number of students receiving loan payments 145,000 during the same year (Badru, 2020). Of the current higher education

population, around 75% receive some support from HESLB. In 2016, a total of 371,000 students received or have at some point received a loan from HESLB. About 240 000 of those should have started repaying their loans, but only 94 000 have done so (The Citizen, 2016). In 2018, HESLB stated that they have only collected around 50% of the due repayment amounts, but they improve each year (HESLB Annual Report 2017/18, 2019).

HESLB in the future

HESLB is held back by its inefficiency in collecting loans, making it hard for them to expand without serious financial strains on the government. Although, the organization has seen a big improvement in collecting loans in recent years and is likely to continue. The upcoming introduction of national ID cards will make it easier to identify loan beneficiaries, and improvements in repayment mechanisms will likely sustain the increased repayment rate.

Moreover, HESLB will expand its services to those who study targeted diploma programs, such as teacher education, by increased funding and repayments. HESLBs goal for 2021/2022 is to supply 56% of the newly admitted higher education students with a loan (HESLB Strategic Plan 2017/2018, n.d.).

4.4 Default rates in Tanzania

NPL rates in Tanzania have been ranging between 8-12% (The Global Economy, 2021d) since 2015. For reference, Sweden has an NPL of 0.5-1.25% (The Global Economy, 2021e).

Balvanz et al. (2019), who conducted a study of microfinancing made in Tanzania to help young men establish businesses, observed that 50% of the loans were repaid in full. However, a 50% default rate is high compared to other microfinancing interventions in other countries. A 10% default rate is average for well-established microfinancing systems.

The same study found a correlation between low repayment and that the loan beneficiaries had an inadequate understanding of the repayment terms for the loan (Balvanz et al., 2019).

Balvanz et al. (2019) also found several characteristics positively correlated to repaying the loan. The participants who showed motivation and a plan to repay the loan had a higher chance of doing so. If they were more educated, they were also more likely to repay the loan. The study also found that groups where a formal or informal leader repaid the loan had a lower overall rate of NPLs, highlighting the meaning of role models for behavior.

HESLB has had low success in collecting repayments. In 2018 they stated that they had collected around 50% of all due payments (HESLB Annual Report 2017/18, 2019). While the student loan repayment trend is positive in Tanzania, they have a long way to go before they can run a sustainable loan scheme (HESLB Strategic Plan 2017/2018, n.d.).

4.4.1 **Risk assessment**

Nyahende (2013) analyzed the defaults and NPLs for student loans in Tanzania. The study found a correlation between personal characteristics and default. Being male, having a low GPA, being older, and having a poor attitude towards repaying loans were correlated to higher default rates.

HESLB has found connections between the loan beneficiaries who are more likely to default. These include failure to complete studies, not understanding the loan agreement, and having a lower income (HESLB Strategic Plan 2017/2018, n.d.).

4.5 Financial literacy in Tanzania

Lotto (2020) examines the financial literacy levels in Tanzania. The study remarks that there are considerable financial understanding gaps in the population resulting in risks of making poor financial decisions and low usage of financial products.

However, the whole Tanzanian population cannot be considered a homogenous group in this matter. For example, higher educated and higher income households exhibit higher levels of financial literacy, as do the younger generations (Lotto, 2020).

There is a low prevalence of financial services such as bank accounts and debit cards. In 2015, only 26% of the Tanzanian adults had a bank account (The Global Economy, 2021a), and in 2017 The Global economy estimated that 13% had a debit card (The Global Economy, 2021b). However, these percentages are on the rise and are likely to increase. The average estimated real interest rates on loans taken in Tanzania are very high, with an average of well over 10% in 2017-2019 (The Global Economy, 2021c).

Table 4.2: Overview of financial services participation in Tanzania.

	Quantity
Bank account	26%
Credit card	13%
Real interest rates	Average of > 10% between 2017-2019

5 Results

This chapter presents the qualitative and quantitative findings collected through questionnaires, interviews, and data analysis.

5.1 Qualitative results

The interviews and the questionnaire gave insights into how the student felt about the current higher education financing situation in Tanzania today. Overall, there were many opinions about the HESLB student loan since they are the only viable option for a lot of students. There were primarily negative feelings regarding the loan terms of the HESLB loan. The study also found that many students have issues with financial terms such as interest rate and inflation which may contribute to the pessimistic perception of the loan.

Furthermore, there does not seem to be any other generally available sources of income for students other than HESLB. For those who did not have financial support from their families, it was common to sacrifice money for living expenses to pay for tuition fees.

Most students felt optimistic about another student loan, saying that it would help those who cannot support themselves on the HESLB loan. Furthermore, it could be beneficial to have an organization such as Help to Help as a loan giver since they can provide other important support, such as labor market skills.

5.1.1 **Opinions about Higher Education Students' Loans Board**

Loan terms and repayment

Generally, the interviewed students have a negative view of the HESLB loan terms. The interviews and the answers on the questionnaire highlighted that students feel that the repayment system of the HESLB loan is unfeasible due to its high required installments and interest rate.

Table 5.1: Higher Education Students' Loans Board student loan terms.

	Comment
Repayment rate	15% of gross income
Interest rate	6% nominal
Admin fee	1% one-time fee of total amount
Threshold	None
Grace period	2 years after graduation
Penalty	10% one-time fee of total amount

Almost all interviewees made one or more comments about the required installments of 15%. The consensus was that this was too steep for their expected salaries, especially at the beginning of the career.

"No, no, no it is not a good system. Nobody likes this system. When they are taking 15% they are taking us to the grave, how am I going to survive? Nobody is fine with this. It is not a good system at all." - P2

Several interviewees also commented that there are many other expenses, formally or informally, required of them when they start earning a salary, such as taxes up to 30% of their income and financially taking care of their close and extended families. This makes the 15% installments challenging to meet.

"When repaying 15% it is hard to support family and siblings, but there are no other options to finance your education." - P8

Moreover, the interest fee of 6% imparted feelings that the loan beneficiaries were being used in a business model interested in making money for the government and not designed to be fair to the student. Additionally, the 10% penalty fee on late installments made some students feel like the loan had no chance of being fully repaid. It would just keep growing indefinitely without considering their financial situation.

"This is confusing because they say the mission is to help the poor, but they are running it like a business. I do not understand why 6% is like a normal loan that you can get from a bank, not so different. Why do they put an interest rate on the loan if they want to help us?" - P7

"It is too high. It doesn't matter what you do: if you are employed, unemployed etc. After the grace period of 2 years, you will have a penalty plus interest fee and that is really hard for people with no jobs or little salary. It is okay for those with high salaries or businesses that get you a lot." - P2

Advertising and application

HESLB seems to be very good at advertising their loan, both through media and by coming to secondary schools to tell potential university students about it. All of the interviewees supported by the student loan secured it from their first year at university and most often knew about the loan since secondary school.

"I have heard about HESLB from a number of people. Also, when you finish secondary school everyone talks about it because it is your chance to finance your education." - P7

However, many of those spoken to found the application process complicated:

- Because it was an online application, and many students lacked computer skills and access to computers. This resulted in many having to go out of their village to a nearby town and pay someone to help them make the application.
- Some felt that the details the application required, such as a birth certificate, were hard to procure.
- The application itself costs money which many objected against because it made them feel like HESLB made money from them.

"Most people at that time do not know how to use computers so telling them how to apply online is difficult." - P6

Selection process and transparency

If you are a beneficiary of the HESLB loan, the total amount you are eligible to loan ranges from 10-100% of your total expenses: tuition fees plus meals and accommodation. Some students commented that the reasoning behind the percentage different applicants were eligible to loan was unfair or unclear.

Several also expressed that they, or their friends, were assessed unfairly because they went to a private secondary school. They believe HESLB automatically gave them a lower loan percentage because of their school background, even though they might have gone to a very cheap private school or that their financial situation

was entirely different at that time. Overall, the selection process appeared very unnuanced to them. They did not feel like they were assessed on their actual financial situation but on parameters not fully able to reflect their life situation.

"The government thinks that your family can afford to pay if you go to private schools, but they give you meals and accommodation if you are lucky." - P6

It seemed to be a matter of transparency in the selection and assessment process. When those we talked to were assessed, they did not know precisely what they were being assessed on and what factors determined if they were given 100% of the loan or only 60%. This led them to question the fairness of the loan system.

"The first thing I would change is the applicant form. There are some people who have a high capacity to pay for their studies but still they get 100%. Some people have a low capacity to pay, and they do not get 100%. I would change that." - P4

Some students felt that the entire process was rigged and that qualifications did not matter at all. They even questioned if HESLB used its resources in a legitimate way.

"There are qualifications, but they do not consider that. The qualifications are just there but they are not followed. Some do not have the qualifications and they get 100% and some do have all the qualifications and do not get any loan. Unfair." - P6

Meeting demand

The general view of the interviewees and the questionnaire respondents is that HESLB cannot meet the student loan demand. Even those who received 100% of the loan sometimes had to find ways to finance their total tuition fees due to the actual fees being higher than the amount they receive. Many witness that they feel like the government needs help issuing student loans in Tanzania so everyone who wants to can go to university.

"There are so many students that want a loan, so some do not get a loan from the HESLB. We are fighting so we get a loan. Sometimes the government seems to have a shortage of money, so you need to fight for the loan." - P5

Moreover, those who did not study one of HESLBs prioritized education programs felt that it was rare to receive close to 100% of the student loan and thought that the government did not fully support them. According to our questionnaire, around 56% had no support from HESLB, 29% had full support, and the rest had loan percentages ranging from 30-90%. Diploma- and certificate students do not receive any support from HESLB.

5.1.2 **Alternatives to financing education**

All interviewees agree that the HESLB loan is the only realistic alternative to fund your higher education, except when your family can pay for you or the rare international scholarship such as Help to Help. There are no other student loans or widely available scholarships which students know about or consider. A few mentioned that they might take a regular bank loan, but the interest fees would be far too large to be a reasonable alternative.

"There are no other means to pay for meals, accommodation and tuition fees than the HESLB loan, so it is very important." - P6

According to the answers on the questionnaire from those who did not have the Help to Help scholarship, over 70% mainly supported their studies with the HESLB loan. The other 30% received financial help from their families. Only 4% of the respondents stated that they were working beside their studies. All of the interviewees commented that it was tough to have employment while studying and that it was very uncommon to support your tuition or cost of living that way. Those who did have a side-occupation mainly did small business, like selling shoes or vegetables at a market, to help support their families.

"It is really hard to get a job if you do not have a certificate or degree in Tanzania." - P4

5.1.3 **Financial literacy**

Many of the interviewees and respondents to the questionnaire lacked understanding of financial terms in general and the terms of the HESLB loan in particular.

Taking the HESLB loan to fund your university education is a big financial decision. Still, only 4% of the questionnaire respondents replied that they knew and understood all loan terms, and almost 40% stated that they did not know or understand any of the terms.

According to our interviews, there was some confusion regarding what different loan terms meant and what the specific loan terms were for the HESLB loan. Often, students had some conception of their loan terms but had details mixed up, which sometimes led them to have misconceptions about how much they would repay or when. In the worst cases, this led to frustrations and a very negative perception of the HESLB student loan.

Most of the respondents to the questionnaire did not fully understand or feel comfortable with the financial terms "interest rate" and "inflation." Only 50% answered correctly on a question regarding how interest rate works, and 20% responded correctly on an inflation rate question. However, 75% of the respondents marked that they felt" neutral," "satisfied," or "very satisfied" with their knowledge about financial products and services.

During our interviews, there were some reflections that many loan beneficiaries do not fully take the time to understand the loan terms because they would take the loan anyway, since it is the only external option to finance your education. Interviewees also remarked that financial products and financial terms are not talked about much and generally do not play a prominent role in many people's lives in Tanzania.

5.1.4 **Perception of the labor market**

According to our interviews, students and recent graduates generally had a pessimistic outlook on the labor market in Tanzania. Almost all interviewees remarked that it might take them years of applying to jobs after graduation before securing qualified employment within their field. For some professions, it is customary to first do one year of unpaid internships before the company hires you.

"Nowadays it is hard to be employed because there are many people who have graduated as doctors. I do not put much hope into being employed directly after

my internship. We see people graduated 2-5 years back and they still do petty business or do internships or volunteering at hospitals, so we do not put much hope into employment." - P4

The students' answers on the questionnaire were somewhat more optimistic. Around 50% expected to be employed within six months of graduation. Yet, the responses from those who already graduated showed that only 5% had secured paid employment, with almost half of the respondents having graduated more than six months ago. Many of them expect to stay in their current unpaid internships or unemployment for more than a year.

The interviewees seemed very eager to start employment and a career. Still, they prepared for a time of unemployment after graduation where they had to do unpaid internships or small business until they could find a job. On the question "If you do not get a job in your field of study within one year of graduation, what is your alternative source of income?" almost all of the respondents answered, "doing small business" or "being an entrepreneur". On the question of whether private or public employment was preferred, there seemed to be no clear winner.

"Right now, it is really hard to get a job within computer engineering. I am thinking of other ways of making money, but I would love to have a job." - P3

When employed, respondents are expecting to earn salaries ranging between 200,000-1,500,000TZH per month (currently around 750-5600 SEK) on their first employment, with the average being 665,740TZH.

5.1.5 **Opinions of a new student loan**

The interviews and the questionnaire brought up ideas on what could improve the student loaning situation in Tanzania and the essential traits of a potential new student loan.

The loaning amount of a student loan is important. There are few alternative financial sources for the students. Those who do not have access to help from their families need to be able to loan for the total amount of expenses they have so that they will be able to pay for tuition, food, and accommodation. Many of the students who do not get 100% HESLB loans witness that they use the money for meals and accommodation and pay for the rest of the tuition fee. This may mean skipping meals and struggling to pay other expenses but going to school and sitting for exams is more important for them.

"What we do is take the meals and accommodation money to pay the rest of the tuition fee. The remaining money I have to balance to pay for the rest of my expenses such as living." - P6

The most agreed-upon matter of a student loan is that the installments after graduation should be lower than the HESLB loan of 15% of salary. Many commented that 8%, which the HESLB loan used to have before 2016, is a more fair alternative. The interest rate of the HESLB loan also sparked remarks, mostly because the respondents saw it as a way for the government to earn money on the students, not to keep up with inflation.

"Installments should, at least, be single digit such as 5-9%, it would be better for us. The salaries are not so large that you can cut two-digit percentages." - P2

It was generally agreed upon that a repayment structure that took into account the financial situation for the loan beneficiary, e.g., by having installments be a percentage of salary, is a good thing. Furthermore, many wished that the loan repayment system would consider their individual situation by only requiring payments when having full employment.

"After having full employment, you should repay. No other improvement (to the loan)." - P8

It is important for the student to keep track and understand their loan. Several of the interviews suggested that they should be kept up to date with their payments and debt via email or SMS. The questionnaire supported these statements where 72% answered that they would rather have information via email, 28% on SMS, and none responded that they wanted it on a website.

"Emails would be an easy way to be updated on your loan statement. Nice to be updated when you have made a payment that they tell you how much you paid and how much is left to pay and details regarding that will be good." - P5

Regarding payment methods, most agree that a bank transfer is the most suitable and easy method. The interviewees stated that it was the most common method for

paying things like loan installments and the respondents to the questionnaire chose “bank transfer” as the best method, followed by “directly cut from my salary”, “mobile payments,” and lastly, “with cash”.

Interviews revealed no opposition against a new student loan from a non-governmental organization. The interviewees' only concern was that the loan terms would not be worse than those of the HESLB loan. Of the questionnaire respondents, 83% would feel comfortable taking a student loan from an organization such as Help to Help, and 10% responded that they would not feel comfortable. Additional comments included a positive view of having a loan from Help to Help because students did not only have to rely on HESLB, and Help to Help could also supply training in marketable skills.

“Based on the conditions of the loan, I would definitely take it.” - P6

5.2 Loan analysis results

To determine the characteristics of the different loan models, they have been analyzed and compared using different terms. The income distribution and wage growth are first established and used to model ISA and ICL and to determine the different repayment burdens for beneficiaries. The starting incomes are lognormally distributed, and the wage increase changes as the beneficiary ages.

The repayment burden is compared between the different loan schemes to determine the viability of the different loans for a loan beneficiary. When examining the burden for a mean income beneficiary, the ICL and ISA start with a lower burden of the students. In comparison, annuity and linear loans have a significantly higher burden. However, at the end of the loan's lifetime, the ICL and ISA burden has increased while the other two have decreased. Furthermore, when examining the burden of the lower-income beneficiaries, the ISA and ICL have a significantly lower burden than the normal linear and annuity loan due to their repayment threshold.

How much the loan is subsidized is examined for the ISA and ICL. The normal linear and annuity loans are not considered here due to them not having innate subsidization built in. When examining the loans, the ICL will have a high subsidy for the beneficiaries with the lowest income. When having positive real interest rates, the highest negative subsidy will be placed on the mid-earners. In comparison, the ISA loan will have almost a linear distribution of where the subsidy is placed, with the lowest income beneficiaries having the highest subsidy. In contrast, the highest income beneficiaries have the highest negative subsidy.

The repayment time and cumulative repayment are examined for different loans. The normal linear loan, annuity loan, and ISA will have a fixed repayment time due to it being predetermined in the loan design. However, the ICL will, due to different beneficiaries repaying at different times, have individual repayment times. Some beneficiaries will for an ICL not repay the loan over its entire life, which results in a loan subsidy.

The risk in relation to the cohort size for ISAs is examined. To determine the risk a lowest possible mean income with 95% certainty is calculated and compared for different sample sizes. The relation will see a decrease in risk per beneficiary as the sample size increases.

Finally, the administrative costs were approximated for the ICL models. Different repayment rates, inflation, and administrative costs are then compared. The relation suggests a considerable increase of the administrative costs if interest is applied on a loan with low repayment percent. In contrast, a higher repayment percent will incur a significantly lower administrative cost if an interest rate is added.

5.2.1 **Input variables**

The variables used for the simulation are the following. Some of the variables are not a part of the result but are used as input in the loan analysis.

Table 5.2: Input variables used in the modelling of the results.

Variable	***Specificities***	***Motivation***
Age when starting to study	20 years	Common in Tanzania (Luthman, 2021)
Age when loan is forgiven	60 years	Age of mandatory retirement in Tanzania[a]
Expected time until employment	2 years	The same grace period as HESLB-loan
Years of study	3 years	Most common education is a bachelor's degree, 3-years. See Ch. *4.2.1*
Tuition fee	1,400,000 TZS/year	Average tuition fee from questionnaire
Meals & accommodation	2,000,000 TZS/year	The same amount as HESLB lends
Real interest rate	2% or 0%	2% maximum as the loan cannot have worse terms than that of HESLB
Nominal interest rate	6% or 4%	-
Inflation	4%	Average last 5 years (IMF, 2020)

Repayment percent	8% or 15%	Motivation can be found in Ch. 3.5 "Income-contingent repayment plans"
Wage growth	See figure 5.2	-
Discount rate	4%	Value loss due to inflation with no interest on the capital disbursed by the lending entity
Repayment years for ISA, normal linear and annuity	5, 10, 20 years	For comparison
Tanzania poverty line	49,320 TZS/month	According to World Bank (2021)
Threshold for repayment	150% of poverty line	See Ch. 3.5 Income-contingent repayment plans
Tuition fee increase	1.11% per year	CPI for education basket together with UDSM not having changed since 2008
Mean income from distribution	665,740 TZS/month	See, "Starting income and wage growth"

[a] (International Organization of Pension Supervisors, 2011)

Starting income and wage growth

The starting income distribution is lognormal with a μ of 13.3048 and σ of 0.4588 with a mean value of 665,740TZH/month. As seen in figure 5.1**,** most of the individuals will have an income close to the mode, with some students having substantially higher starting income.

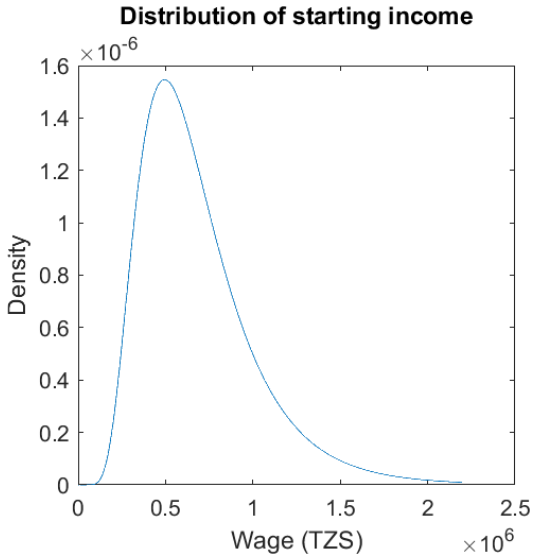

Figure 5.1: Starting income distribution for students.

At year zero in the following graphs, the beneficiary is 20 years old. The repayments start 5 years later, after 3 years of higher education and 2 years to get a paying job. The nominal income growth of an individual is assumed to be increasing over its entire lifetime. On the other hand, the real income is assumed to decline at the age of 50. This relationship of nominal and real income is due to positive inflation.

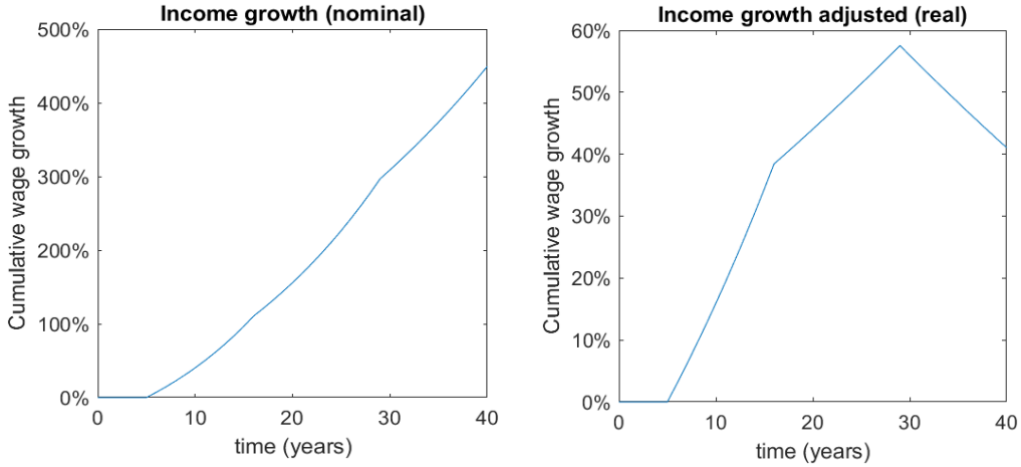

Figure 5.2: Nominal and real income growth for the students.

5.2.2 **Repayment burden for different loan models**

The graph depicts the loan burden for the mean income of the distribution as defined by repayment of total yearly income further explained in Ch. 3.11. The graph starts at year zero when the students enroll in a 3-year education program, and the repayments start 2 years after graduation due to an expected until paid employment. When the graph-line hits the x-axis, the loan is considered repaid in full.

The ICL (including the HESLB loan which is an ICL) and ISA repayment burdens are close to their repayment percentages and converge towards them as wage grows larger over the income threshold set at the Tanzanian poverty line.

The linear loan starts at a higher repayment burden, around 20% for a mean wage earner, but has a steep fall-off as wages grow. The annuity loan, which has the same repayment amount at each installment, starts at a higher rate, but as income increases, the relative burden decreases.

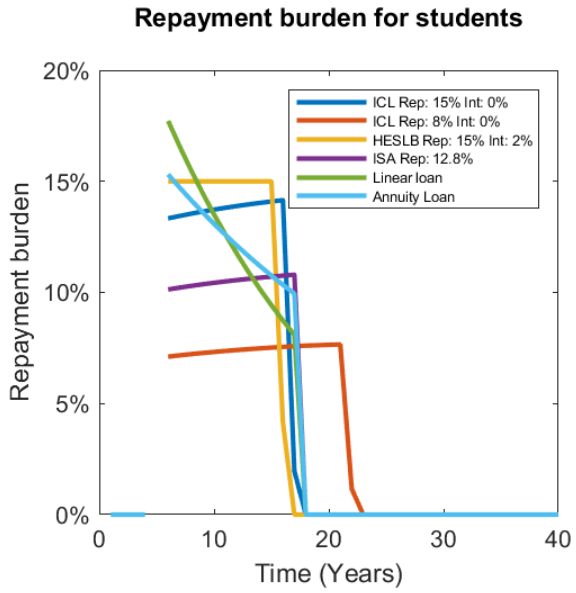

Figure 5.3: Repayment burden for ICL, ISA, normal linear and annuity loans.

Repayment burden for linear loans and annuity loans

These graphs represent the repayment burden for the mean income of the sample, which is at 665,740 TZS/month. As shown in fig. 5.4, normal linear loans and annuity loans will have a higher repayment burden initially, but it will decrease gradually. The difference between the two loans is that an annuity loan has the same nominal repayments every year, which means that the repayment burden will fall when the income increases. The linear loan, however, will gradually repay less yearly interest as the loan is amortized.

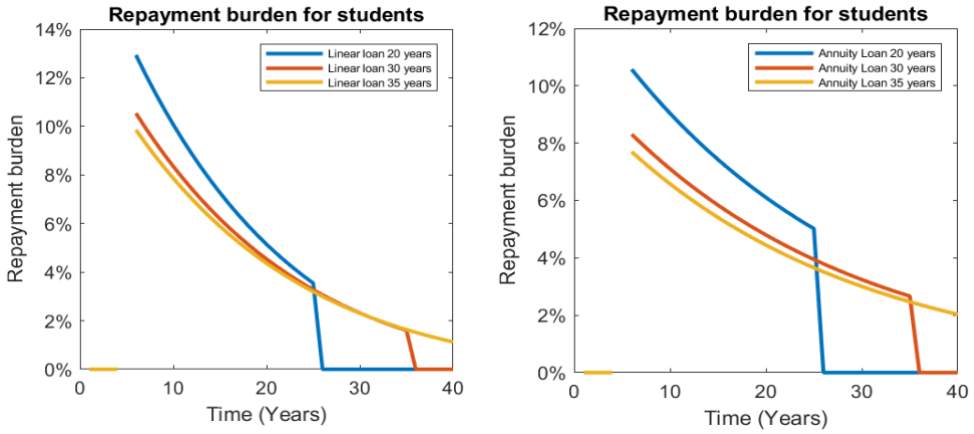

Figure 5.4: Repayment burden for different repayment times. Normal linear loan (left) and annuity loan (right), for a mean income student (665,740 TZS/month).

Repayment burden for income-contingent loans

As illustrated in graph 5.5, the repayment burden is related to the starting income of the loan beneficiary and its yearly income increase. This is due to the repayments being defined as a fixed percentage of the income over a threshold set at 150% of a predetermined value. This example uses the Tanzanian poverty line of 49,320 TZS/month. The repayment burden will be lower for low-income students since they earn less money over the threshold. The repayment burden will, as the income increases, converge towards the repayment percent.

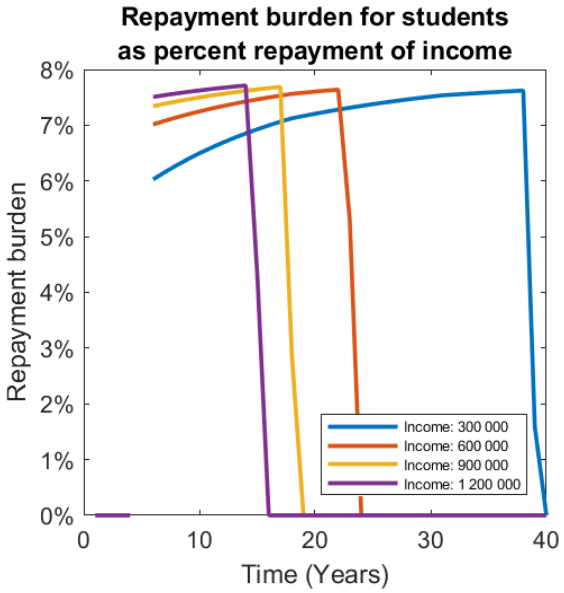

Figure 5.5: Repayment burden for different starting incomes. ICL with 8% repayment rate and 0% real interest. The Tanzanian poverty line used as threshold (49,320 TZS/month).

When the UN poverty line is used as a threshold equal to US$1.9/day or 132,183 TZS/month, it considerably changes the repayment burden, especially for low-income students. With a starting income of 300,000TZS/month, a low earner would only have to repay approximately 3% of their income the first year since they are only repaying a percentage of their salary, which is over 198,270TZS/month or 150% of the UN poverty line.

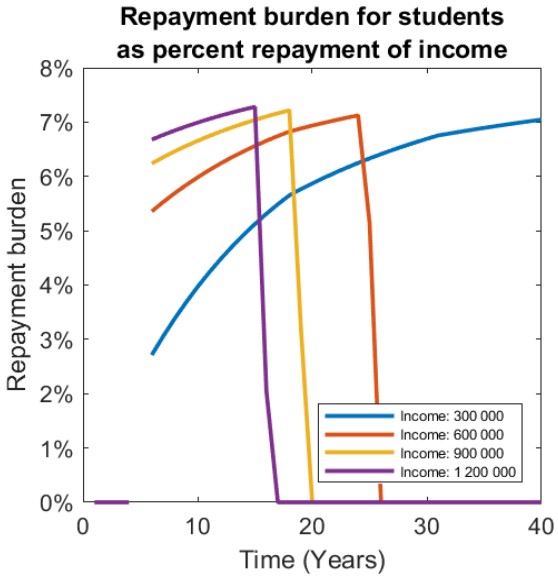

Figure 5.6: Repayment burden for different incomes. ICL with 8% repayment rate and 0% real interest with the UN poverty line used to calculate threshold (132,183 TZS/month).

When comparing an ICL, with a repayment threshold, to an annuity and linear loan, there is a difference between repayment burdens in the different models. For the annuity loans and linear loans, the low earners have by far the highest repayment burden with around 25% and 30% respectively. In contrast, the threshold on the ICL results in low earners having a lower repayment burden than that of a high earner.

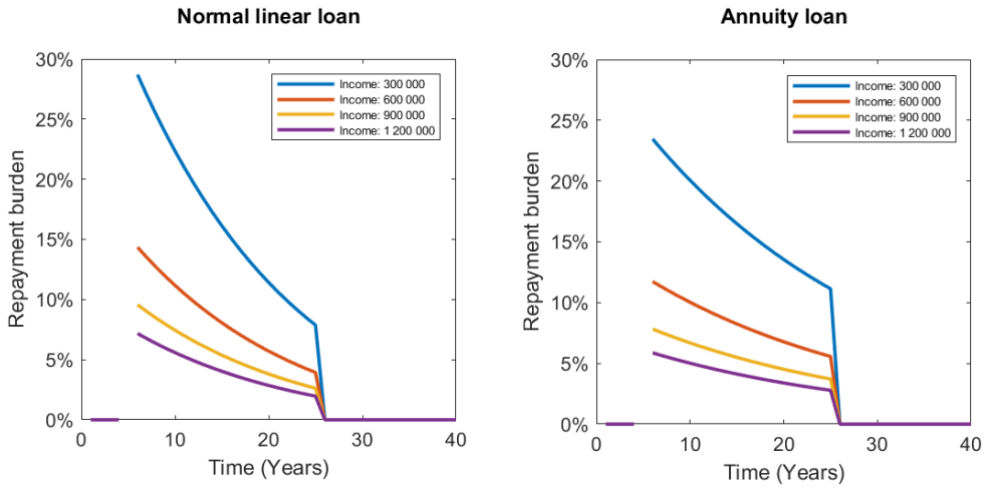

Figure 5.7: Repayment burden for different incomes. Normal linear loan (left) and annuity loan (right) with a repayment time of 20 years.

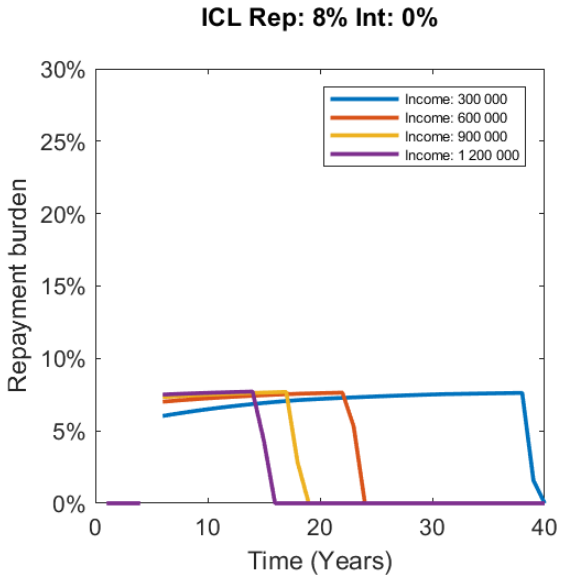

Figure 5.8: Repayment burden for different incomes, ICL.

5.2.3 Subsidies for different loan models

The subsidies given by the lending organization can be interpreted as the discounted total value of repayments an individual will repay over their lifetime compared with the discounted value of the loan given. However, it is important to note that this segment does not consider administrative and default costs.

In the following graph, a negative subsidy value means that an individual repays more than the value of their loan, which can be interpreted as paying a fee for taking the loan to cover other costs for the lending entity. On the contrary, a positive subsidy can be viewed as a grant where the students do not have to repay the total value of the loan.

As shown in graph 5.9, the HESLB loan will incur a higher fee on the low-income students because they repay the loan slowly. This causes their loan to incur a higher interest fee over its lifetime.

The individuals with the lowest income taking an ICL with 8% repayment and an interest of 2% will have their loans subsidized. This results from them not being able to repay the entire loan over its lifetime, and since the loan will eventually be forgiven at age 60, the outstanding amount is not repaid. When there is no real

interest on the loan, such as for the loan represented by the yellow line, the minimum subsidy the loan can incur is 0%.

Furthermore, due to its very definition, the ISA loan will have a higher subsidy for low-income students and incur a negative subsidy for high-income students. Every beneficiary will repay the same percentage, and the graduates receiving a higher salary will repay more over the predetermined lifespan.

Annuity and linear loans are not considered in this graph since they have the same repayment profile over all income percentiles. This means that a horizontal line somewhere on the graph would represent them. If the real interest rate were 0%, this line would start from origo and move downwards with increased real interest.

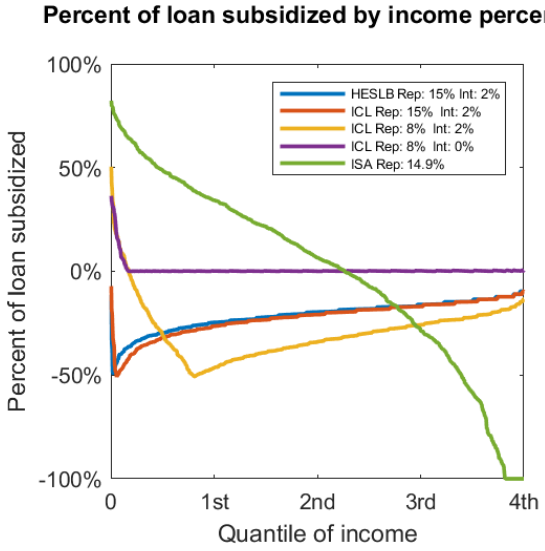

Figure 5.9: Subsidies for different income quantiles. The Tanzanian poverty threshold used.

When substituting the Tanzanian poverty line with the UNs poverty line, which is almost three times higher, the graph shifts slightly to the right. This is to be expected since it will take longer for more beneficiaries to go above the threshold resulting in more forgiven loans at its end. However, the total fees paid by the cohort will increase due to them starting to repay later, and when repaying, an individual will repay comparatively less. This results in the interest generating more debt over a more extended period, and the total debt of the students is increased. This means that the low-income students that actually manage to repay their entire debt repays more than with a higher threshold.

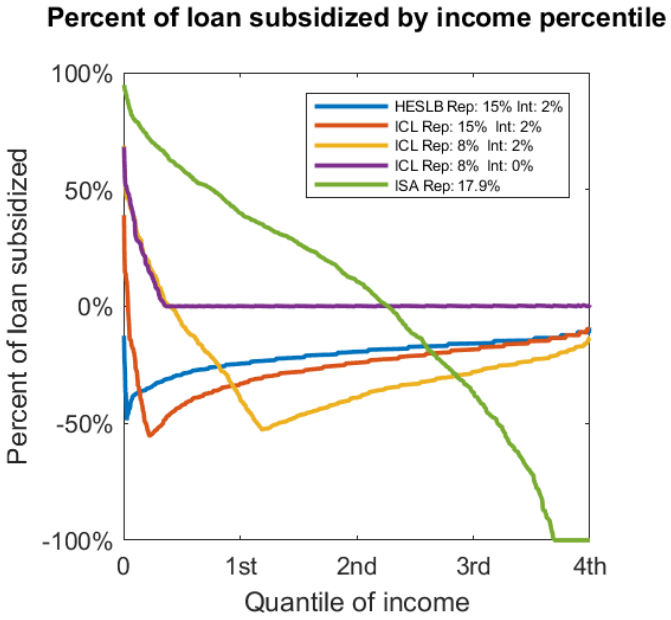

Figure 5.10: Subsidies for different income quantiles. The UN poverty threshold used.

5.2.4 Cumulative repayments

The cumulative repayments are very similar for normal linear loans, annuity loans, and ISA loans because they, by definition, are to be repaid at a set year. The main difference is that the ISA loans will be repaid unevenly in the cohort. The ICLs with longer loan horizons will see their cumulative repayment surpass that of the other loans due to the nominal value of the loan increasing with inflation and interest. The horizontal *blue* line represents the nominal amount disbursed by the lending entity. Note that the following two graphs do not consider administrative or default costs.

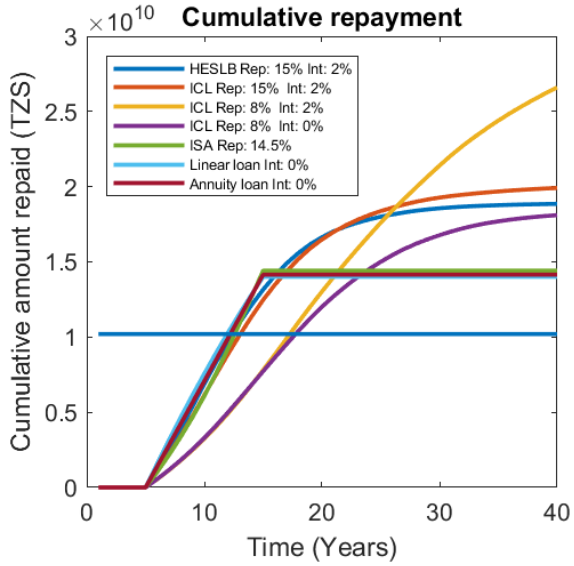

Figure 5.11: The nominal cumulative repayments over time for different loans.

When discounting the cumulative repayments with the inflation, the ICL without any real interest rate converges with the other loans without real interest. However, the two loans with a real interest rate, the *blue* and *orange lines*, will have a substantially higher cumulative repayment. The horizontal *blue* line represents the discounted amount disbursed by the lending entity.

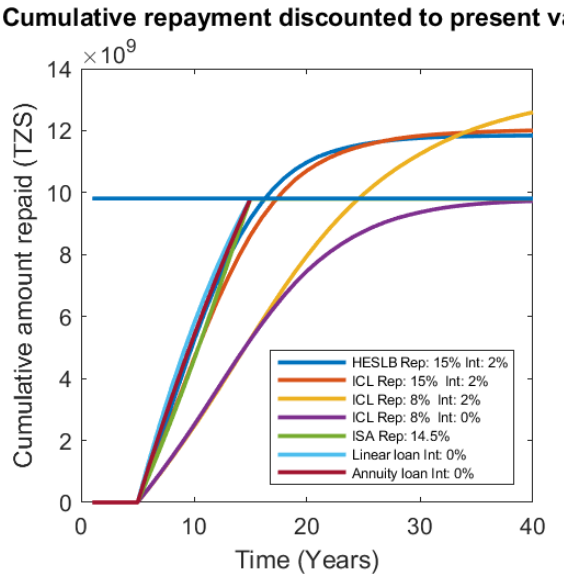

Figure 5.12: The discounted cumulative repayment over time for different loans.

5.2.5 **Repayment time and costs**

Repayment time for the ICLs

Since an ICL does not have a set amount of repayment time, it cannot be determined beforehand how long it will take to repay. The average repayment time for the sample size has therefore been calculated to give an estimation. Note that the following two graphs do not consider administrative or default costs.

Table 5.3: Average repayment time for different loan terms of an ICL.

Loan type	*Average repayment time with meals & accommodation and tuition fee*	*Average repayment time with only tuition fee*
HESLB Rep: 15% Int: 2%	16.0 years	8.3 years
ICL Rep: 8% Int: 2%	23.1 years	13.4 years
ICL Rep: 8% Int: 1%	21.8 years	12.8 years
ICL Rep: 8% Int: 0%	20.7 years	11.7 years

Repayment percent for the ISA loans given different repayment horizons

The repayment percentage of an ISA loan is mainly dependent on the amount received by the beneficiary. Therefore, a 5-year loan with meals and accommodation results in a very high repayment percent and can be reduced by increasing the number of years over which the loan can be repaid. Note that the following two graphs do not consider administrative or default costs.

Table 5.4: Break even repayment percentage for ISA. Default rate and administrative costs not included.

Loan type	*Repayment percent with meals & accommodation and tuition fee*	*Repayment percent with only tuition fee*
ISA 5 Years	31.4%	13.1%
ISA 10 Years	14.5%	6%
ISA 20 Years	6.4%	2.6%

The risk of lending money in an ISA will depend on the expected income of the sample participating. The table below shows what, with 95% certainty, the lowest mean monthly income from the cohort can be for different sample sizes. The risk which has to be compensated for is the worst-case scenario expected mean income that the sample can have. For example, the population income mean is 665,740TZS/month. If the sample size drawn from the sample is 10 people, then the worst case mean comes to 468,040TZS/month, meaning that the lender could lose up to 3,304,700TZS. If the repayment percent was calculated using the population and not considering the worst-case scenario, there is a possibility for a huge loss. This cost would have to be compensated for by increasing the repayment percentage so that risk is covered. Furthermore, the risk per beneficiary decreases as the sample size increases. Therefore, if a larger sample size is used, the required risk for each individual that has to be compensated for is less, which means that the repayment percent can be lower for the entire cohort.

Table 5.5: Worst case scenario income mean and money at risk. Both in total and per beneficiary.

Sample size	*Worst case mean income (TZS/month)*	*Total money at risk (TZS)*	*Risk per beneficiary (TZS/beneficiary)*
10	468,040	33,047,000	3,304,700
25	534,100	56,613,630	2,264,500
50	570,010	84,955,500	1,699,100
100	596,640	127,979,700	1,279,800
1000	643,100	548,242,500	548,240

ISA with defaulted capital

This graph examines the relationship between defaulted capital and the repayment percent. The graph shows the repayment percent the loan needs to have to compensate for the defaulted capital. For example, an ISA with a default rate of 10% would require a repayment percentage of 18%. As can be seen in graph 5.13, the relationship is exponential. The ISA can change its repayment percentage to compensate for the increase of defaults up until about 50% default on capital before incurring an unavoidable loss. In comparison, an ICL can only compensate by increasing the repayment rate until about 22% default on capital. However, an ICL can also compensate for the default rate with an increased interest rate, which the ISA cannot.

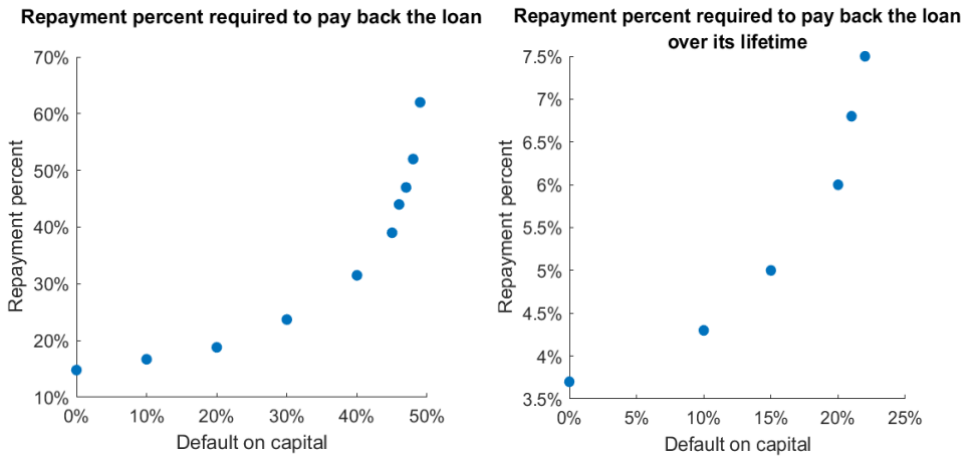

Figure 5.13: The relation between repayment rate and the percentage of capital defaulted.

ICL administrative costs

The administrative cost is dependent on the outstanding loan. The motivation for the definition can be found in chapter 3.11. Since the admin cost is dependent on the outstanding loan amount, a faster repayment results in a lower administrative cost. However, there is a difference between the two different repayment rates in how much the administrative cost increases when an interest rate is added. The loan with 8% repayment will have its administrative cost increase by 43%, while a 15% repayment loan only will see a 27% increase. The reason is that the loan with less repayment will generate more interest over the lifetime, which adds to the debt and therefore the outstanding amount and, in the end, also the admin cost.

Table 5.6 Administrative cost for different loans depending on the outstanding capital.

Loan type	**Admin cost on outstanding debt per year**	**Admin cost of disbursed amount under its lifetime**
HESLB Rep 15% Int: 2%	0.5%	6.1%
HESLB Rep 15% Int: 0%	0.5%	4.8%
ICL Rep: 8% Int: 2%	0.5%	9.9%
ICL Rep: 8% Int: 0%	0.5%	6.9%
HESLB Rep 15% Int: 2%	1%	12.1%
HESLB Rep 15% Int: 0%	1%	9.6%

ICL Rep: 8% Int: 2%	1%	20.0%
ICL Rep: 8% Int: 0%	1%	14.2%

6 Discussion

In this chapter, the results are discussed and their implications for the case organization. Different loan models are considered, and loan terms and loan policies are reviewed. Lastly, three alternative student loan designs are suggested.

6.1 Student loan models

The qualitative results and the literature review of HESLB demonstrate that there is room for a new student loan in Tanzania since HESLB cannot fully meet the current demand. Students were also positive about a student loan being presented by an NGO, which is positive for the case organization.

There are multiple ways to design a student loan. Both loan terms and loan policies have substantial effects on what it will be like to take a student loan and what financial experience the lending entity can expect. In this thesis, *loan terms* are considered quantifiable terms in a loan contract, such as interest rate and repayment percentages. *Loan policies* are defined as how loans are operated, e.g., what population to target or how to think regarding built-in subsidies.

A student loan must be desired from the students and doable for the lender, but it is not always clear what that means since students have different financial means and organizations have different goals.

Later in this segment, several instruments in student loan models are discussed based on the results in the previous chapter. Be aware that an entirely fair comparison between loan models is hard to do since it is difficult to predict essential factors such as inflation, default rates, and wage growth which the models are based on.

6.1.1 **Overview of loan models**

Table 6.1: Comparison between loan models' attributes.

	Linear loan	***Annuity loan***	***ICL***	***ISA***
Repayment burden curve	Starting high, lower each year	Starting medium, lower each year	~ constant	~ constant
Relative repayment burden for low earners	Very high	High	Low	Low
Cohort debt disbursement	Equal	Equal	Some subsidies for low earners	High subsidies for low earners at cost of high earners
Repayment time	Fixed	Fixed	Individual	Fixed
Reliance on income information	No	No	Yes, for each individual	Yes, for calculating terms
Default rates	Probably high	Probably high	Probably low	Probably low
Administration	Low	Low	High	High
Inflation risk	Low	Low	Low	High

Linear loan

A linear loan is a traditional way of giving loans. The amortizations are calculated beforehand based on how much was lent and the preferred repayment time. This makes for easy administration and clear expectations for the lending organization and the loan beneficiary. However, a linear loan will result in a high repayment burden at the beginning of repaying the loan, especially for low-income beneficiaries. This will probably lead to high default rates and less cumulative repayment.

Since students highly dislike the 15% of income installments from the HESLB ICL, an even higher percentage of income installments would likely be poorly received and make students question if it is a loan worth taking. However, a linear loan makes it clear for students for how long they will be under a repayment burden, something they are missing today when the end of repaying is unclear.

To run a successful linear loan scheme, it would be necessary to have a real interest rate to cover payment deferments due to high repayment burdens or have a relatively long repayment time. It would also be best to aim for students with high expected salaries to lower default rates.

Annuity loan

The annuity loan is very similar to a linear loan with a predetermined repayment time and interest rate. However, the installments are of the same amount for every repayment. This leads to a lower repayment burden for the students at the start of repayment. Still, the repayment burden does not diminish as fast as for the standard linear loan resulting in a higher repayment burden in the end. The total repayment is often slightly higher due to the amortization being lower at the beginning of the loan gradually increasing. This results in higher overall interest costs for the loan over its lifetime.

One problem with annuity loans is that it assumes projected inflation which risks creating devalued repayments if it is underestimated.

Income-share agreements

Income-share agreements are a less widely used form of education financing. The fixed repayment time makes it easy for the student and lending organization to plan ahead, and since ISAs base repayments on the individual's income, the burden will be more manageable than for linear loans.

The uncertainties with ISAs are that they are very dependent on both expected salary curves for their participants and correct income information during the repayment timeline. ISAs only work when the terms are correctly calculated based on how much the loan beneficiaries are predicted to earn. If salaries are overestimated beforehand, the lending organization will fall short on repaid money, and in the opposite case, the loan terms will risk being too harsh.

Since the ISA terms state that the participant is not obliged to repay the total amount lent but instead make a certain number of installments, the scheme is exposed to moral hazard in the form of incorrect salary information. If someone says they earn less than they actually do, they will end up paying less than they should for the operation to run efficiently.

The ISA is based on the principle that some are likely to pay more than lent and some less. The differences in debt burden between high- and low-earners might disinterest those who expect to earn more because the terms will be disagreeable for them, which would have to be compensated for when calculating the expected salary of the population.

The interviews reveal that some students may like ISAs because they have a fixed timeline, they have payment deferments for times with low income, and they incur no interest.

In an ISA, the loan terms will be determined by the prospect of the entire cohort participating in the agreement. It is, therefore, vital to consider the size of the cohort the loan is disbursed. Fewer beneficiaries mean a more considerable risk of the mean income being low. Table 5.6 gives estimations of the highest possible loss, with 95% certainty, that must be considered when constructing the loan terms. More people in the cohort results in a lower risk that the sample will deviate from the mean which the ISA terms are based on and therefore requires a lower risk premium from the lender to cover lower than anticipated incomes.

The ISA loan scheme has, as mentioned, three main terms: repayment percent, repayment amount, and repayment time. The relation between these three terms can be seen in table 5.5, where it becomes apparent that a larger loan will result in a longer required repayment time to be feasible. However, since the risk decreases with lower repayment time, it could be favorable, especially in the beginning when lacking experience, to have lower repayment times and lower loan amounts.

Income-contingent loans

Income-contingent loans combine the expectation of having the loan repaid in full and a repayment scheme based on the individual's salary. The result is a relatively financially manageable loan for the loan beneficiary, especially with low real interest rates. However, that comes with a cost of long repayment timelines for low earners and high administration costs for the lending organization. Those who do not have lucrative careers may still owe debt when they retire at 60 years old. It is burdensome for the beneficiary to repay for that amount of time and difficult for the lending organization to administer a loan over several decades. The costs of giving the loan may, in the end, surpass the benefits of having it repaid. In some cases, that would make it less costly to provide outright grants instead of loans.

The debt disbursement between low- and high earners would be almost equal for an ICL with no real interest rate, except that the low earners would be given a subsidy because of the loan forgiveness at retirement age. For an ICL with a real interest rate, the low-mid earners would have the worst conditions.

Financial implications of introducing a student loan

It will take a long time to recoup a significant amount of what was lent—looking at fig. 5.12, which does not consider expenses other than financial, it is apparent that it will take at least ten years. If counting in estimated administrative costs, according to table 5.7, and estimated default costs, according to Shen and Ziderman (2008), a loan scheme can expect to lose an average of 5-40% of the total amount lent per beneficiary.

Furthermore, the cumulative repayment of the student loans shows that a lower repayment percentage of salary will result in a longer time to repay the loan. Since the interest rate is connected to inflation, this will not result in a direct loss for the lending organization regarding the devaluation of money. It might even prove to provide positive cash-flows if applying real interest.

Financing non-repayment

One important question to disentangle before pursuing a student loan scheme is who should cover the discrepancy between what was lent out and what came back in the form of repayments. It could fall on the beneficiaries in the form of a positive real interest rate or a surcharge, or the lending entity and its investors could cover it.

6.1.2 **Loan terms**

Lending amount

The qualitative research showed very few reliable income sources for students other than support from relatives and the HESLB loan. If the loaning amount should cover both tuition fees and other expenses, such as meals and accommodation, it will result in high capital investments for the lending entity. But the alternative to only give small loans would exclude students who do not have financial support from home.

When considering lending amounts, it is essential to note that a higher amount is not always beneficial for the students since they will need to repay it at some point. Respondents in our study agreed that the current amount the HESLB loan dispenses of 2,000,000TZS each school year is enough to cover expenses besides tuition fees, and there could be more harm than good to increase this amount.

Paying the tuition fees directly to the university and giving the rest of the money to the students every two months, the way the HESLB payments are currently administered seems to be working well. Students need to know when they get payments so they can plan and budget their living expenses.

As seen in table 5.5, taking a loan only for tuition can be repaid by a cohort in five years with a repayment percentage of 13.1%, which is reasonable even though it is high. However, the percentage rate needs to be higher if default and administrative costs are included. However, if meals and accommodation would be included, the repayment percentage would rise to 31.4%, which is not sustainable, and the repayment period needs to be increased. At ten years repayment, a student would need to repay 14.5%.

Grace period

After graduation, the grace period, time free from installments, should reflect the current labor market situation and be part of the loan's insurance system. Most beneficial for the beneficiary would be if the grace period extends until the loan taker has a salaried job. However, a good loan should also encourage good behavior, such as being a salaried worker.

According to the questionnaire results, the current grace period for the HESLB loan of 2 years after graduation is generous and longer than the expected time to secure a job.

A grace period paired with a repayment threshold can be unnecessary and sometimes harmful. Because a threshold allows a loan beneficiary only to repay when they earn a high enough salary, the grace period does not have an effect besides possibly pushing the repayment to start two years later. Students employed directly after school would wait until the grace period is over to repay, and the students who do not have a job after the two years would still not need to repay since they are under the threshold.

However, the grace period can work as an anchor for when a student should have a job. According to Lochner and Monge-Naranjo (2016), knowing a set deadline incentivizes the student to search for and get a job earlier than without the anchor.

Interest rate

The interest rate of a student loan is highly impactful due to the loan repayment timelines. The interest rate for a successful loan scheme should at least be equal to the inflation rate. Otherwise, there will be a very low efficiency of the loan scheme since installments made decades from the start of the loan will be worth much less in real value, especially in high inflation environments. The loan terms should specify that the interest rate is connected with inflation. The HESLB loans that set a fixed interest rate of 6% can experience periods when they lose money due to inflation in Tanzania being higher than that.

A real interest rate is preferred to cover costs associated with administration and default rates. That will, however, incur a higher cost for all loan beneficiaries and increase the repayment timelines for the ICLs. Also, students in Tanzania oppose student loans with interest because they feel that they are constructed to make money off them, possibly resulting in increased repayment evasion.

The debt burden between low- and high-earners is quite similar. However, as seen in fig. 5.9, mid-income earners pay slightly more for an ICL with a real interest rate. This could be seen as a flaw of the model as the middle group will earn less

over a lifetime and repay a higher real amount than high earners. If there is no real interest rate, then everyone fully repaying the loan will only pay for their own loaned amount. This means that the people who do not repay during the loan lifetime will get a subsidy, but there will be no surplus to cover for this subsidy (or other costs) from the other loans.

The cumulative repayment for loans with an increased income rate will be higher than the loans with no real interest. However, a loan with a 2% interest rate and 8% repayment will over its life generate more money than a loan with the same interest rate but a higher repayment percentage.

Surcharge instead vs. interest rate

A surcharge instead of an interest rate is probably unviable in the Tanzanian economic environment because they experience unpredictable and occasionally high inflation rates, making it difficult to calculate a well-balanced surcharge.

Repayment

A lending organization should uphold a loan scheme with a bearable repayment burden on the loan beneficiaries. The repayment burden, according to Salmi (2013), should not exceed 8% of monthly income to reduce risk of default significantly. However, limiting the repayment burden to 8% will increase the repayment time for a loan scheme, as shown in table 5.4, making it more costly and risky for the lending entity. Harrast (2004) argues that the maximum repayment burden could instead be at 18%, which would allow for shorter repayment times, but it might be considered unattractive for Tanzanian students who feel that the HESLB loan installments of 15% are already too much.

However, by only demanding a percentage of income over a threshold the loan will incorporate insurance for those least financially successful and give a symbolic gesture that everyone repaying should still be able to cover basic expenses. The threshold can be connected with a moving measure such as poverty lines, either in Tanzania or UNs. The higher the threshold, the more subsidies are given to the lower earners (subject to real interest rates).

Collecting installments via bank transfers seems like the most viable option if you do not have access to integrated governmental options, such as the tax or pension systems. The students also agreed that they would feel most comfortable with bank transfers over other options.

Threshold vs. repayment rate increase

If the repayment threshold is lowered, a more considerable amount of loan beneficiaries will start to repay, but it would also increase the portion of income on which the repayments are based, resulting in higher repayments. If instead, the repayment percentage is increased, and the threshold kept constant, there would be no extra loan beneficiaries who would repay, but those who are over the threshold would pay more.

The choice of repayment threshold must be in harmony between the burden on low-income earners and the necessary cash flows. The threshold should constantly be reviewed regarding development in income levels for graduates and income inequality.

6.2 Student loan policies

6.2.1 **Target group**

A successful loan scheme needs to find the right participant. Otherwise, you risk ending up with low loan recovery and inefficiently targeted support. This in turn, may threaten the entire loan function with limited financial self-sustainability and weak social returns.

Each program should define the proper loan beneficiary, but in this context, it is probably someone who is financially needy, is deemed to have the ability to repay the loan, and fits in the case organization's targeted demographic group. To have these participants in the loan scheme, it is necessary with conscious advertisement and selection.

It is not financially viable to combine the 15% HESLB repayments with another repayment scheme. It will take 8-12 years to repay the HESLB loan. Therefore, a new student loan should find students who do not take the HESLB loan. These may be students who are not prioritized by the HESLB loan, such as diploma- and certificate students, or students who do not want to take the HESLB loan for other reasons. Students who are getting a partial student loan from HESLB are therefore not a good target group.

Other possible criteria for who should fit in a student loan could be geographical closeness to the lending organization's operations. This may prove beneficial when taking payment evasion counteractions discussed in segment 6.2.2, "Default and evasion".

Advertisement and application

According to the qualitative research, it appears that the HESLB does broad and thorough advertising to secondary school students via personal visits, radio, and other media. To complement the HESLB loan, there is no need to advertise to the broader masses of students but instead to the specific target group in mind and reach them before starting university.

However, many students are dissatisfied with the HESLB application because it has an application fee of 30,000 TZS. This fee risks excluding those most financially needy. Since many also feel that its online application form is challenging to fill out, it should be designed to be accessible for those who are computer illiterate.

Selection

The selection process needs to be rigorous enough to find the right participants but as modest as possible to minimize costs. To achieve this, it is wise to narrow the selection based on the application details and have interviews with few candidates. Given that taking the HESLB loan is probably not combinable with other loans, this should be a sorting criterion. The interviews should be used to confirm personal fit, financial neediness, and establish a risk profile based on the applicants' attributes.

6.2.2 Default and evasion

No student loan scheme can expect to avoid payment defaulters due to moral hazards or financial hardship. However, the default rate could be combated by consciously choosing the loan beneficiaries to minimize their risk profile and take actions against defaulters.

The default and payment evasion methods must be integrated into the whole loan process. Before someone takes a loan, it is important to evaluate them on factors correlated to the default rate, such as if they are likely to graduate. During the students' studies and after graduation, it is important to establish and keep a relationship with them. This will help keep track of the students, making repayments easier, and make it easier to understand if someone is at risk of default, allowing targeted support. Keeping a relationship with the loan beneficiaries will also help them understand that their repayments will fund other students' studies and make it easier for them to flag for potential payment issues.

Since many potential loan takers have low financial literacy, it is important to educate everyone who takes the student loan. This will help minimize payment deferments because of misunderstandings regarding the loan terms or lack of financial planning.

Guarantor and loan security

Risk can be significantly reduced by having loan security. However, in this case, it is understandable that the target group of the student loan will not be able to provide a guarantor or loan security. Requiring families to support students financially may be unsustainable for many and could inflict discriminatory practices. This will increase the risk for the lending organization since they can expect low loss recovery in case of default.

According to Blankers (2021), it can still be valuable to keep a contract with a guardian to the loan beneficiary, even without financial obligations since they can help with tracking in case of payment evasion.

Default rates vs. risk premium

For an ISA, there is an exponential relationship between required risk premium, expressed in repayment percentage of income, and default, as can be seen in fig. 5.13. This means that it is important to ensure that there are few defaults. Otherwise, the lending entity needs to introduce high repayment burdens.

Table 6.2: Actions to minimize defaults.

	Action
Before studies	- Selection based on risk profile according to segment 3.9 - Easily understandable loan terms - Financial literacy training
During studies	- Keeping contact and building relationship - Work skills and labor market training

After studies	- Continue relationship and build culture of compliance
	- Routines for payment deferments
	- Confirmation of income
	  - Require beneficiaries work contract every 6 months
	  - Require beneficiaries tax report every 6 months
	  - Compare reported salary with labor market average
	- In case of suspected payment evasion
	  - Send reminders according to segment 3.8
	  - Contact their guardian
	  - Contact their workplace

6.2.3 **Collaboration with other organization**

Organizations such as Help to Help have great expertise and mechanisms for selecting students and target support in a loan scheme, but they may lack the necessary capacity for collecting repayments. Therefore, it could be beneficial to collaborate with other organizations, such as banks or tax authorities, to some extent. Banks have instruments and infrastructure to send payments and collect payments, and they also have ways of punishing non-payments, such as barring people from credit. Tax authorities have access to vital income information for ICL and ISA-style loans.

If the entirety of the payment and repayment process is outsourced to a bank, there is a risk of the loan terms approaching commercial ones, which is unsustainable for student loans. There may, however, be instances where it is possible to collaborate on a smaller scale, such as the tax authorities giving access to income information or having banks lower their credit score in case of non-payment.

There are also benefits to collaborating with universities. Especially for the ISA alternative that heavily relies on expected income curves and employment rates it can be wise to only give loans to students from a few selected universities. This ensures that the lending entity knows the labor market the students will embark on after graduation and that they can more easily take payment evasion actions if they are able to go see the beneficiary in person.

6.2.4 Time frame and forgiveness

Having a short time frame for the repayment period is beneficial for the lending organization since it allows quicker repayments to fund new student loans and a greater capacity to anticipate the future for the organization. Tanzania, and countries alike, are changing rapidly, and it is hard to predict what the student loan environment will look like in several decades.

The loan terms mainly regulate how long the repayment period will be, namely: the lending amount, the grace period, the installment sizes, and the interest rate. Having loan terms that implicate shorter repayment time frames are often harder to pay back for students with lower incomes (ISAs excluded), but having too long time frames may allow for high administrative costs and interest fees (when applicable). There needs to be a balance, so the time frame is short enough for the lending organization to be able to plan their operations without taking too much risk but still allowing the beneficiaries to have a somewhat comfortable repayment of their loan. This will also depend on how long into the future the lending entity is planning to operate.

The risk of an ISA loan is very dependent on the length of the loan since the longer the loan is being repaid, the more weight the estimated wage growth has in predicting the repayment percentage. Since there is very little information about wages in Tanzania, the wage growth is difficult to estimate and uncertain, making it a prominent risk factor in the model. An ISA loan also needs to predict the inflation for the repayment period for the repayment percentage, which induces another risk that increases with a longer time frame.

Loan forgiveness

A loan scheme cannot collect repayments forever. Once the loan beneficiary has reached retirement age (60 years in Tanzania), they will probably have a more challenging time making payments due to lower income. This could be a good time to forgive the outstanding amount of their loan. This mechanism will matter for those who have earned little in their career and therefore not been able to pay off their loan in its entirety. With harsher loan terms, such as not implementing a threshold, the number of forgiven loans will be fewer and vice versa, but that comes with the risk of higher defaults.

An ISA loan does not need to be forgiven since the contract is fulfilled after a certain number of repayments, not the amount repaid. In the case of an ISA participant being in poverty all their life, no repayments are needed.

6.2.5 **Built-in subsidies**

A sizable built-in subsidy in the student loan scheme may be motivated by targeting a social group that needs the grant, i.e., low-income and disadvantaged students. However, if the goal is to run an effective student loan scheme somewhat self-supporting, the repayment and recovery ratio should be close to one. Sizeable subsidies should be a conscious strategy to help a target group of people. High administrative costs and default rates will, at some point, make it more cost-effective to give scholarships.

Subsidy distribution over income quantiles

As can be seen in fig. 5.9, the subsidy for an ISA loan is not equal over the different quantiles. Where low earners get their loan subsidized and high earners repay up to twice their loaned amount. The fact that the high earners repay a large portion of the debt could pose a problem if the ISA cohort is small. The risk is not evenly spread, and the lender could end up with a cohort of low-income earners resulting in low repayments.

For the ICLs, the subsidy distribution is dependent on the real interest rate and the loan forgiveness mechanism, as can be seen in fig 5.9. It is however noteworthy that the highest fees are paid by the mid income beneficiaries which might not be desirable. This can however be modified by having a shorter repayment period with interest rate which would incur higher fees for the high-income quantiles and more beneficiaries would have some of their loan forgiven.

Administration cost

It is unavoidable having admin costs when operating any loan, scholarship, or charity operations. Even just giving the money away to anyone is associated with personal and transaction costs. So to manage a well-targeted and smooth operation, it is necessary to calculate administrative costs, which probably will end up to 10-30% of the actual lending amount during a loan's lifetime. High individuality of each loan, such as having customized payment plans and payment postponements, and a comprehensive application process will lead to increased administration costs.

The loan length will play a prominent role in the administration cost, especially for loans that depend on a model where the loan beneficiaries' salaries must be retrieved and updated. The cost of processing the payments, reminders and relationship building, keeping track of beneficiaries, and handling the repayment will be correlated with the repayment length of the loan.

Keeping relationships with all beneficiaries is time-consuming and costly. Although it is hard to precisely measure the benefits of proper onboarding and communication with each lender, there are indications that it could reduce default rates significantly, according to Salmi (2003).

Table 6.3: Loan terms effect on subsidies.

	Comment on effect
Interest rate	If interest rates do not cover all expenses related to the loan scheme (e.g. default rates, administrative costs, financial costs), it is a subsidy. Real interest rates are likely to induce a negative subsidy on medium earners.
Repayment period	The longer the repayment period, the higher the subsidies due to interest rate risks falling short of covering all costs
Repayment rate	High repayment rate will likely increase subsidies for high earners who will be subject to less interest rate. A low repayment rate will likely result in a longer repayment period.
Threshold	Lowering the threshold increases the number of people who can pay, and the marginal repayment for all over the threshold, likely lowering subsidies.

6.2.6 **Funding**

The origin of the capital financing the student loans may play a decisive role in which loan model is most optimal. Using a funding structure that involves capital requirements, e.g., having funds from banks who charge interest or investors with demands on return on capital, the loan model needs to account for this in the calculations. The main instruments that balance additional requirements and cost of capital are the interest rate and the time horizon of repayment.

In the result segment, the discount rate used is 4% nominal, equal to the inflation rate in Tanzania. This implies that there are no requirements on the capital besides that it should not lose value over time. If using money from another organization or investor, the discount rate could be higher.

6.3 Possible student loan designs

A good student loan solution must be a design that is wanted in Tanzania, doable for the case organization, and sustainable for years to come. No one alternative fits every context and lending organization. It depends on how much risk is accepted and the loan scheme's most prioritized goal.

How much a new student loan is wanted is primarily dependent on two things: the financial terms available and the target group. Since many feel that the existing solution in Tanzania, the HESLB loan, is financially unfavorable, there is probably a significant desire for an option with more forgiving loan terms. Mainly by having lower than 15% of income installment rates. Since the linear style loans do not consider income, the installments for low earners will surpass the 15% of the income limit if the time horizon should be kept reasonable. Secondly, there is a large group excluded by the HESLB loan because they do not study the prioritized educational programs. Today, these are higher education students who need to find financial support elsewhere and could be a good target group for a new student loan.

Any loan scheme will come with organizational changes to adapt to new operations, but some loan designs are more favorable to specific organizations. For example, the case organization is good at selecting, educating, and building relationships with students. These skills are good for ICL and ISAs, where it is crucial to keep track of students and have correct income information, but are less critical for linear style loans, which are better for organizations who have effective repayment infrastructure.

The financial sustainability of a student loan must be compared with the goals for the loan scheme. A student loan with very favorable loan terms will still give a positive net repayment value to the lending organization compared with the costs associated with recovering the loan but may not be near self-sustaining in relation to the lent sum. If a student loan scheme is recovering less than, let's say, 30% of total costs associated with giving a loan, it may be worth considering if it is worth doing.

It is essential to look at the time frame of the loan. A loan with a very long time frame is subject to more financial risk since it is hard to determine what economic landscape will take place in a few decades, but it will also be harder to follow through, especially for a young organization, since you need to have a plan to maintain each loan for up to 40 years, depending on the loan scheme chosen.

6.3.1 **Student loan design alternatives**

This study segment loan models that are in the outskirts of the spectrum. Alternative 1 is the best for the students, alternative 2 is the best for the lending entity, and alternative 3 could be a good balance but a less traditional choice. Please note that endless combinations of loan terms are possible when implementing a student loan.

Table 6.4: Alternatives to student loan design and their financial terms.

	A1: ICL 8%, 0% real interest	A2: ICL 15%, 2% real interest	A3: ISA 10-15%
Repayment	8% of income over Tanzania poverty line	15% of income over Tanzania poverty line	10-15% of income over Tanzania poverty line
Time frame	Until repaid in full or age of retirement	Until repaid in full or age of retirement	10-15 years with repayment
Interest rate and fees	Inflation + 0%	Inflation + 2%	Incorporated in the repayment percentage and time frame

Alternative 1 - ICL with 8% repayment and 0% real interest rate

This alternative is very beneficial for the students but will be a heavily subsidized loan for many beneficiaries. The low repayment rate, together with a 0% real interest rate, will lead to forgiving financial terms for the student and a possibility of high subsidies because of administrative fees and NPL not being covered by real interest rates. The lending organization will need to take a lot of risk since this loan scheme can span over 40 years, making it hard to anticipate the environmental changes and challenges during one student loan. The long lifetime of the loan will also lead to high administrative fees.

Alternative 2 - ICL with 15% repayment and 2% real interest rate

Alternative two will be more financially sustainable than alternative one because of a shorter loan horizon and interest rates to cover costs. But still favorable to the current student loan option, the HESLB loan, because of an income threshold, which lowers installments, and better loan policies. There will be some subsidies if pursuing this option, and they may be miss targeted due to high earners repaying much faster than low earners, exposing low earners for more real interest. On one side, this option could prove less risky due to the real interest rate covering some defaults and administrative costs. On the other side, the repayment percentage is almost equal to the HESLB loan terms, and HESLB has had a hard time with over 50% non-repayments in recent years. If this is due to mismanagement or because of the disagreeable loan terms is not clear.

Alternative 3 - ISA with 10-15% repayment for 10-15 years

The ISA financing option is less traditional than an ICL. This alternative will provide heavy subsidies for low earners but high fees for successful students with high salaries. One of the major benefits is the foreseeable time frame of the loan. Since the number of repayment years is set beforehand, the lending entity can plan more adequately for its operations and have a higher chance of understanding its risks. On the other hand, this model will provide a lot of risk since its viability is based on forecasts of the labor market risk and inflation as well as the cooperativeness of the participants. The ISA will be harder to launch since NPL and administration costs have to be calculated before disbursing loans to the first cohort. The terms can be changed later on when NPL and administration costs have been determined empirically but will result in either losses or higher repayment costs for the first cohort.

A successful ISA needs to be based on forecasts for the labor market where the participant will have their career. It is crucial to base the algorithms determining the loan terms on reliable income data if pursuing an ISA. Looking at table 5.5, the terms will likely be around 10-15% repayment for 10-15 years. According to the results in table 5.6, an ISA scheme will greatly benefit from having a large number of participants. If only having 10 participants, there is a 5% risk of losing over 3 million TZH per beneficiary, while if having 1000 participants, this number decreases to 0.55 million TZH.

Table 6.5: Alternative student loan designs and their viability, desirability, and feasibility.

	A1: ICL 8%, 0% real interest	**A2: ICL 15%, 2% real interest**	**A3: ISA 10-15%**
Viability - Economical sustainability	**Low** - will provide some subsidies over a timeframe between 18 and 40 years	**Medium** - will provide no subsidies over a timeframe between 12 and 40 years	**Medium-high** - 10-15 years' time frame. Will cover expenses if correctly calculated.
Desirability - Student perspective	**High** - better than the current alternative. Can provide financial supply and support	**Medium** - roughly equal to the current alternative. Can financial supply provide additional support	**Medium** - better than current alternative for most, but worse for high earners.
Feasibility - Operational perspective	**Low** - will need to be administered for 40 years	**Low** - will need to be administered for 40 years and have a significant debt burden on beneficiaries	**Low-medium** - need large starting capital. Need to be administered for 10-15 years.

Student loan policies

Besides optimizing quantitative terms of a possible student loan, it is essential to acknowledge the loan policies. All loan alternatives will benefit from practices

that provide proper targeting and support, incentives for repayment, and insurance against labor market risk. These principles can manifest themselves in the following loan policies.

Table 6.6: Student loan policies: selection, support, and insurance for ICL and ISA.

	Policy
Selection	- Financially needy - Low risk profile - Have not started HE - Not matching with the HESLB loan - Transparency in process - Geographically close to own operations (ISA only)
Support	- Explanation of implications before engaging in contract - Financial literacy training during studies - Labor market trainings during and after studies
Insurance	- Repayments only over threshold - Grace period until earning more than threshold - Repayment deferment on case-to-case basis

7 Conclusions

In this chapter, recommendations are formulated together with a summary of answers to the research questions. A critical review is given as well as suggestions for future research before the concluding remarks.

7.1 Answers to research questions

1. **What challenges are Tanzanian students currently facing when financing their higher education?**

Students in Tanzania are experiencing several challenges when financing their higher education studies. Because the Higher Education Students' Loan Board (HESLB) is the only prominent financing actor, many issues are related to their operations.

Firstly, HESLB does not currently supply loans to all students. They have a priority list to determine who should get a student loan and how much they should receive, which leaves many without support. Secondly, the HESLB loan comes with high required installments, 15% of salary, which many find hard to meet. Especially since many are worried about the labor market after graduation and that it is normal to support one's own family when having a degree. Finally, lacking financial literacy from students makes some perceive the loan conditions worse than they are, leading to frustration. Some of this frustration results in little trust in HESLB, fueled by insufficient transparency into HESLB's processes, leaving the students guessing if the institution is on their side.

Table 7.1: Tanzanian students' challenges when financing higher education.

	Challenge
Before higher education	- Few alternative income sources besides the HESLB student loan - Complicated application to HESLB with application fee - Unclear selection criteria and transparency for the HESLB loan - Lacking education on what the loaning contract means
During studies	- Everyone does not receive a HESLB loan - Many who do receive a loan do not receive the full amount - Even if receiving the full amount, the loan does not cover all tuition fees at some schools
After graduation	- High required installments - Severe punishment in case of non-payment - Lacking trust in HESLB - Insufficient financial literacy

2. What factors need to be considered when designing a student loan in Tanzania?

Several intercorrelated factors must be considered when designing a student loan in Tanzania.

The choice of the target group is a significant factor in determining the effectiveness of the loan. The target group should consist of financially needy students who have not prior benefited from a HESLB loan. These can be diploma/certificate students who are ineligible for HESLB support or students that, for any other reason, are not matched with the HESLB loan. It is also essential to consider the individual and its risk profile, depending on personal characteristics and type of degree (which determines tuition fees and labor market opportunities).

Another factor to consider is how easy it is to gather information on beneficiaries by either working with the government, universities, or other institutions. Two of the proposed loan alternatives, ISA and ICL, require the lending entity to have information about the beneficiaries' current salaries. An ISA also requires knowledge of projected income and the income distribution of the cohort given the loan. A cooperation with an institution could also be used to collect the repayments.

An alternative, or complement, to partnerships with other institutions is to foster strong relationships with the beneficiaries. This can help create a culture of compliance, where people want to make correct repayments and help the beneficiaries in the labor market, which benefits both parties.

The time frame is crucial to consider. A loan with a long horizon may provide better loan terms for the beneficiary but could implicate high administrative costs and far too long repayment periods for the lending entity to be effective. ISAs,

which largely depend on forecasts of the labor market, are especially ill-suited for extended time frames.

Finally, it is also of great importance to consider the financial terms such as default rates (due to financial hardship or evasion), inflation and employment rates. These factors and the lending entity's goal help decide what type of loan model should be used. The loan terms and policies should be developed with a target group and economic environment in mind to ensure an effective loan scheme.

3. What financial implications does different loan terms and policies have for the loan beneficiary and lending entity?

When trying to understand the financial implications that a loan introduces, it is essential to examine the perspective of both main stakeholders, the loan beneficiaries and the lending entity. It is also important to understand that the different terms often are intertwined, and changing one will affect the others.

The primary measurement to consider the perspective of the loan beneficiary is the repayment burden (i.e., what percentage of income the monthly installments are). An acceptable repayment burden is decided with the life quality of the lender in mind, but also at what level of burden the default rates are expected to increase considerably. Salmi (2003) and Harrast (2004) have different definitions for this, at 8% and 18%, respectively. A too low repayment burden is unviable for the lending entity, which risks having too large costs associated with longer repayment times, but too short will lead to an unreasonable repayment burden for the beneficiary. To help low earners with high repayment percentages, an income threshold can be introduced.

Subsidies are a way for a loan scheme to be more beneficial for low earners. There are two central subsidies considered in this thesis: grants and hidden grants. Grants include outright loan subsidies for some groups of people, such as having loan forgiveness at a certain age. Hidden grants include everything that the lending entity spends on giving out loans but is not reflected in what comes back in repayments. This is often due to interest rates not covering default rates, administrative costs, and requirements on capital. The lending entity can decide who should be subject to the subsidies by studying how different income groups are affected by real interest rates, income thresholds, and other loan terms. For a well-balanced ISA, the subsidies will be 100% for the lowest earners while the high earners pay double.

Finally, understanding the relationship between administrative cost and rate of default is of great importance. Employing a rigorous screening process can lead to more suitable applicants being chosen and following up with continuous contact with the beneficiaries can ensure that more of them are successful. These actions

are positive because they reduce the risk of default, but they will also incur an enormous cost for the lending entity, risking generating more costs than value.

7.2 Recommendations to the case organization

The case organization, Help to Help, is recommended the following:

General

- **Do not implement a student loan yet:** First, several areas need to be researched to understand if Help to Help should start a student loan program in Tanzania or not.
- **Explore partnerships with other institutions:** An NGO student loan scheme has several benefits to draw from cooperatives with HESLB, banks, and tax authorities. Especially regarding providing income information and distributing the financial risks.
- **Investigate legislative requirements:** There is a risk that a loan program could be subject to other laws and taxes than the current scholarship operations, which could affect the choice of loan design.
- **Define long-term strategy:** It is necessary to look at the goals for Help to Help many years in the future to properly commit to a student loan scheme that could last for decades. This will also help decide which loan model is most fitted to the organization.
- **Consider organizational and infrastructural changes:** To operate a loan scheme, you need to have both systems to handle money and relations, and personnel to manage everything from applications to payment deferment pleas.
- **Keep track of environmental factors crucial to operations:** The financial outcome of student loans will be heavily affected by factors such as employment rates, wages, and inflation rates.

If pursuing the income-share agreement alternative

- **Develop an algorithm for deciding ISA terms:** To minimize financial risk, there is a need for an algorithm that considers: lending amount, unemployment rates, wages, and the number of ISA participants to decide on well-balanced loan horizons and repayment percentages.
    - Use reliable data. Either by collecting it in collaboration with a university or through the next Integrated Labour Organization

(ILO) survey done in Tanzania. The current one is from 2014 and has a meager participation of university graduates.

7.3 Critical review

The qualitative results in this thesis are based on eight interviews with students and 121 questionnaire answers. The eight students all came from the network of the case organization, Help to Help, which mainly supports financially needy students. These eight students may therefore not be representative of the whole higher education student population in Tanzania. Furthermore, the communication was limited due to interviews being conducted over video-link in English, which all of the interviewees were not fluent in, opening up for author interpretations and bias. On the other hand, the questionnaire collected 121 responses, and these answers were in line with the opinions from the interviews. Furthermore, literature and expert interviews confirmed the findings from the interviews.

Some of the studies used in this thesis were done over 30 years ago, and their findings may not be entirely transferable for today. Also, few studies have focused on the SSA region and Tanzania, which resulted in this thesis being based on studies primarily done in other parts of the world where student loan research is more extensive.

This study and the conclusions drawn are primarily theoretical and do not consider implementing a new student loan scheme. This may result in the recommendations being obsolete due to unworkable organizational changes or legislative issues.

Finally, much of the quantitative results were based on assumptions regarding income profiles, income growth, and default rates based on a small sample or literature studies done in other countries, which could provide a false image of the reality in Tanzania. This study modeled income data based on what the students assumed they would earn and not what they actually will earn, making the data unreliable. Furthermore, the wage increase had to be estimated from other countries' income curves as there was no available data in Tanzania. This is acceptable when comparing loan schemes. However, it would not work when deciding exact loan terms for an ISA.

7.4 Suggestions for future research

There are various exciting areas which this thesis did not cover. This study did cover a theoretical consumer-lending entity perspective but, intentionally, came

short of investigating the funding structure for student loans and the implementations phase.

Giving out student loans requires a massive amount of capital. How do the optimal loan terms and policies change if that capital comes from a bank loan or an investor with capital requirements? Much of the existing literature assumes that the lender is a government with a long-term perspective and easy access to cheap capital, but to cover the demand for higher education in the future it might be necessary for other actors, without that status, to step in. Also, this thesis did not cover any implementation and testing strategies. How do you test and evaluate a student loan when a complete cycle is several decades? How many do you need in the test group? What happens if the lending entity no longer wishes to continue, can you sell the student loans to cover losses?

This thesis tested a limited amount of loan term combinations, and there are many more to consider. But mostly, it would be interesting to delve into how the role of starting income, income growth, and lending amount in deciding the best loan model. This could test the transferability of results since different countries often have divergent financial settings.

7.5 Concluding remarks

The demand for higher education is increasing rapidly in Sub-Saharan Africa, and the governments have often settled for cost-sharing policies to keep up with rising costs. Student loans will play a prominent role in helping all members of society access higher education, which will benefit both themselves and the community.

This thesis aims to describe the two conflicting sides of the student loan predicament: the students who need to afford their education and repay at a reasonable rate and the lending entity who needs to be financially sustainable for years to come. By promoting one side, you often burden the other. A large amount of capital is necessary to be activated for long periods of time, resulting in financial structures exposed to economic inconsistencies, making it especially vulnerable to operate a loan scheme in developing countries where the labor market and economic environment may change rapidly.

A student loan scheme could greatly impact the individuals who are allowed to pursue higher education and society at large. With consciously chosen loan terms, attentive loan policies, and cooperativeness, a loan program could balance the conflicting social and financial responsibilities and make a lasting change.

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P1, Tanzanian student. Online interview through Google Hangouts. March 10th, 2021

P2, Tanzanian student. Online interview through Google Hangouts. March 11th, 2021

P3, Tanzanian student. Online interview through Google Hangouts. March 11th, 2021

P4, Tanzanian student. Online interview through Google Hangouts. March 22th, 2021

P5, Tanzanian student. Online interview through Google Hangouts. March 22th, 2021

P6, Tanzanian student. Online interview through Google Hangouts. March 22th, 2021

P7, Tanzanian student. Online interview through Google Hangouts. March 24th, 2021

P8, Tanzanian student. Online interview through Google Hangouts. March 24th, 2021

Appendices

Appendix A - Student interview guide

Appendix B - Questionnaire

Appendix A - Student interview guide

Pre-interview

- Introduce ourselves
- Describe what we do and why we have this interview
- Tell the interviewee that they will be anonymous
- Ask for consent of recording the interview
- Inform about the expected time and what sort of questions we will ask in the interview

Introduction

1. Please tell us a bit about yourself.
    a. For example: Name, age, university and field of study

Financing of tuition/cost of living - current external financing

2. How do you currently support your tuition fees and cost of living?
3. How much do you need to support yourself every month?
4. Do you have any side occupation/job that earns you a salary?
5. Do you currently have any loans aside from HESLB to finance your education?
6. What is your perception of your financial situation as a student?

Experience with HESLB

7. Do you have or have you had a loan with HESLB?
8. If yes, how much of your expenses does the loan finance? In percentage
9. If not, how come you did not get the loan?
10. What do you think about the HESLB loan?
11. In what year of your studies did you first get the loan?
    a. Did the loan percentage change anything during your studies?
12. How was your experience with the application process to HESLB?
    a. Information before
    b. Ease of application
    c. Information about if they will receive the loan or not
13. How was your experience with receiving the loan from HESLB? Such as:
    a. Timely payments
    b. Correct payments
14. What is your perspective of the terms of the HESLB loan?

    a. Do you think the terms to the HESLB loan are clear and easily understandable?
15. What do you think about the terms on the HESLB loan? Reminder:
    a. 15% amortization on gross salary
    b. 6% interest rate (+ 1% admin fee)
    c. 24 month grace period
16. What do you think about the selection of the HESLB applicants?
    a. Fair selection of their applicants or not
17. What do you think HESLB can improve?

If they are repaying the loan

18. What is your experience with repaying the loan?

Experience/satisfaction with other external financing

Same questions as for HESLB but modify for the other loan/scholarship

Loan design - opinions and importance of loan design and terms

19. What do you think a good student loan would look like?
    a. Interest rate
    b. Repayment plan (Income-driven, fixed)
    c. Grace period
20. What expenses do you need a student loan to cover? For example:
    a. Meals and accommodation
    b. Tuition
21. How would you like the repayment process of a student loan to look like?
22. How would you like to be able to repay your loan? For example:
    a. Mobile
    b. Bank account
    c. Cash
    d. From employee salary
23. How would you like to get information about your loan? Such as your next payment, how to repay and how much you owe. E.g.
    a. Via email
    b. Via SMS
    c. Via website
24. If there was another student loan except for the loan's board, would you take it?

After graduation

25. What do you think about your future?
26. How long after graduating do you expect to have a job within your field?
27. What do you expect to earn at your first job after graduation?
28. If you do not get a job in your field of study within 1 year of graduation, what is your alternative source of income?

End

29. Do you have any questions for us or anything you would like to add?

Appendix B - Questionnaire

“Hello,

We are two students from Sweden who are writing our Master Thesis together with the organization Help to Help. We have sent you this form because we would like to ask you questions related to student loans in Tanzania.

It would help our research tremendously if you would answer this form as thoroughly as you can.

All responses will be ANONYMOUS and no one will be able to see the data besides the two of us. The anonymous data will be analyzed and finalized in a published research report. You are very welcome to view the report if you wish - our contact details are written at the end of this form.

The form will take approximately 15 min to fill out. Thank you for your time and effort!

Asante,

Carl Johansson & Jacob Lundborg Ander”

Introduction

1. What is your age? Please write with numbers.
2. What is your gender?
    a. Male
    b. Female
    c. Prefer not to say
3. What type of degree are you pursuing? If you have graduated, answer what type of degree you have
    a. Bachelor’s degree
    b. Master’s degree
    c. Diploma or certificate
4. What is your field of studying? If you have graduated, answer what field you did study
    a. Social sciences
    b. Agriculture
    c. Business (Marketing, accounting, finance) Education
    d. Engineering
    e. Environmental sciences
    f. Health and medicine
    g. IT and Computer science
    h. Law

i. Sports and Games
j. Other: _____

5. Do you currently or did you have a scholarship from Help to Help?
    a. Yes
    b. No
6. Have you graduated from higher education? (Bachelor's degree, master's degree, diploma or certificate degree)
    a. Yes
    b. No, I am still in School
    c. I am currently postponing my studies

Financing of tuition today

7. How do you currently support your tuition fees and cost of living? Mark all that apply:
    a. HESLB loan
    b. Other loan
    c. Parents and relatives
    d. Working
    e. Help to Help scholarship
    f. Other:_____
8. How much is your tuition fee per semester in Tanzanian shilling?
9. How much of the HESLB loan do you receive for tuition fee?
    a. 0%
    b. 10%
    c. 20%
    d. 30%
    e. 40%
    f. 50%
    g. 60%
    h. 70%
    i. 80%
    j. 90%
    k. 100%
10. How much do you get every payout from HESLB for meals and accommodation? Please answer in Tanzanian shilling
11. How much is your current expenses per month except for tuition fee? Please fill out in Tanzanian shilling and specify what you use it for (accommodation/food/other expenses etc.)

Experience with HESLB

12. Do you know the terms of the HESLB loan? Such as how much you will have to pay back each month, what the interest rate is and for how long you will pay back the loan.
    a. No, I do not know or understand any of the terms of the loan
    b. I know and understand some of the terms of the loan
    c. I know and understand almost all of the terms of the loan
    d. Yes, I know and completely understand the terms of the loan
13. Please motivate your answer on the previous question
14. What do you think HESLB can improve?

After graduation

15. How long after graduating do you expect to have a paid job within your field?
    a. 0-3 months
    b. 4-6 months
    c. 6-12 months
    d. 1-2 years
    e. 2+ years
16. What do you expect to earn at your first job after graduation? Please answer in Tanzanian shillings per month:
17. If you do not get a job in your field of study within 1 year of graduation, what is your alternative source of income?
18. In what way would you like to be employed after graduation?
    a. Self employed
    b. Private sector
    c. Public sector

Labor market and repayment

19. How long ago did you graduate from school?
    a. 0-6 months
    b. 6-12 months
    c. 12-18 months
    d. 18-24 months
    e. 24+ months
20. What is your current occupation?
    a. Paid job within field of study
    b. Unpaid internship or job within field of study
    c. Paid job outside field of study
    d. Unemployed
    e. Other:____

21. Which alternatives best describe your current employment?
    a. Self-employed
    b. Employed in public sector
    c. Employed in private sector
    d. Unemployed
22. What is your current salary per month? Please answer in Tanzanian shilling
23. For how long do you expect to stay at your current workplace?
    a. Less than 1 month
    b. 1-6 months
    c. 6-12 months
    d. 12+ months
24. Have you started to repay the loan to HESLB?
    a. Yes, through my employer
    b. Yes, I make my own deposits
    c. No
25. Do you know how much your debt is to HESLB?
    a. Yes
    b. I am not sure
    c. No
26. How do you get information about your student loan at HESLB? Such as how you make repayments and how much your debt is .
27. Have you had any challenges with repaying the loan to HESLB?
    a. Yes
    b. No
28. If you answered "Yes" on the previous questions, please explain.
29. What do you think can change in the repayment process to HESLB?

Loan design

30. What do you think a good student loan would look like?
31. What would you rather take a student loan for?
    a. Tuition fees
    b. Meals and accommodation
32. How would you like to be able to repay your loan? Please rank the following options where 1 is a very good option and 4 is a very bad option.
    a. Via mobile payments
    b. Via bank transfer
    c. Via cash deposits
    d. Via my salary through my employer

33. How would you like to get information about your student loan? Such as when you get payments, how you make repayments and how much your debt is.
    a. Via email
    b. Via mobile texts
    c. On a website
    d. Other:___
34. When would you like to start repaying your student loan?
    a. Right after graduation
    b. 1 year after graduation
    c. 2 years after graduation
    d. When I have started a job with salary
    e. Other: _____

Financial terms

35. If you leave 10 000 shillings in a bank account with 8% annual interest rate, how much will you have after 2 years if you don't add or withdraw anything?
    a. Exactly 10 800 shilling
    b. More than 10 800 shilling
    c. Less than 10 800 shilling
    d. I do not know
36. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?
    a. Same as today
    b. More than today
    c. Less than today
    d. I do not know
37. How satisfied are you with your knowledge about financial products and services, such as loans and interest rates?
    a. Very satisfied
    b. Satisfied
    c. Neutral
    d. Dissatisfied
    e. Very dissatisfied
    f. I do not know
38. Please motivate your answer to the previous question.
39. Would you feel comfortable taking a student loan from a non-governmental organization such as Help to Help?
    a. Yes
    b. No

c. Maybe

40. Please motivate your answer to the previous question.

End

“Thank you so much for participating! Here are our contact details:

Carl Johansson: **@**.com

Jacob Lundborg Ander: **@**.com

Have a nice day!”

41. Is there anything you would like to add?