Groningen, June 30, 2023

LIFE-Basic Income Project
in Welle, Uganda

Midline Evaluation Report

Elisa van Dongen
Robert Lensink
Annika Mueller

From the University of Groningen

Executive summary

This report provides an overview of the developments in the rural village Welle, located in the West-Nile region of Uganda, since INclusion started its 7-year LIFE basic-income program - also referred to as Nebbi Inclusive Development Project - in August 2020 up to 2.5 years into the program.

The key findings of this review are as follows:

1. Since the LIFE basic income project started, access to food and clean drinking water improved. The program's community fund enabled the village to establish a borehole, which provides its residents with a nearby clean water source. With the individual cash-transfers the far majority of beneficiary respondents buys food. The value of food consumption increased and the index for food security improved considerably between the baseline (December, '19) and the second follow-up survey (December, '22).

2. Overall, the health of respondents from Welle appears to have improved. In December 2022, less respondents in Welle reported having been ill in the four weeks prior to being surveyed compared to the baseline survey in December 2019, and the average number of missed days at work/school due to being ill decreased 75 percent. Meanwhile, the basic income may have made health care somewhat more affordable; medical expenditures increased by about 60 percent, and the share of children aged under 14 that visited a medical doctor in the six months prior to the survey increased by about 10 percent.

3. The school attendance increased substantially during this period: the share of school attending household members aged 4 to 25 years increased by 25 percent. Furthermore, the average household expenditure on education was almost fivefold of its baseline level.

4. Considering assets, a considerable share of the respondents from Welle (63%) used the basic income for investments in housing, building both traditional and semi-permanent homes.

5. There is some increase in reported consumption of temptation goods (e.g. alcohol consumption), from an average of 1,261 UGX prior to the baseline survey to an average of 2,560 UGX in the week prior to the second follow-up. Although an increase maybe concerning, it should be noted that compared to other expenses these values are low.

6. Overall, emotional well-being appears to have improved in Welle since the baseline. Respondents indicated to perceive less stress over multiple domains over time and obtained a more optimistic life orientation. The CES-D index for symptoms of depression remained roughly the same. Rosenberg's index for self-esteem declined only very slightly, and to considerably smaller extent relative to Nyakumba.

Table of contents

1 Introduction

The purpose of this study is to review the 7-year LIFE basic-income project, set up by INclusion in 2020 in a rural village, called Welle, in the West-Nile region of Uganda, and managed by Ugandan Agency For Accelerated Regional Development (AFARD), at an intermediary stage.

The LIFE basic income project is a universal unconditional cash transfer program that has been implemented in Welle since August 2020, with the aim to improve the residents' agency and provide residents with the opportunity to climb out of poverty. In this case, universal means that all residents of the village are eligible to participate in the program. Unconditional means that beneficiaries do not have to make use of a particular service or perform a certain activity to become eligible. Finally, the basic income is received in the form of mobile money on a feature phone provided by INclusion at the start of the project.

The authors of this report studied how Welle developed in multiple different areas since the start of the project up to 2.5 years into the project. To assess how Welle has developed within this period, three surveys were conducted: a baseline survey (2019), a first follow-up (March, 2021), and a second follow-up (December, 2022).

Research questions:
1. *How has access to food and clean water changed among beneficiaries within December 2019 and December 2022?*
2. *How has the health of beneficiaries changed within December 2019 and December 2022?*
3. *Has the number of persons aged between 4 and 25 attending school within the recipients' households after the COVID-19 lockdown was lifted changed compared to the baseline?*
4. *Have the beneficiaries accumulated more assets within December 2019 and December 2022?*
5. *How has the consumption of temptation goods developed between December 2019 and December 2022?*
6. *How has the emotional wellbeing of beneficiaries changed between December 2019 and December 2022?*

To answer the above-mentioned research questions, we compare i) values reported by 47 beneficiaries in the follow-up survey with their corresponding baseline values, and ii) temporal changes among these 47 respondents in Welle with that of 42 survey respondents from a control village, which had similar baseline poverty levels.

The next sections contain a more extensive summary of the LIFE basic income project, context on universal basic income and how the LIFE project compares to other basic income programs, a description of the methods used, the results per theme, and finally, a discussion of the results and future outlook.

2 The LIFE Basic Income Project

The LIFE-basic income project is a 7-year (i) universal, (ii) unconditional, (iii) cash-transfer program with monthly pay-outs, set up in the pre-selected village Welle by the Dutch NGO 'INclusion' in August 2020. Universal means that the basic income targets all residents of Welle. Moreover, the cash-transfer amount does not differ between individuals, meaning everyone, including minors, receive the same amount. Unconditionality means that beneficiaries are not obliged to make use of a particular service or perform a certain activity to become eligible for the cash transfer. Cash-transfer means that the beneficiaries receive the basic income in the form of money, not in the form of vouchers or products/services.

INclusion chose to provide basic income to all residents of one village for practical reasons and, to prevent potential stigma of the poor or jealousy within the village. The basic income is unconditional and in-cash, as INclusion aims to provide its recipients with the autonomy to improve their lives in the way the recipients themselves see fit. INclusion believes that recipients themselves know best how to maximize their own utility[1] within a given budget. Hence, INclusion does not desire to influence spending via, e.g., a voucher/in-kind transaction, or expenditure conditions.

Figure 2.1 The Monthly Basic Income Transfer unpacked
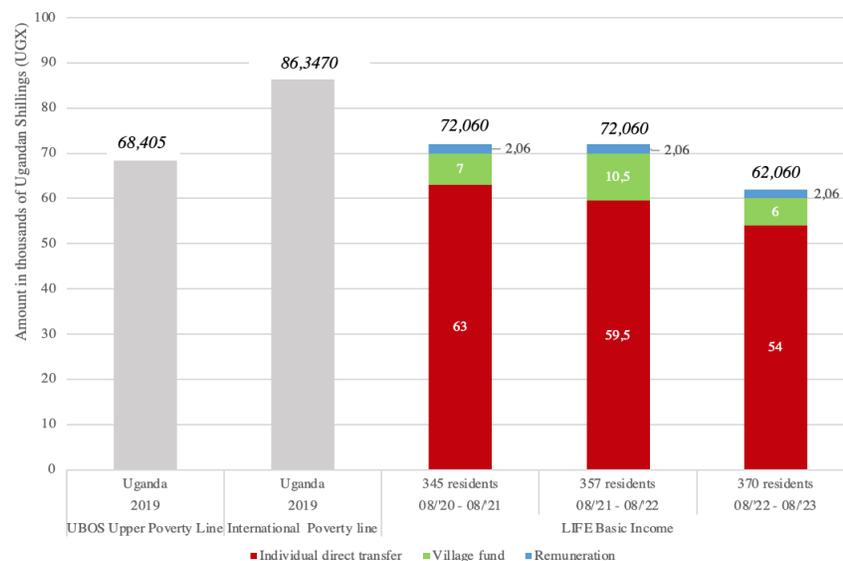
Note: The amounts are defined per month. The displayed Uganda Bureau Of Statistics (UBOS) Upper Poverty Line and the International Annual Poverty Line for 2019 are calculated to a monthly value, by first multiplying the daily value by 365 days, and then dividing this number by 12 months. These Poverty Lines are equivalent to 1.77 USD and 2.15 USD (2017 PPP) per capita per day. The UBOS suggests to use the 1.77 USD upper poverty line rather than the official national poverty line set in the '90s. Source: The Uganda National Survey Report 2019/2020 by UBOS and the World Bank.

---

[1] Here, utility means the total amount of satisfaction experienced when consuming certain products or services.

The cash-transfer amounts to 72.060 Ugandan shilling (i.e., approximately 56.71 dollar at 2017 PPP[2], and 44.23 euro in the Netherlands in 2017[3]) per person per month. The 72,060 UGX consists of a i) direct transfer, ii) a village fund[4], and iii) remuneration of transaction costs. In the first year, the direct monthly transfer to individuals amounted to 63,000 Ugandan shilling (i.e., 49.60 USD at 2017 PPP[5]). In 2019, the international poverty line[6] in Uganda amounted to 2838.8 Ugandan shilling per day per capita, at 2017 PPP (World Bank, 2022). Thus, the total cash-transfer amounts to approximately 82 percent, and the direct transfer to approximately 73 percent of the 2019 international poverty line.

At the beginning of the project, all 345 residents were registered to receive the cash-transfer. Registration of residents was conducted in collaboration with AFARD and village leaders. During the course of the project, people are removed from the project's register when passing away or when migrating out of the village.

Once a year, on the so-called review date, additional people could be added to the register and included in the cash-transfer program. The maximum number of new people that could be added, firstly depends on the number of spots that opened up due to passing or outward migration. Secondly, INclusion and Welle have a covenant stating that the number of places on the project's register can increase with at maximum 3.6% per year. This percentage is based on the average population growth of Uganda in 2019. Meaning, if in a given year, the project includes 345 participants and 10 beneficiaries move out of the village, at maximum 22 new participants could be added to the register on the next review date. In principle, new places will firstly be filled with newborns from households who are already participating, and persons marrying into those households. If there are still spots available, other new residents may be added. The project started with 345 beneficiaries in the first year and continued with 353 residents in the second year, and with 370 residents in the third year.

The basic income is transferred in the form of mobile money facilitated by MTN. Thus, a phone and SIM-card are needed for receiving the cash-transfer. Beneficiaries are provided with both, feature phones, and SIM-cards by the project. In Uganda, everyone with a national identity card who is at least 16 years old is eligible for a personalized SIM-card. Thus, children below the age of 16 must receive their cash-transfers via the phone of an older family-member. The project

---

[2] Purchasing Power Parity (PPP) is the rate at which the currency of one country would have to be converted into that of another country to buy the same amount of goods and services in each country.

[3] Hereinafter, all amounts mentioned in euros are equivalent to the USD at 2017 PPP.

[4] The village fund is governed by a village committee for joint projects on which villagers must unanimously agree.

[5] 49.60 USD at 2017 PPP is equivalent to receiving approximately 38.70 euro per month in the Netherlands in 2017.

[6] The world bank's international poverty line is a monetary threshold - currently set at 2.15 USD per capita per day - used for indicating whether an individual is living in extreme poverty, or above. This poverty line is based on national poverty thresholds — the value of the goods needed to sustain one adult — and converted into dollars. The 2019 international poverty line is expressed in Purchasing Power Parity at 2017, meaning the poverty line is computed on the basis of 2017 price data from across the world. Measuring the poverty line at PPP allows for poverty comparisons across countries.

chose to transfer the basic income of children under 16 to the phone of their primary female caregiver. Only if these children do not have a female caregiver, their basic income is transferred to the phone of their primary male caregiver. On a monthly basis, changes in telephone numbers, the passing of beneficiaries, and beneficiaries that moved out of the village are communicated via AFARD to INclusion, and then processed. Furthermore, the project provided a village solar panel to enable beneficiaries to charge their phones.[7]

Once a month, after the basic income is received, an MTN-agent is contacted by AFARD to visit the village and to convert mobile money into cash. This monthly visit was incorporated into the program, anticipating that cash is the primary means of payment in the village, and no MTN-agents were operating in the village at the start of the program. The limited use of mobile money is partly due to the limited mobile infrastructure within the particular area where the village is located. Later on in the project, selected village members took over the responsibility of contacting the visiting MTN agent. Alternatively, beneficiaries could visit a stationed MTN-agent at 2.5 km walking distance from the village. To compensate participants for the MTN conversion fee of ±2,060 UGX, INclusion adds 2,060 UGX to the monthly transfers.

A unique feature of this program is the program's village fund. The program's village fund consists of money deducted from all recipients' cash-transfer. Before the cash-transfer to an individual is transferred a pre-specified percentage is deducted from their cash-transfer and put into the village fund. The community can use the money for setting up goods/services that are expected to benefit the whole village. For instance, after the first year, the community used the money to arrange the first borehole of the village, which substantially improved access to clean water.

Another unique feature of the LIFE basic-income program is the project's steering committee, consisting of residents, to guide the project and mobilize its recipients. The members of the committee were elected for one of the following 6 positions for the duration of the project, if they obtained a majority vote for that position: i) chairman (also community chief), ii) vice chair, iii) treasurer, iv) vice treasurer, v) secretary, vi) vice secretary. All but one position - the treasurer position - are filled by male members.

Each year in August, the project's steering committee organizes a village meeting for i) discussing potential future purposes of the village fund, and ii) for determining the percentage of the transfer being directed into the fund in the upcoming year. This percentage must be set within the program's 0% and 25% limit. For village fund investments, first a contract is set up, which states that the steering committee speaks on behalf of the entire village (i.e., has obtained a majority vote in favor of the investment), and all adult beneficiaries have had a chance to vote about the proposed investment. Then, INclusion transfers the money, and the investment can be made. The deducted village fund percentage amounted to 10 percent in the first year, 15 percent in the second year, and 10 percent in the third year.

---

[7] For comparability, Nyakumba received a village solar panel as well.

3 The context of Universal Basic Income & Uganda

The context of this study is two-fold: the context of basic income and the location of implementation. This section will first lay out the context of basic income programs and how the LIFE basic income program compares to other programs. The second subsection will describe the regional context in which the program is implemented.

3.1 Universal Basic Income

Over the last two decades, the idea of universal basic income has regained increasing popularity. Basic income has sparked interest of politicians, community leaders, business leaders, human rights activists, charity organizations and researchers around the globe. To the questions, "what is universal basic income and what purpose does it serve", many different answers are provided. Some, for instance, equate universal basic income with minimum income schemes, whereas others define it as money transfers to members of a pre-specified group. Accordingly, many different implementations of the universal basic income exist.

This subsection starts with discerning the three main purposes of universal basic income from historic implementations. The second subsection provides a description of the different types of features implemented. The last subsection describes how INclusion's LIFE Basic income project compares to other universal basic income projects.

3.1.1 The three primary Basic Income narratives

The three most commonly mentioned purposes of universal basic income include:
1. redistributing natural resource revenues,
2. adjusting to labor-saving technological developments, and
3. improving social protection.

The natural resource revenue objective is built on the conviction that God provided land to all human inhabitants, and all residents should be compensated for common land becoming privately owned by individuals or organizations under property right laws (e.g., the Land Ordinance Act of 1785[8]) introduced by governments (Paine, 1797), or for large scale extractions of resources from this land. An ongoing program based on this objective is the Alaska Permanent Fund (AFP). In this program, the State of Alaska pays all its residents an annual dividend from their oil profits. The dividend payments depend on the fund's net income, costs, and the number of recipients (Feinberg & Kuehn, 2020).

---

[8] After the American Revolution, the newly instated government of the United States introduced The Land Ordinance Act. This act held the premise that all lands were freely alienable (not held by an overlord). Individuals could purchase land, make it productive, and hold title to it.

The second objective is providing a social safety net for citizens negatively affected by major structural changes in the labor market induced by technological developments, such as industrialization, and more recently globalization, automation and robotization. On the one hand, these technological and globalization developments may have major positive impacts on productivity. On the other hand, these developments could drastically change the labor market, by replacing human-labor with capital (or human-labor from abroad), thereby inducing large scale job loss. A system in which the increase in productivity (and corresponding higher wages) is taxed and redistributed via basic income, may reduce tensions caused by the transition.

An example of basic income based on this objective are the negative income tax (NIT) experiments by the US and Canadian Government between 1968 and 1982, after the major automation and robotization developments following WWII (Widerquist, 2005; Burtless, 1986; Robins, 1985; Keeley, 1981; Cain et al, 1974). The negative income tax entailed that all participating families received a cash grant, which was taxed progressively based on the family's income. Meaning the lower a family's income, the higher the cash-grant. Hence, the negative income tax ensured all families had at minimum a certain income.

The third objective is improving social protection in terms of simplifying the administrative process and reach. Many countries have a large number of social assistance programs in place to support the poor (World Bank, ASPIRE Database). However, these social assistance programs are usually decentralized across many layers of government and individual agencies, and therefore usually non-complementary and not streamlined in their administration. Consequently, governments and beneficiaries have to navigate an overwhelming number of social programs and their corresponding administrative bureaucracies, which increases transaction costs and discourages participation. Moreover, such a complex, un-coordinated system is likely to miss some groups of people that are also in need of social protection services. Universal basic income is often posited as a vehicle to dissolve these bureaucracies, by substituting existing programs for pure income support (i.e., an unconditional cash-transfer) and streamlining administration.

For example, the Finnish government explored basic income with the aim to simplify its complex social security system, and to reduce the administrative bureaucracy (Kela, 2020). In India, multiple basic-income proposals and recommendations have been made by Bhardan (2017), Joshi (2016), Banerjee (2016), Ghatak (2016), and Ray (2016); after reports by multiple organizations and economists documented that India's almost universal food-based Public Distribution system was subject to considerable leakages and failed to reach a substantial share of the targeted poor (e.g., Ashok Gulati and Shweta Saini from ICRIER, 2015; Chhibber, 2021, Khera from the University of Delhi, 2011).

3.1.2 The primary three Basic Income features

Following these three objectives, there is a wide range of different features and implementations of basic income programs. The primary three dimensions, along which those programs differ are: targeting, conditionality, and transfer modality. First, basic income could be

targeted to specific groups based on 'needs' (e.g., below a pre-specified poverty line), to specific groups based on 'characteristics' (e.g., elderly, children, women) or to all citizens within a society. Second, basic income could be unconditional, conditional on the use of a particular service (e.g., education, school enrollment/attendance), and conditional on a certain activity (e.g., employment). Third, basic income is provided in different forms: i) in money, ii) in-kind (e.g., in food), iii) in vouchers. Depending on the program's objective, policy makers select a combination of features. For example, the AFP, aimed to redistribute oil revenues among its residents, hence selected unconditional, universal, and cash. The US and Canadian government aimed to provide a minimum income to low-income households, thus selected needs based, unconditional, and cash.

Figure 3.1. The three primary basic income features
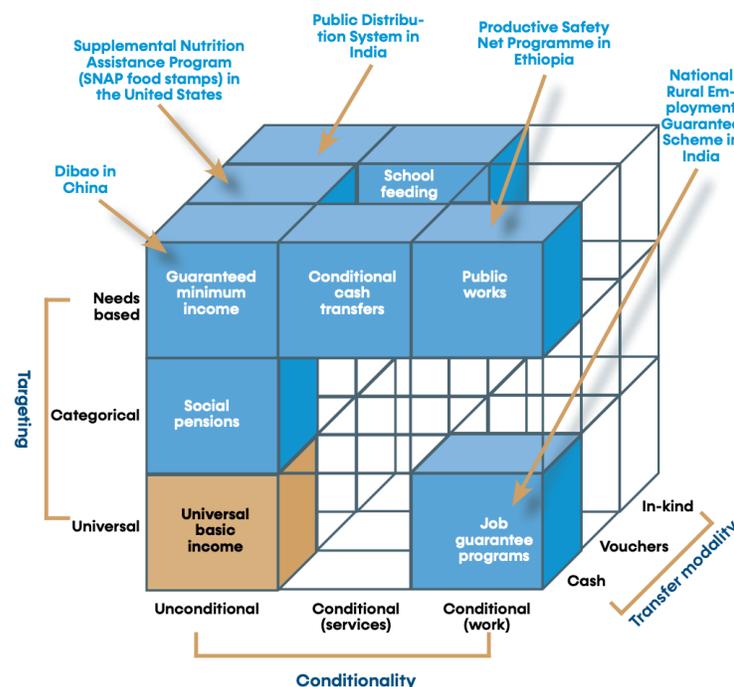
Note. From "The Idea of Universal Basic Income", by Gentili, U., Grosh, M. & Yemtsov, R., in Gentili, U., Grosh, M., Rigolini, J., & Yemtsov, R., *"Exploring Universal Basic Income: A Guide to Navigating Concepts, Evidence and Practices"* (p. 21), 2020, World Bank Group. Creative Commons Attribution CC BY 3.0 IGO.

The height of the basic income is determined differently across basic income grants. In basic income programs conditional on services, such as schooling, the height may be determined based on the service costs (e.g., school fees) (e.g., Duflo, Dupas & Kremer, 2015) or income (e.g., in the Bolsa Familia Programme). Unconditional cash-transfers are often determined based on the region's poverty line. Partial basic income programs provide an amount below the region's poverty line - as in the mentioned pilot in Finland -, whereas full basic income programs provide the full amount. Other programs may add to one's income until he/she reaches a pre-specified level, like in the mentioned negative income tax programs in the United States. Along those lines, the

temporal structure - e.g., monthly transfers versus lump-sum transfers - could differ across programs.

In a large unconditional cash-grant pilot by GiveDirectly in Kenya, the researchers Haushofer & Shapiro (2016) compare the effects of i) a large cash-transfer versus a smaller size cash-transfer, and ii) a monthly cash-transfer pay-out versus a lump-sum cash-transfer pay-out of the same net present value. Haushofer & Shapiro (2016) found a larger positive effect of large cash-transfers relative to the small cash-transfers on asset holdings, consumption, food security, psychological well-being and female empowerment (yet not on revenue, health and education). Furthermore, the monthly transfers resulted in higher food-security, whereas the lump-sum transfer effect was larger on asset holdings. Thus, the cash-transfer size and temporal structure are important program features to consider.

In some cases, basic income is provided in combination with training (e.g., financial literacy or vocational training) or other services. In such programs, there is often a predetermined target group based on characteristics. For example, in Ghana, the basic income was provided to farmers in combination with agricultural insurance (Karlan et al., 2014). In Uganda, ear-marked business grants targeted at women were provided in combination with business training (Blattman et al.; 2015). In the Indian state of Madhya Pradesh, researchers piloted a combination of universal basic income and women's empowerment services, provided by a local institution called Self Employed Women's Association (SEWA) (Davala et al.; 2015). In these examples, the groups targeted included farmers and women respectively. Many more of such examples, with both similar and different categories, exist.

Less commonly, recipient villages establish and maintain additional advice and support systems themselves. The Basic Income Grant (BIG) program[9] Namibia is a unique example, in which the village elected their own committee and 'control-officers', to guide the project and advise their residents on how to spend their cash-transfer (Haarmann et al., 2009). Among its members were local teachers, nurses, police, and business people such as shebeens owners. To minimize the risk that the recipients would spend the majority of their grant on BIG's payday, an agreement was established between the committee and the local shebeen owners to not sell alcohol on the days the BIG was paid out (Haarmann et al., 2009).

3.1.3 How the LIFE Basic Income project compares

INclusion aims to help citizens of a poor rural village in obtaining the autonomy to improve their lives in the way they see fit, by providing them with an additional stable monthly income source and the freedom to spend this additional income however they choose (i.e., maximize their own utility). Following this aim, the LIFE basic income program is i) universal, ii) unconditional, and iii) in cash. Furthermore, the payments are monthly and the payment size is about 73 percent

---

[9] Universal basic income program, in which all residents received an unconditional cash-transfer for 2 years.

of the poverty line. Considering the findings from the above-mentioned Give-Directly study of Haushofer & Shapiro (2016), the LIFE-basic income project is likely to primarily improve beneficiaries' ability to meet their basic needs (e.g., food security), and to a lesser extent improve asset holdings in the short- to medium term.

The LIFE basic income project is unique to existing programs in three ways. First, basic income is provided in the form of both a direct transfer and a program village fund. Second, the project uses a steering committee, consisting of democratically chosen village inhabitants. The final unique feature is that the LIFE basic income for children equals that of adult recipients. More commonly, basic income programs in developing countries solely target adults (e.g., GiveDirectly projects in Kenya) or provide children with a lower amount (e.g., the basic income program in Madhya Pradesh, and BIG-project in Namibia). The first two features will enhance the village's ability to arrange facilities, of which excluding persons from using the facility and reinforcing payment for usage is difficult. The latter feature ensures larger households receive the same amount per capita as smaller households, which may decrease heterogeneity in the effects of the program on e.g., food insecurity, share of kids going to school, and share of kids receiving health care, that could have arisen due to household size.

3.2 Poverty in Uganda

From a universal basic income point of view, Uganda is an interesting country to focus on. First, the country has one of the youngest populations in the world. About 46 percent of its population is aged between 0 and 14 years old in 2019 (World Bank Database, 2023). Hence, the effects of such programs may endure longer. Moreover, the country is very poor, with high rates of food insecurity and high illiteracy rates. The 2019 annual GDP per capita is estimated to be 3,234,417 UGX (current LCU), which equals 2,345 USD at 2017 PPP. The poverty headcount ratio estimates that 42 percent of Uganda's population lives on less than $2.15 a day (2017, PPP) (World Bank Database, 2023). Accordingly, about 73 percent of the population is classified as moderate to severely food insecure (World Bank Database, 2023). Considering education, the primary school enrollment is substantial: approximately 80% of children aged 6 to 12 years are enrolled. Yet the secondary school enrollment rates are much lower: 27% of children aged 13 to 18 years are enrolled (UBOS, 2020). An important reason for persons aged 6 to 24 to leave school is the costs of attending school. Thus, considering that the aim of many universal, unconditional basic income programs is to improve social protection for the poor and provide the poor with more autonomy and freedom to organize their lives, Uganda is an interesting country to focus on.

3.2.1 Poverty in the West-Nile region

Within Uganda, the West-Nile sub-region is an interesting region to focus on for its relatively large size in terms of population and the high poverty rate. West-Nile is the 5th largest out of the 15 sub-regions in Uganda, covering approximately 7 percent of the county's population.

In 2016/2017, the sub-region was the second poorest in the country in terms of the number of people living in absolute poverty[10] (UBOS, 2020). The more recent 2018/2019 UBOS survey data indicates that poverty rates in the sub-region have decreased, yet remain considerable.

Figure 3.1 The West-Nile region and the village of Welle
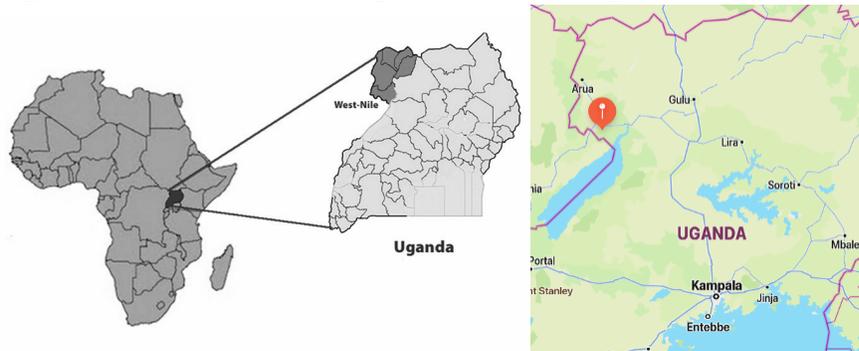
Note. From AFARD and Google maps

3.2.2 Poverty in the village Welle

Welle is in many ways a typical impoverished village in the West-Nile region. Most people work in subsistence farming (i.e., producing for own use and selling at local markets), and burn charcoal for a living. Yet, the village faces some additional challenges. Firstly, the village is located on infertile, rocky soil, making agriculture inefficient and forcing people to rent/buy a plot of land or work on someone else's land in other villages. Moreover, the village is rather isolated. There are few dirt roads leading up to the village, making the village less accessible. The village is located relatively far away from the closest market, banks, schools and clean water sources (i.e., all at minimum one hour by foot). The isolated location, limited access to capital, and infertile soil keeps the people trapped in poverty. From an unconditional basic income point of view, Welle's poverty level and additional challenges to escape poverty make it an interesting village to target.

---

[10] UBOS defines absolute poverty as: *"to live in households which spend less than what is necessary to provide their calorie requirements and a mark-up for non-food needs."*

4 Data

This section contains a description of the survey data collected and the data analyses. The first subsection contains information on the data collection periods and number of participants per survey. The second subsection describes in more detail which information is collected from the participants and what indicators are used for the analysis. The third subsection describes the sample characteristics at baseline, and the final subsection lays out the methods used in the analyses.

Here, it is important to note that in the analyses the data of Welle is compared with another poor village in the region: Nyakumba. The selected control village, Nyakumba, is located in Pakwach-district. Nyakumba was selected as a comparison village, for its compatibility in poverty levels and type of homes. Furthermore, Nyakumba was not participating in any development aid program, and like in Welle, most of the households earn their majority income from subsistence farming. Hence, survey data is both collected in Welle and Nyakumba.

4.1 The Surveys

To date, three surveys have been conducted by AFARD in Welle and Nyakumba. First, a baseline survey was conducted before the LIFE program started (December 2019). In this survey, 201 participants were interviewed on a broad range of topics (see Table 4.1).

A first follow-up survey was carried out approximately and 15 months after the baseline survey (March-April 2021). During this survey, data was collected for 97 cash-transfer recipients in Welle and 104 inhabitants of Nyakumba. In each village, 53 of the survey respondents have participated in both the baseline and midline. Thus, 106 respondents in the first follow-up also have baseline data.

A second follow-up was conducted in December 2022, 3 years after the baseline survey. In this survey, 50 people have been interviewed in Welle and 49 people[11] in Nyakumba. Of the 50 respondents in Welle, 47 have been interviewed in all three surveys. Of the 49 respondents in Nyakumba, 42 have been interviewed in all surveys.

---

[11] One participant is accidentally interviewed twice.

Table 4.1 Number of respondents per village

Village	Baseline *(December 2019)*	Baseline and First Follow-up *(March 2021)*	Baseline and Second Follow-up **(December 2022)**	All three surveys
Welle	97 respondents	53 respondents	50 respondents	47 respondents
Nyakumba	104 respondents	53 respondents	50 respondents	42 respondents

4.2 Sample Characteristics

The next paragraphs summarize the general characteristics of our sample (see also Table 4.1). At baseline, the average age of this study's respondents in Welle is 38 years old. The majority of respondents in Welle are married, in either a monogamous or polygamous marriage. The average household size in Welle consists of 6 persons, including the respondent.

Considering education, the majority of respondents in Welle have not completed primary education. Approximately 11 percent of the respondents in Welle have not had any schooling. 78 percent have completed at least one grade in primary school but have not completed any grade in secondary school. Only 11 percent have completed at least one grade in secondary school. None of the respondents in Welle have completed a grade in tertiary education.

Similar to the rest of West-Nile, subsistence farming is the main income source for the large majority of respondents. Specifically, three quarters of Welle's sample indicates that their main income source is 'farming own land', and most farm in both agricultural seasons (i.e., April-June) and (August-November). The most commonly grown crop type is tubers[12], followed by pulses[13]. A substantial share of the cultivating respondents indicates to grow only one type of crop[14] in the April-June season (i.e., 44%) and in the August-November season (i.e., 54%).

Most of the respondents in Welle live in poverty or in near poverty. To obtain a general idea on poverty within Welle, we consider different levels of food consumption and total consumption. First, the average value of household consumption of food in the week before the baseline-interview amounts to 102,838 Ugandan shilling[15] (i.e., approximately 81 USD at 2017

---

[12] 60 percent of the sample that cultivates crops in the April-June season and 82 percent of the sample that cultivates crops in the August-November season grows tubers.

[13] 35 percent of the sample that cultivates crops in the April-June season and 11 percent of the sample that cultivates crops in the August-November season grows pulses.

[14] The following crop types are included in the survey: maize, wheat and other grains, tubers, vegetables, pulses, fruits, sugarcane, tobacco, and other crops.

[15] Note that people generally have difficulty with accurately estimating the value of their household consumption, hence some noise in the consumption data may be expected.

PPP[16]). When dividing this number by the number of household members, the average food consumption per capita becomes 21,256 UGX (16.73 USD at 2017 PPP, or 13 euros in the Netherlands in 2017) for the above-mentioned week.

The consumption of other non-food items in the month before the baseline-survey amounts to 131,297 Ugandan shilling per month. When dividing this number by the number of household members, the average value for other consumption per capita becomes 28,607 UGX (22.51 USD at 2017 PPP) for the above-mentioned month.

The average total consumption per capita per day, based on a calculation of the latter values[17], equals 3,977 UGX (i.e., 3.13 USD at 2017 PPP). This number is just above the 2019 international poverty line of 2,838.8 Ugandan shilling per day per capita (2.15 USD at 2017 PPP). Yet, the distribution of total consumption per capita is skewed to the right. When looking closer at the distribution, 55 percent of the respondents in Welle had a total consumption per capita value of below the 2019 international poverty line. Approximately 66 percent had a total per capita consumption of below 1.25 times this poverty line. The reported consumption values suggest that the large majority of the respondents in Welle lives in poverty or in near poverty.

The respondents in Welle are quite similar to respondents in Nyakumba in terms of demographic characteristics. However, at first glance, Nyakumba appears to be poorer than Welle. Specifically, the two groups of respondents appear to be similar in terms of average age, average household size, average highest completed education level, and main type of income source (i.e., farming) (see Table 4.2). Yet, considering poverty, the baseline consumption levels in Nyakumba are lower than in Welle, and slightly fewer respondents in Nyakumba indicate that their household owns land other than on which they are living.

---

[16] Equivalent to 63 euro in the Netherlands in 2017.

[17] Total consumption per capita per day = (household food consumption / household members)/ 7 days + (household tobacco and alcohol consumption / household members)/ 7 day + (household other consumption / household members) *12 months / 365 days.

Table 4.1 Sample characteristics

	Welle					**Nyakumba**					**Difference**		
	N	**Mean**	**SD**	**Min**	**Max**	**N**	**Mean**	**SD**	**Min**	**Max**	**Diff.**	**SE**	**P-value**
Demographics													
Age	47	38,34	14,59	18	79	42	43.43	14.61	20	76	5.08	3.10	0.10
Married	47	0.72	0.45	0	1	42	0.48	0.51	0	1	-0.25	0.10	0.02
Household size	47	5.57	2.41	2	11	42	6.26	2.71	1	12	0.69	0.54	0.21
Highest Education	47	4.51	2.77	0	11	42	4.02	3.60	0	12	-0.49	0.68	0.47
Consumption & Assets													
Consumption Food per capita	47	21,003	26,305	1,863	156,800	42	7,635	8,233	3,909	29,925	-13,368	4235	0.00
Consumption Other per capita	47	28,606	32,368	1675	147,000	42	19,169	43,584	500	273,000	-9437	8083	0.25
Owns land	47	0.75	0.44	0	1	42	0.40	0.50	0	1	-0.34	0.10	0.00
Rents land	47	0.55	0.50	0	1	42	0.29	0.46	0	1	-0.27	0.10	0.01
Main Income source													
Farming own land	47	0.74	0.44	0	1	36	0.81	0.40	0	1	0.06	0.09	0.52
Own business	47	0.06	0.25	0	1	36	0.06	0.23	0	1	-0.01	0.05	0.88
Casual labor	47	0.17	0.38	0	1	36	0.03	0.17	0	1	-0.14	0.07	0.04

Note: The unit of age is years. Married equals one if the respondent is in a monogamous or polygamous marriage, and equals zero if he/she is single, separated, divorced or widowed. Household size is the number of individuals who have spent at least 1 month out of the last 12 living in the same house/structure and ate out of the same kitchen, including those now deceased and the respondent him/herself. Education equals 0 if the respondent had no schooling, 1-7 if the last completed level was the first-seventh class in primary school respondent respectively, 8-11 if the last completed level was the first to fourth class in secondary school, and 12 if the last completed level was in a tertiary institution. Food consumption is the 'row total' of the following categories: i) Cereals, ii) Roots and tubers, iii) Pulses, iv) Vegetables, v) Meat, vi) Fish, vii) Dairy and eggs, viii) Other animal products, ix) Oil and fat, x) Fruit, xi) Sugars, xii) Jam and sweets, xiii) Nonalcoholic drinks, xiv) Spices, xv) Prepared foods, xvi) Other food. Consumption Food per capita is household consumption in the week prior to the baseline survey divided by the number of household members. Other consumption is he 'row total' of the following categories: i) airtime, internet, and other phone expenses, ii) travel, transport and hotel costs, iii) lottery tickets, iv) clothing and shoes, v) costs related to recreation and entertainment, vi) personal items, vii) household items, viii) firewood, kerosene and charcoal, iix) electricity, ix) water, x)

houserent, xi) expenses for home repair or expanding the home, xii) religious expenses, xiii) charitable donations, xiv) weddings and funerals, xv) school fees, school uniforms, books and other supplies, xvi) medical expenses, xvii) household durables, xviii) bride price, xiv) other expenses. Consumption Other per capita is household consumption in the month prior to the baseline survey divided by the number of household members. Owns land, rents land, farming own land, own business and casual labor equal 1 if the household owns land, the household rents land, the respondent's main income source is farming, the respondent's main income source is non-agricultural business revenues, the respondent's main income source is from casual labor, respectively. These variables equal 0 if otherwise.

5 Welle since the LIFE basic income project

This section describes the developments in Welle from the baseline to half-way into the 7-year program in the following areas: food insecurity, health, emotional well-being, consumption, assets, education and aspirations. We first compare the survey data of Welle over time and then to temporal changes in the control village, so as to assess step by step, for each area, the extent to which improvements are likely to exist and are likely to be attributable to the LIFE basic income program.

At baseline, many respondents from Welle are trapped in poverty, and are consequently experiencing considerable stress. Residents of Welle are especially worried about i) health and illness, ii) not having sufficient money for basic needs, iii) not having sufficient money for medicine, and iv) not having sufficient money for living expenses (see Figure 5.1). To a somewhat lesser, yet still considerable extent, respondents are worried about poor harvest due to adverse weather conditions, and insufficient land for production. Considering farming and/or burning charcoal is the main income source for many, and climate change is becoming more tangible in the region, climbing out of poverty becomes increasingly difficult.

Figure 5.1 At baseline, the majority of recipients worry about not meeting basic needs.
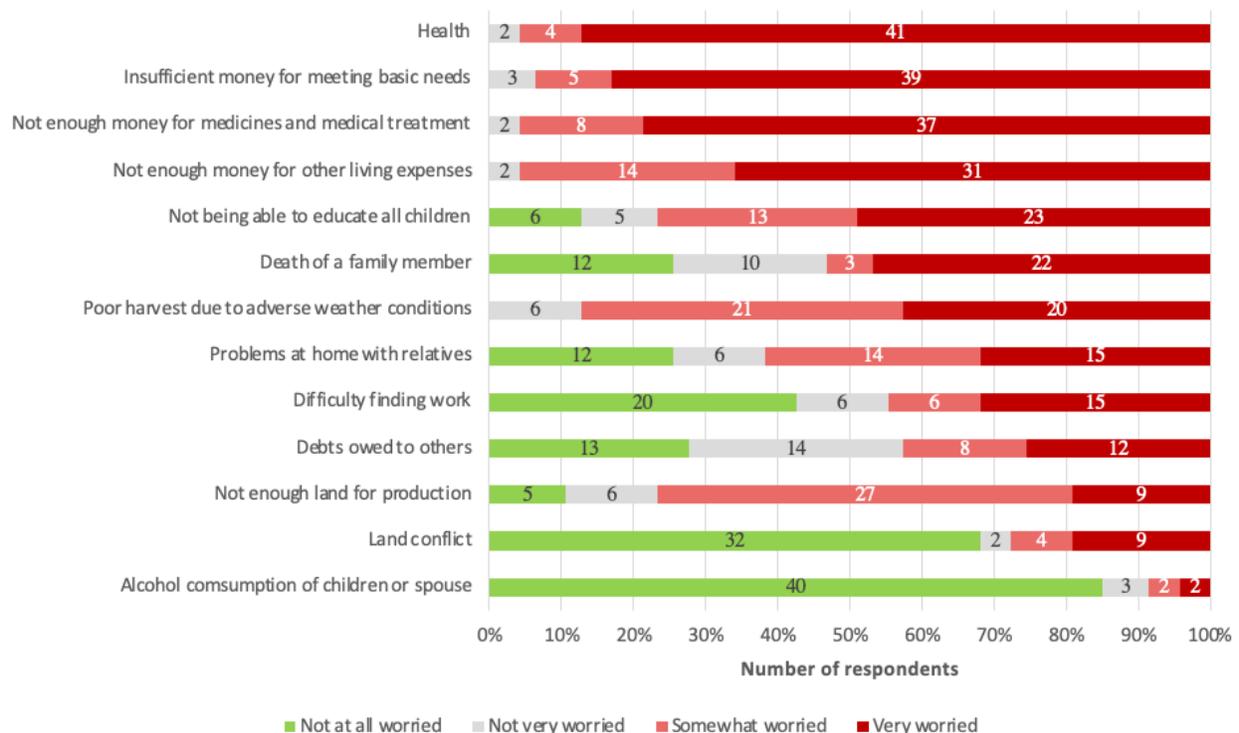
Note: Answers provided by the respondents from Welle who participated in all three surveys (N_Welle=47).

The LIFE basic income addresses Welle's inhabitants' main concerns of having insufficient money for basic necessities and health, by providing a considerable and stable income source for individuals, and an investment fund for village development. The categories on which most respondents from Welle indicate to spend their basic income are in accordance with the issues most of them indicate to worry about. In both follow-up surveys, most people have indicated to spend the cash-transfer on food and health items (see Figure 5.2). Housing appears to be the most important asset category for which the cash-transfer is used.

Figure 5.2 The majority of recipients spends the cash-transfers on food and health items.
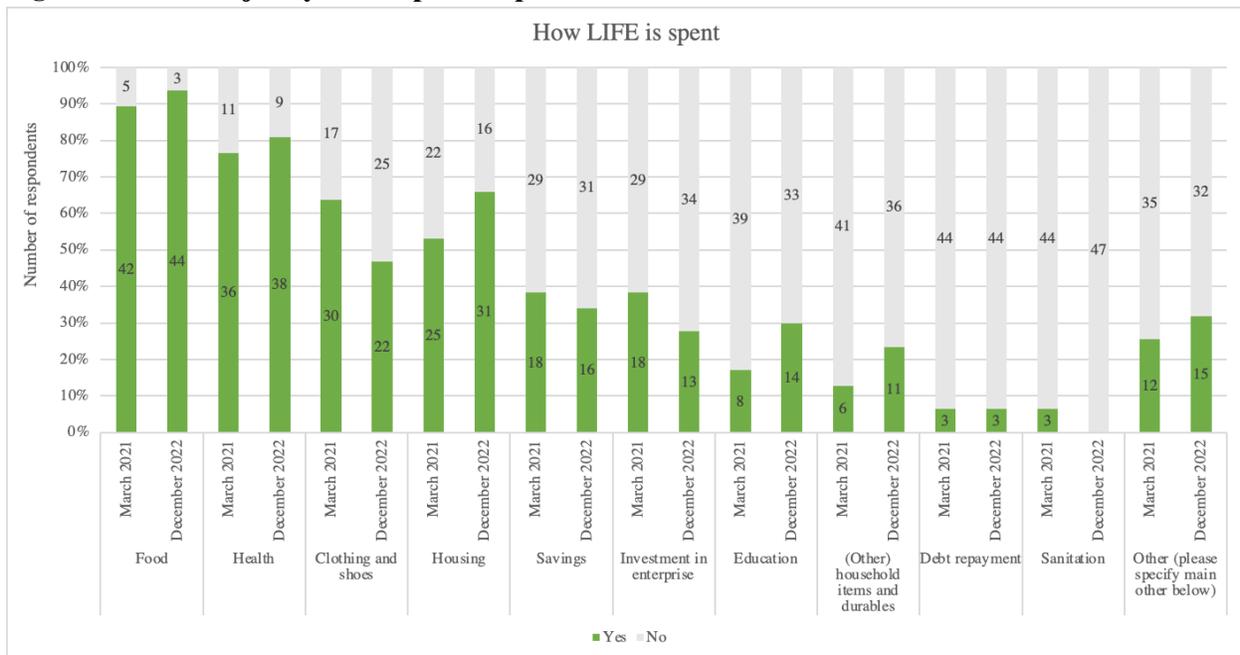
Note: Answers provided by the respondents from Welle who participated in all three surveys (N_{Welle}=47).

In the next subsections, developments in those indicated addressed key areas - food, health, education, housing and assets, and emotional wellbeing - are discussed for the period December 2019 - December 2022. Every subsection starts with a comparison of the average baseline score in the outcome variable with its corresponding follow-up scores for respondents of Welle. Next, the average temporal changes in the outcome variable are compared across villages.

5.1 Food and Water Security

The large majority of respondents from Welle indicated to be very worried about having insufficient money for basic needs, and to use the LIFE basic income for food. To investigate whether food insecurity decreased, we consider three outcome variables: food consumption, an index for food insecurity, and access to clean water. All three indicators appear to have improved for respondents in Welle over time.

5.1.1 Access to food

About half a year into the LIFE-Basic program, the average weekly[18] food consumption (in UGX) appears to be unchanged (see Figure 5.3 and Table 5.1). Yet, over the same period, food consumption in Nyakumba appears to have decreased substantially (see Figure 5.3 and Table 5.2). This decline is not surprising, since by March 2021 the Ugandan government had taken stringent measures to limit the spread of COVID-19: such as public transport and boda-boda transport restrictions, and public gathering restrictions (WHO, 2023). Assuming Welle and Nyakumba would have been on a similar trend in the absence of LIFE basic income, the basic income has helped beneficiaries to maintain their level of food consumption, despite COVID-19.

Over the long haul, food consumption has substantially increased in Welle. For the average person, food consumption increased with 41,817 UGX (see Table 5.2). In Nyakumba, food consumption also increased substantially, yet less than in Welle (see Table 5.3). Although the statistical test indicates this temporal change is not statistically significantly larger than in Welle, the size of this difference with Nyakumba is still considerable. In short, the results suggest that food consumption in UGX increased over time.

The found increase in food expenditures could be due to the purchase of more food products or an increase in food prices. Therefore, we consider an additional index for food insecurity based on whether both adults and children in the household skipped meals, ate less than 2 meals a day, had experienced days without any meal, and went to bed hungry. The higher the score, the higher the food insecurity.

The development of this food insecurity index score indicates that the food insecurity has declined in Welle. At baseline, food insecurity was considerable; on average 3 out of the 7 survey questions[19] underlying the index were answered in favor of food insecurity. The large decline in food insecurity (see Figure 5.4 and Table 5.3) is consistent with the findings that most respondents in Welle spend LIFE basic income on food, and the value of food consumption increased. When comparing the temporal development of food insecurity across villages, it can also be seen that food insecurity declined faster in Welle (Table 5.4).

---

[18] Food consumption was inquired for the week before the corresponding survey.
[19] For the exact questions underlying this index, see Appendix 8.1.1.

Figure 5.3 Average weekly food consumption over time
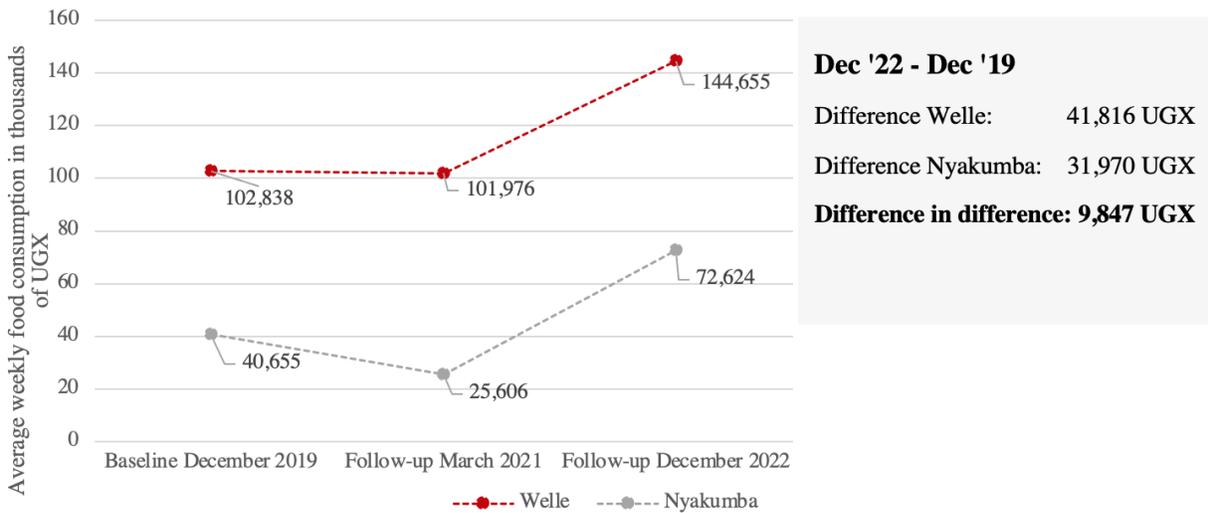
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). The grey horizontal stripes represent the 90% confidence interval. Food consumption is the 'row total' of the following categories: i) Cereals, ii) Roots and tubers, iii) Pulses, iv) Vegetables, v) Meat, vi) Fish, vii) Dairy and eggs, viii) Other animal products, ix) Oil and fat, x) Fruit, xi) Sugars, xii) Jam and sweets, xiii) Nonalcoholic drinks, x iv) Spices, x v) Prepared foods, xvi) Other food. The difference in difference is calculated as follows: ($FC_{Welle, follow-up}$ - $FC_{Welle, baseline}$) - ($FC_{Nyakumba, follow-up}$ - $FC_{Nyakumba, baseline}$).

Figure 5.4 Food insecurity over time
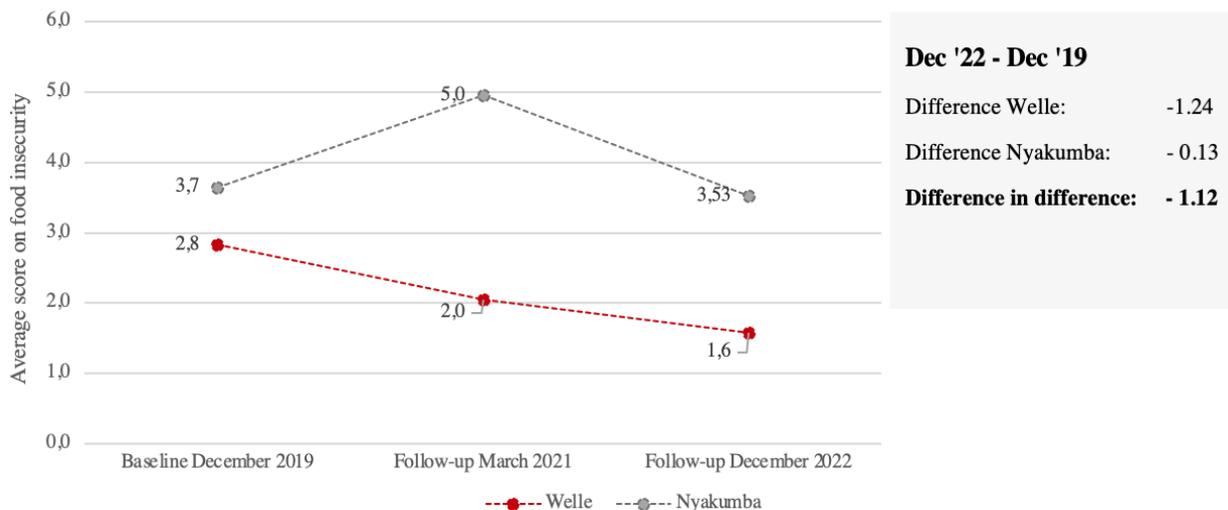
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=41 in and $N_{Nyakumba}$= 40). For the construction of the index, see appendix 8.1.1. The minimum score is 0 and the maximum score is 7. The higher the score, the higher food insecurity. The difference in difference is calculated as follows: ($FS_{Welle, follow-up}$ - $FS_{Welle, baseline}$) - ($FS_{Nyakumba, follow-up}$ - $FS_{Nyakumba, baseline}$).

5.1.3 Access to clean water

At baseline, access to clean drinking water was limited. Almost all the respondent's households in Welle fetched their drink- and cooking water from a river or seasonal stream. None of the respondents' households treated their water - e.g., boiling, filtering, or using chlorinate - before use. The far majority took more than an hour (85 percent) to travel to their water source, fetch water, and return to their home. A considerable 40 percent took more than 2 hours. In the interviews (May, 2021) the villagers indicate that fetching water took a substantial part of their day.

The village decided to invest the money accumulated in the program's village fund in a borehole. It's now the only nearby clean water source. At the time of the third survey, the borehole is widely used. In the second-follow up survey, all respondents indicate to use the borehole. Specifically, about 86 percent indicates that their household fetches more than half of their drinking and cooking water from the borehole. The same share also indicates that it now takes their household less than an hour to fetch water. Hence, the sampled households spend much less time fetching water than before.

Figure 5.5 The village fund borehole

Source: INclusion, taken in Welle in May 2022.

5.2 Health

Health appears as the number one issue the respondents worry about. Nearly all respondents have indicated to be very worried about the occurrence of health problems and illness, and most indicate to direct their basic income towards health-related products and services. To obtain an insight into whether and how the basic income may have helped respondents from Welle to reduce and overcome health problems, we consider temporal changes in the following variables: household consumption of medicine, the vaccination rate among children aged under 14, the share of household members under 14 who visited a doctor in the last 12 months, and days missed from school/work by the respondent.

5.2.1. Household medical expenses, and vaccinations and doctor visits among children under the age of 14

In Welle, monthly medical expenditures seem to have increased over time. In both the baseline and second follow-up survey, respondents were asked how much Ugandan shilling their household spent on medicines and medical services in the 30 days prior to the respective survey interview. Among the respondents in Welle, the average household saw an increase of 16,509 UGX (13 USD, at 2017 PPP) in medical expenditures (see Table 5.6), which equals about 23 percent of one member's total LIFE basic income transfer.

In Nyakumba, however, medical expenditures grew faster (see Figure 5.6 and Table 5.6). Potential explanations include i) fewer household members getting ill in Welle relative to Nyakumba, ii) less costly health problems were experienced in Welle, or/and iii) persons in Welle were faced with lower prices. To explore these potential explanations, we look into the share of household members aged under 14 that were i) vaccinated and ii) visited a doctor in the 6 months prior to the survey, and in the next subsection into the number of days of school/work missed due to illness.

Among respondents with household members under the age of 14 in both surveys, the share of children being vaccinated decreased for both villages. At baseline, almost all respondents indicate that all of their household members under 14 are vaccinated (see Figure 5.7). Remarkably, in the second follow-up survey, this average share halved in Welle and more than halved in Nyakumba. What caused this large decline is unclear.

Figure 5.6 Medical expenditures over time
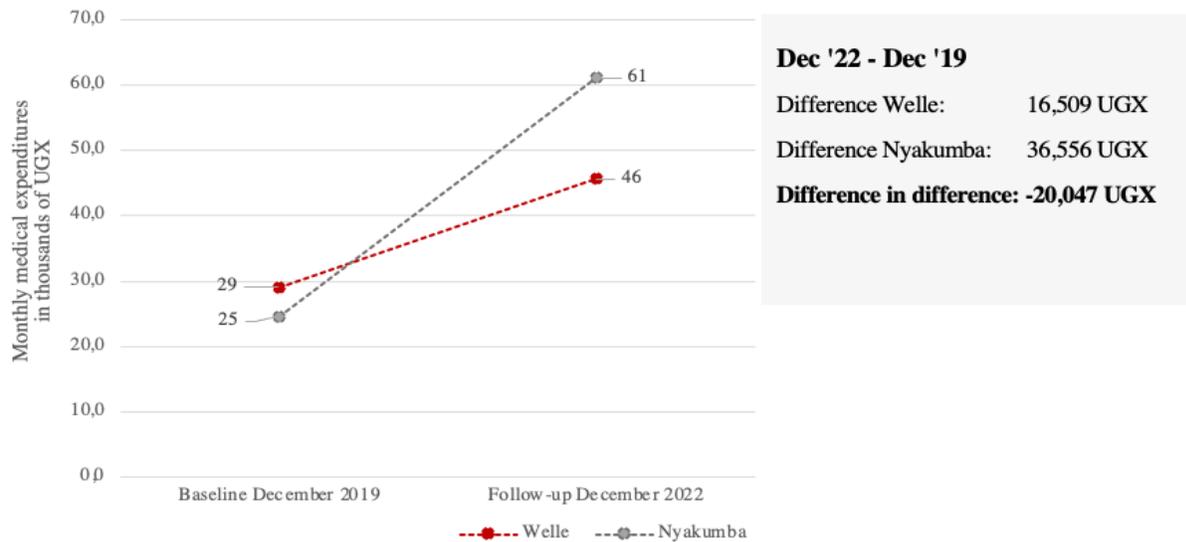
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey (N_{Welle}=46 in and $N_{Nyakumba}$= 41). Medical expenditures include consultation fees, medicines, hospital costs, lab test costs, ambulance costs, and related transport. The difference in difference is calculated as follows: ($ME_{Welle, follow-up}$ - $ME_{Welle, baseline}$) - ($ME_{Nyakumba, follow-up}$ - $ME_{Nyakumba, baseline}$).

Figure 5.7 The share of vaccinated children aged under 14 years and living in households of respondents at the time of the survey
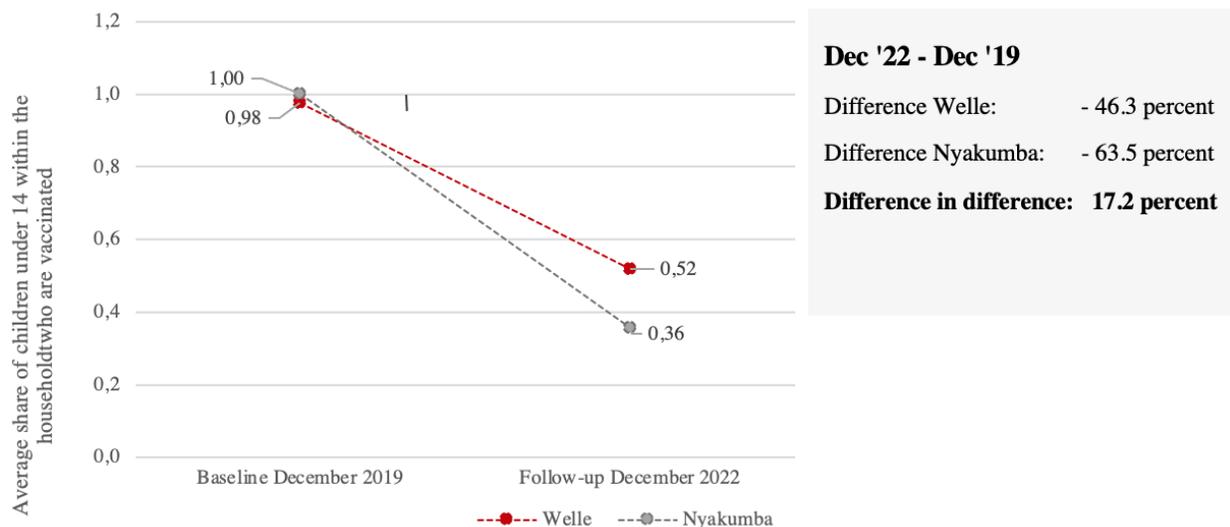
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey (N_{Welle}=33 in and $N_{Nyakumba}$= 31). The included respondents had both a value for the baseline and second follow-up (i.e., children under 14 living within their households at both points in time). The difference in difference is calculated as follows: ($V_{Welle, follow-up}$ - $V_{Welle, baseline}$) - ($V_{Nyakumba, follow-up}$ - $V_{Nyakumba, baseline}$).

Among those same respondents, the share of household members under 14 that visited a doctor in the 6 months prior to the survey, however, increased. At baseline, almost all respondents from Welle indicate that none of their household members aged under 14 visited a doctor (see Figure 5.8). Yet, this average share increased to 20 percent in the second follow-up, whereas in Nyakumba, the average share remains close to zero.

Figure 5.8 The share of children that have visited a doctor
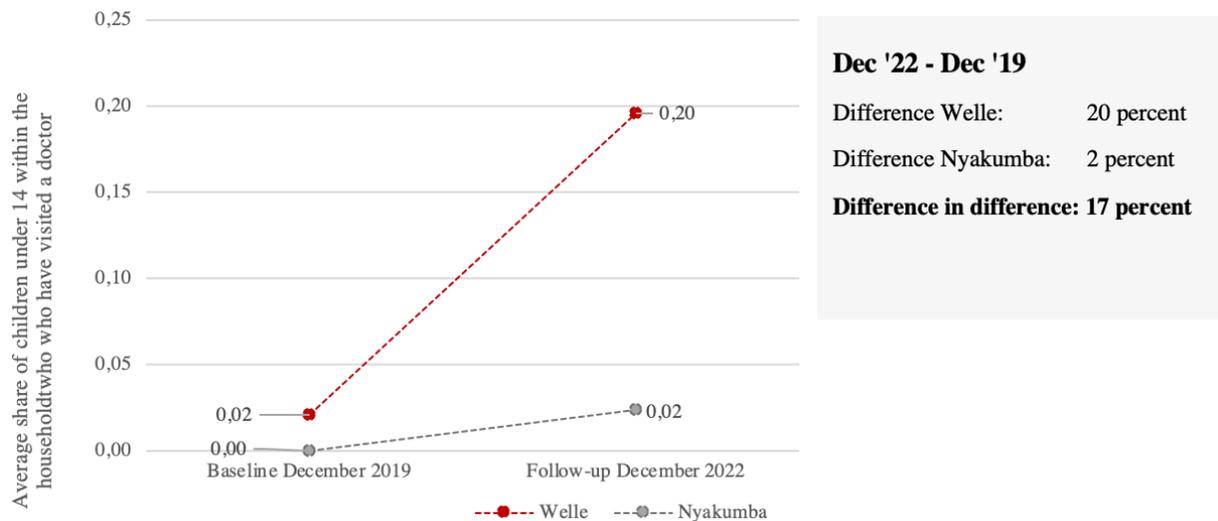
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey (N_{Welle}=33 in and $N_{Nyakumba}$= 31). The included respondents had both a value for the baseline and second follow-up (i.e., children under 14 living within their households at both points in time). The difference in difference is calculated as follows: ($VD_{Welle, follow-up}$ - $VD_{Welle, baseline}$) - ($VD_{Nyakumba, follow-up}$ - $VD_{Nyakumba, baseline}$).

5.2.2. Days missed from work/school due to illness

Among respondents from Welle, much fewer indicated to be ill in four weeks prior to the second follow-up than in the four weeks prior to the baseline survey. In the four weeks prior to the baseline, 36 of the respondents in Welle were sick or suffered from an illness. Among those, most respondents indicated to suffer from fever and malaria, and headaches. In the four weeks prior to the second follow-up, only 18 respondents were ill or experienced an illness. The most often self-reported health problems remained fever and malaria. In Nyakumba, the number of respondents reported having been ill also declined substantially (i.e., from 36 to 13 persons), yet the most commonly reported illness differed (i.e., illnesses located in the lower respiratory tract). Within respondents' whole households, the temporal decline in the total number of household members (including the respondent) being ill does not seem to differ across villages neither. In both villages, the average number of household members being ill declined from roughly 3 members to 1 member.

Furthermore, fewer days were missed from work or school by respondents from Welle due to illness relative to December 2019. At baseline, the average number of days missed from school/work by respondents from Welle amounted to 11 out of the 28 days prior to the survey, which is about 40% of the concerned period. Such a high rate of days missed could critically limit household earnings and could be very costly for the household. Hence, it is not surprising that the number one issue respondents worry about is health related. From the baseline to the second follow-up survey, the number of days missed by the average person from Welle due to illness declined substantially (Table 5.7). The decline in Welle appears to be considerably larger than in Nyakumba as well (see Figure 5.9 and Table 5.8).

Figure 5.9 The number of days respondents missed from work/school due to illness
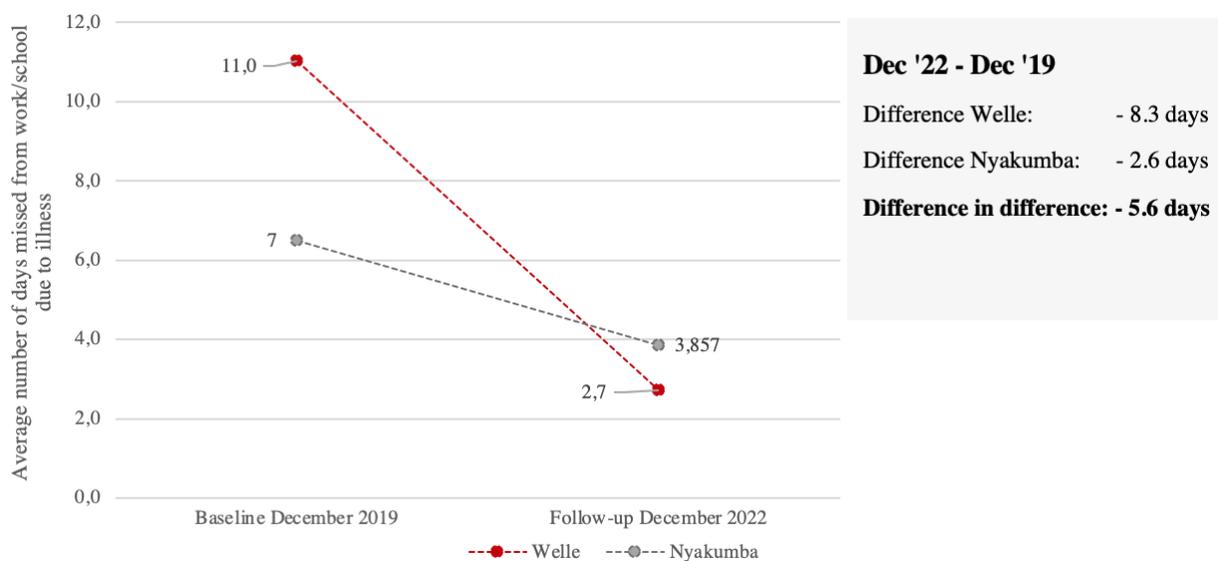
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey ($N_{Welle}=47$ in and $N_{Nyakumba}= 42$). The difference in difference is calculated as follows: ($DM_{Welle,\ follow-up}$ - $DM_{Welle,\ baseline}$) - ($DM_{Nyakumba,\ follow-up}$ - $DM_{Nyakumba,\ baseline}$).

In summary, Welle appears to be in a better place compared to the baseline, in terms of health. The number of persons being ill and the number of days missed at work/school by respondents due to illness have substantially declined. Furthermore, more children aged under 14 years have visited a doctor within the 6 months prior to the second follow-up relative to the same period prior to the baseline. Finally, medical expenditures have increased considerably. Yet, the reason for this increase is unclear. Persons in Welle may be better able to afford medicines and medical services due to the basic income, yet another explanation is well possible considering Nyakumba also experienced a considerable increase.

5.3 Education

On average, the number of respondents from Welle worried to a lesser extent about not being able to send all children to school than for instance health problems and meeting basic needs at baseline. Yet, the number of respondents who are somewhat to very worried about not being able to send all children to school is still considerable. Accordingly, a much smaller share of the respondents indicates to spend their LIFE basic income on education. This may be due to the household spending less on education, or because households use the transfers labeled in the name of their children for education. This subsection will address developments in households' school expenditures and school attendance.

5.3.1 School expenditures

At baseline school expenditures were relatively low. In December 2019, the average amount spent on education in the month prior to the baseline survey amounted to 16,800 UGX (i.e., 13.22 USD at 2017 PPP) in Welle (see Figure 5.10 and Table 5.9). To put this number into perspective, the average total household expenditures on primary education[20] in the West-Nile region amounts to 245,000 UGX per year (i.e., 193 USD at 2017 PPP), hence 21,166 UGX per month (i.e., 17 USD at 2017 PPP) according to the UBOS 2019/2020 report (UBOS, 2020).

On average, school expenditures made by the respondents' households in the month prior to the respective survey appears to have increased substantially from baseline to the second follow-up. For the average person in Welle, school expenditures increased with 80,625 UGX (i.e., 63.45 USD at 2017 PPP) (see Table 5.10). This increase is, however, somewhat smaller than in Nyakumba (see Table 5.10). The larger increase in Nyakumba is not very surprising, considering that a primary school is located within that village, whereas there is no school located within Welle. The observed increases in school expenditures may be due to an increased number of children being sent to school in 2022/2023 or a minor difference in survey timing[21]. The first potential explanation is discussed in subsection 5.3.2.

[20] This (annual) amount includes school fees (i.e., 146,000 UGX), school registration (i.e., 12,000 UGX), examination fees (i.e., 21,000 UGX), and the costs of the school uniforms, books and transport.

[21] The baseline survey is timed a few days earlier in the month of December than the second follow-up survey. If school fees are due in mid-December, the timing may also explain the substantial increase in school expenditures.

Figure 5.10 Monthly school expenditures over time
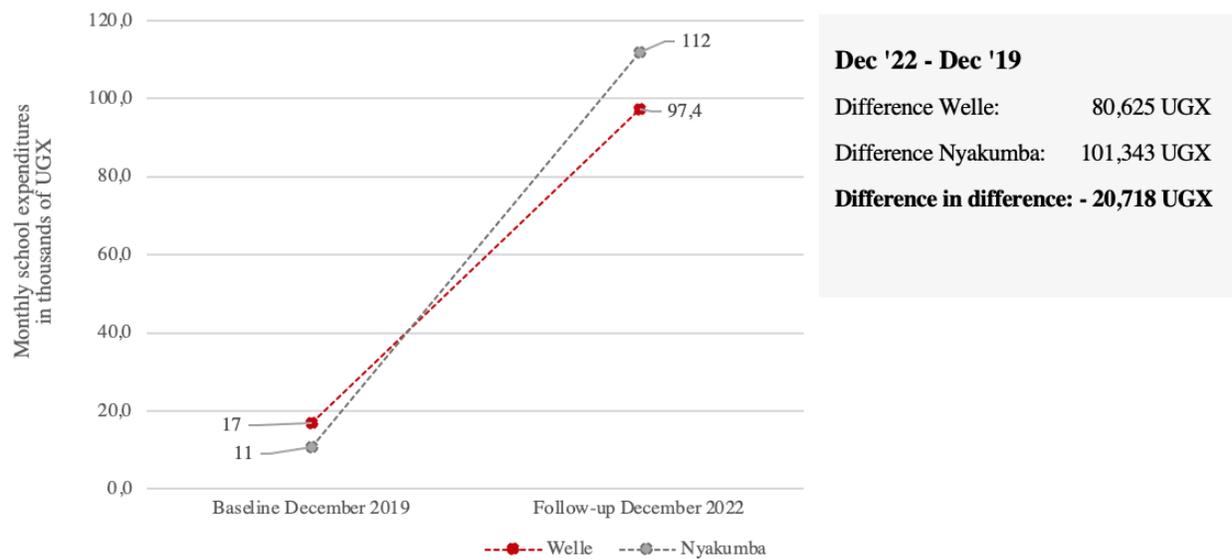
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey (N_{Welle}=40 in and $N_{Nyakumba}$= 35). The included respondents had both a value for the baseline and second follow-up (i.e., households with persons aged 6 to 25 at both points in time). In the surveys, school expenditures include school/college fees and the costs of school uniforms, books and other supplies. The difference in difference is calculated as follows: ($SE_{Welle, follow-up}$ - $SE_{Welle, baseline}$) - ($SE_{Nyakumba, follow-up}$ - $SE_{Nyakumba, baseline}$).

5.3.2 School attendance

School attendance was rather low over the period December 2019 to December 2022. Among the respondents who had household members aged 4 to 25 years old during both surveys, on average sixty percent of those members attended school in the ongoing school term at time of the baseline survey (see Figure 5.11a and Table 5.11). Almost all who attended, were enrolled in primary school[22]. From the two household members aged 4 to 25, who completed a grade in secondary school, none were attending school during the, at the time, most recent school term due to either illness or pregnancy. In Nyakumba, the baseline shares of household members attending school were rather similar to Welle. Also, few (i.e., seven) persons aged 4 to 25 completed a grade in secondary school, and only one of them was attending tertiary education. The one and only reason mentioned for not attending school in Nyakumba was *'cannot pay fees'*.

---

[22] Only two household members - from different households - completed a grade in secondary school at time of the baseline.

**Figure 5.11a School attendance among household members aged 4-25 years over time.**
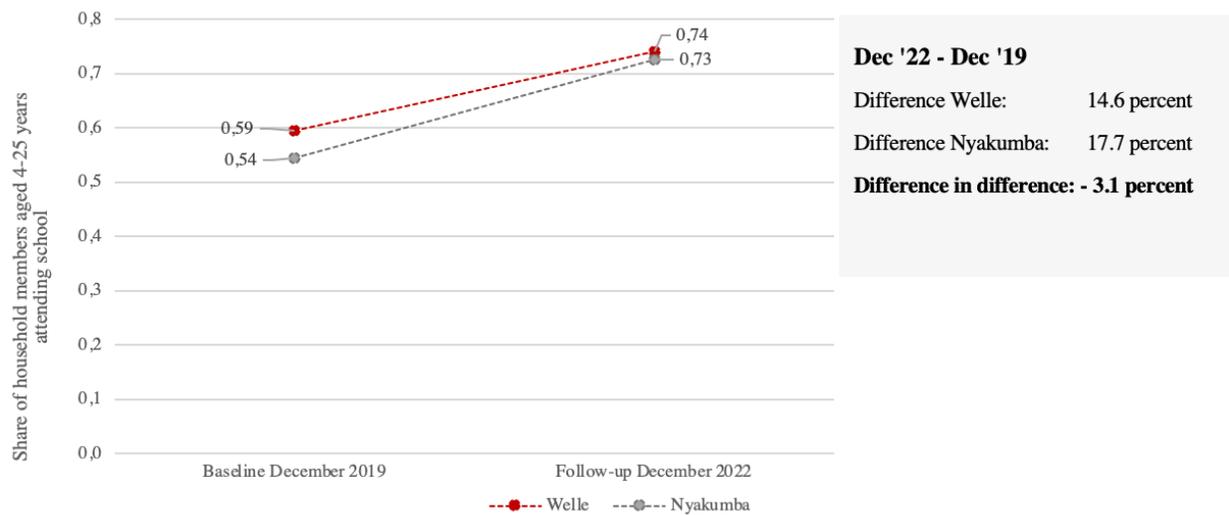
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey (N_{Welle}=40 in and $N_{Nyakumba}$= 35). The included respondents had both a value for the baseline and second follow-up (i.e., households with persons aged 4 to 25 at both points in time). The difference in difference is calculated as follows: ($SA_{Welle, follow-up}$ - $SA_{Welle, baseline}$) - ($SA_{Nyakumba, follow-up}$ - $SA_{Nyakumba, baseline}$).

Figure 5.11b School attendance among household members aged 4-13 years over time.
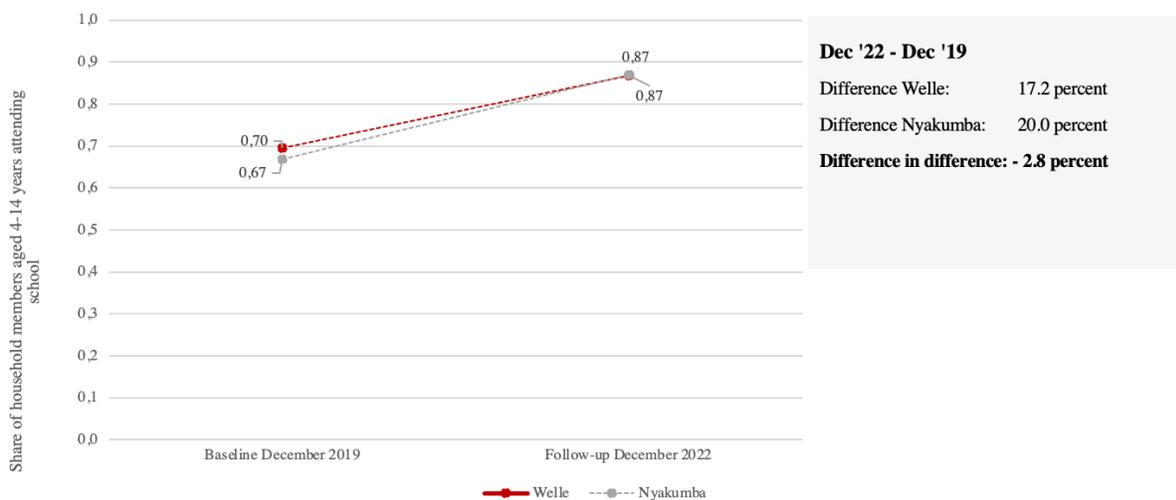
Note: Answers provided by the respondents who participated in the baseline and second follow-up survey (N_{Welle}=38 in and $N_{Nyakumba}$= 33). The included respondents had both a value for the baseline and second follow-up (i.e., households with persons aged 4 to 13 at both points in time). The difference in difference is calculated as follows: ($SA_{Welle, follow-up}$ - $SA_{Welle, baseline}$) - ($SA_{Nyakumba, follow-up}$ - $SA_{Nyakumba, baseline}$).

At the time of the follow-up and approximately half a year after the schools opened again after the pandemic, school attendance in Welle increased to about 75 percent among respondents' household members aged 4-25, and to about 87 percent among household members aged 4-13.

These increases in school attendance are slightly lower than in Nyakumba (see Table 5.12). Yet, considering that in Nyakumba, a school is located within the village, whereas no school is located within Welle, this finding may not be surprising.

Summarizing, the respondents' households seem to be doing better in terms of education, as the share of household members aged 4 to 25 (and aged 4 to 13) attending school increased. Respondents also seem to be directing more money towards education. However, the increase in the number of persons attending school does not seem to be associated with the increase in school expenditures[23], hence does not seem to explain the earlier found increased school expenditures on education. Multiple reasons for this increase remain: for example, increased purchases made per member attending school, higher prices, or the minor difference in timing of the surveys.

---

[23] *The correlation is estimated to be 0.0756, meaning the two indicators do not seem to be correlated.*

5.4 Assets

5.4.1. Housing

A substantial number of respondents in Welle have indicated to use the LIFE-basic income for housing. When considering building activity for the purpose of housing, we indeed see that the large majority of respondents in Welle have established new buildings (Figure 5.12). Whereas in Nyakumba, only traditional houses[24] were established, a considerable share of respondents in Welle established semi-permanent homes[25]. Specifically, out of the 30 respondents in Welle who built new buildings, 13 have built the walls from brick and 2 have placed an iron sheet roof. Only 2 respondents have replaced the roof of their already existing buildings with an iron sheet roof. Semi-permanent homes are usually preferred, as these are more durable. A grass roof needs to be replaced every 1-2 years. Such replacement requires physical strength, making sufficient maintenance especially challenging for the elderly and the physically weaker population. Yet, to build a semi-permanent home, one needs more capital upfront to pay for the more expensive bricks and iron sheets.

Figure 5.12 The number of respondents who have started to build more buildings for housing
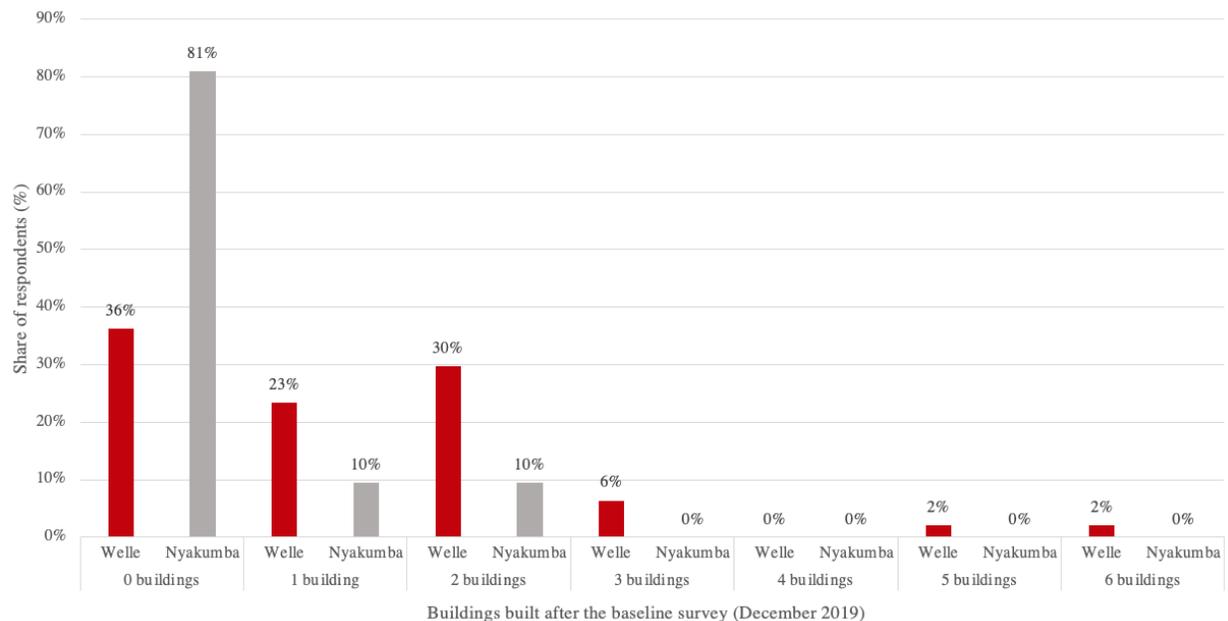
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). Source: Second follow-up survey (December 2022).

---

[24] Traditional houses consist of clay walls and grass roofs.
[25] Semi-permanent homes consist of brick walls and iron sheet roofs.

Only a handful of respondents in Welle bought extra land for living on. Of the 15 people who indicate to have bought land since the baseline survey up to the third survey, only 4 indicated that the purpose of this land was for living on (see Figure 5.13). Out of those 4, only one respondent had indicated in the baseline survey that his/her household did not own the land they lived on. In Nyakumba, none of the respondents indicated to have bought land for the purpose of living on.

Figure 5.13 The number of respondents whose household bought land for living between December 2019 and December '22.
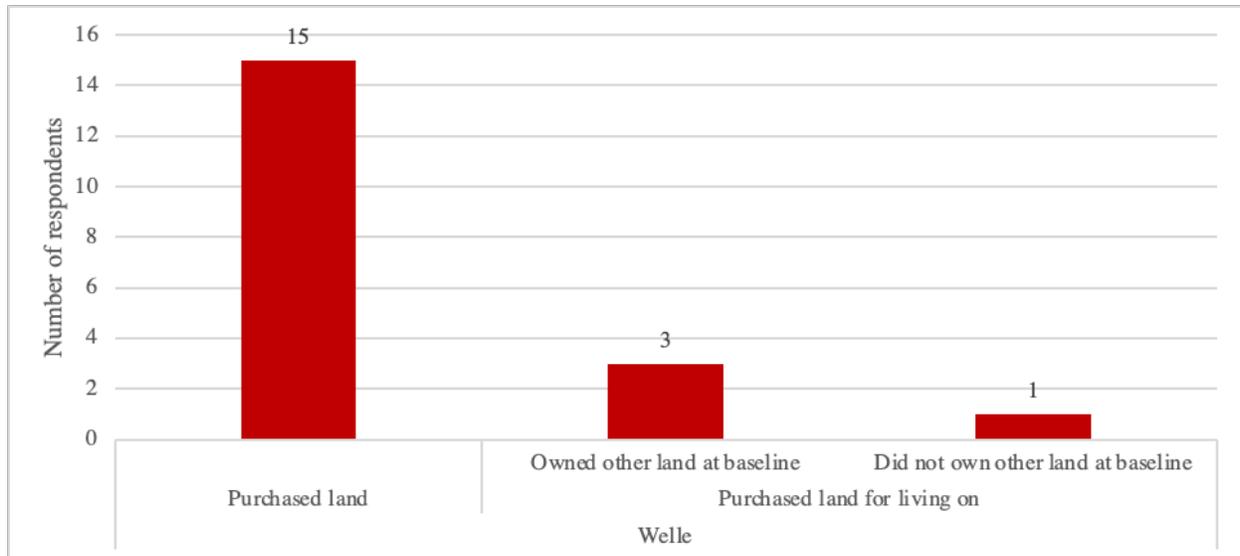
Note: Answers provided by the respondents who participated in all three surveys (N$_{Welle}$=47 in and N$_{Nyakumba}$= 42). Source: Second follow-up survey (December 2022).

In Welle, the value of owned furniture increased over time. The largest part of the increase seemed to have happened between the baseline and first follow-up survey (see Figure 5.14 and Table 5.13). After that, the accumulation of furniture has slowed down. In this first period, the value of furniture also increased much more rapidly than in Nyakumba. From first follow-up to the second follow-up survey, Nyakumba appears to have somwehat caught up: the difference in temporal change from baseline to second follow-up across villages is smaller (see Table 5.14).

Figure 5.14 The average value of furniture owned by households over time
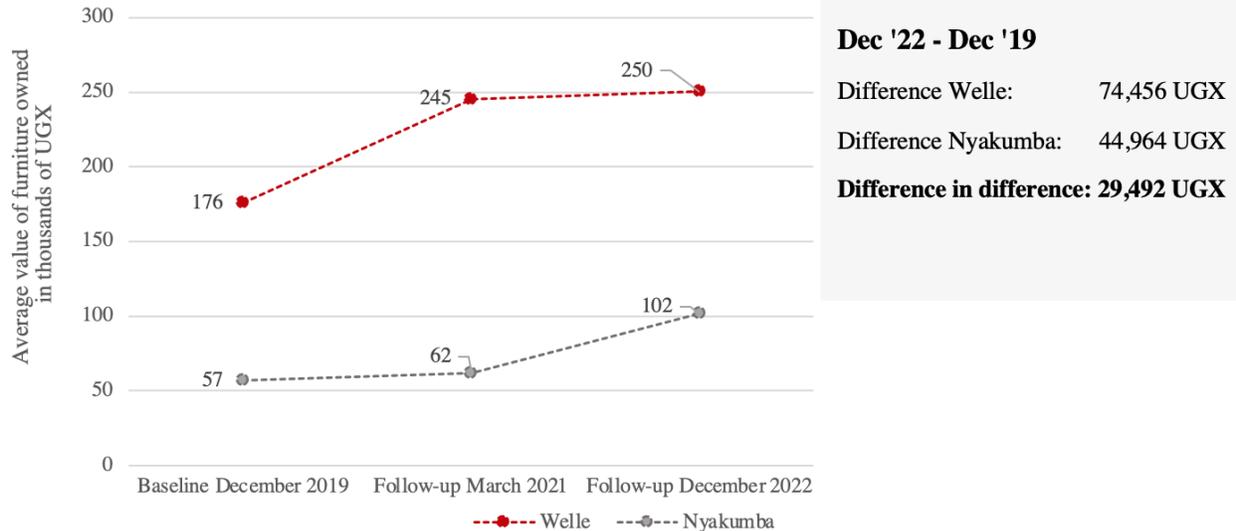
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). Furniture includes sofas, chairs, tables, beds, mattresses, clocks, kerosene stoves, refrigerators, and cupboards. Source: All three surveys. The difference in difference is calculated as follows: ($F_{Welle, follow-up}$ - $F_{Welle, baseline}$) - ($F_{Nyakumba, follow-up}$ - $F_{Nyakumba, baseline}$).

5.5.2. Agricultural Assets

Most respondents indicated farming to be their most important source of income. Consistent with the latter, we find that a substantial share of the respondents in Welle bought new land for cultivating crops since the baseline. At baseline, many respondents in Welle owned a piece of land other than for the purpose of living on (see Figure 5.15). In the third follow-up survey, 13 out of the 47 respondents from Welle indicated that their households bought land for the purpose of cultivating crops since the baseline. No land was bought for the purpose of keeping livestock. Most of these buyers' households already owned 'other land' during the baseline survey (Figure 5.16). Finally, four out of these 13 respondents indicated that the purchased land allowed them to work closer to home. In Nyakumba, 6 respondents indicated their households bought land, and in all cases the purchased land is used for cultivating crops. In both villages, the purchased land is in almost all cases jointly owned by husband and wife.

Furthermore, the number of households renting land increased in Welle. At baseline, 55 percent of the respondents from Welle were renting land (see Figure 5.15). In March 2021 and in December 2022, this percentage grew to 77 percent. The rented land is in all cases used for cultivating crops.

Figure 5.15 The number of respondents whose household owns land, rents land, or was temporarily given land at baseline.
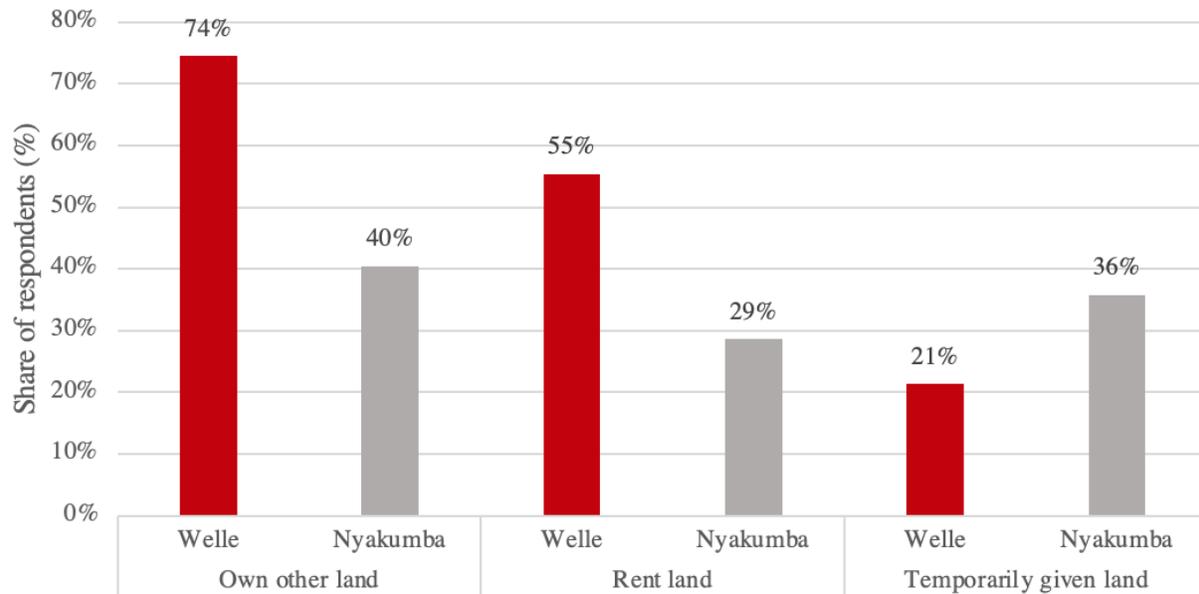
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). Source: Baseline survey (December 2019)

Figure 5.16 The number of respondents whose household bought land for cultivating crops.
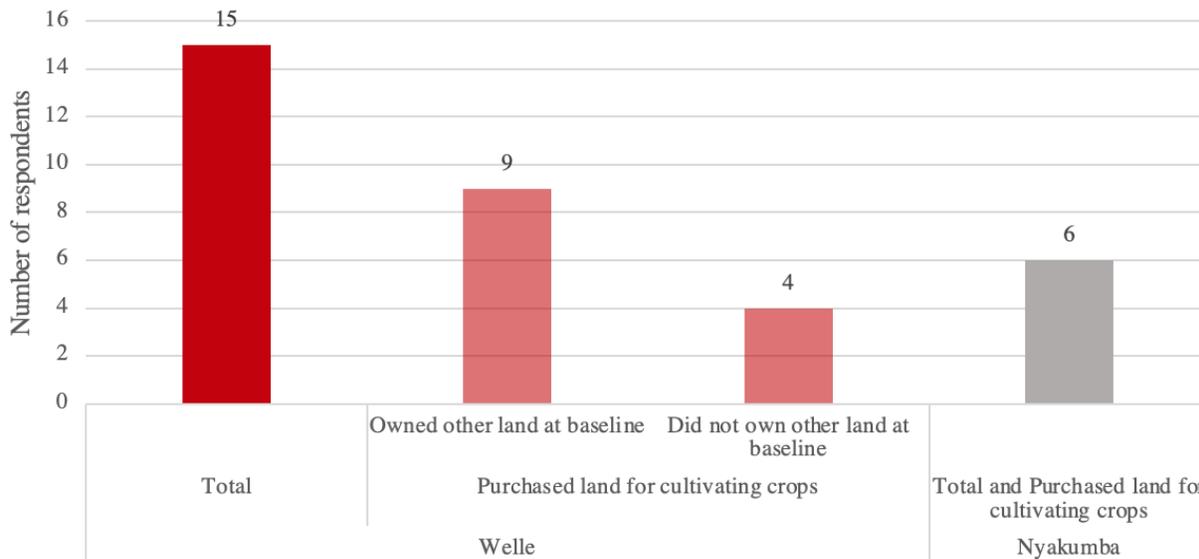
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). Source: Baseline and Second follow-up survey (December 2022).

Most of the farming is traditional. The majority of farming households do not buy fertilizers, nor hire machinery. At baseline, a minority of farming households in Welle pays for fertilizers and

hiring machines[26]. The number of respondents in Welle indicating their household paid for fertilizers decreased from 12 in the long rain season (March-June) of 2019 to zero in the long rain season of 2022. The number of farming households paying for hiring machines during this season also decreased from 14 to 1. The number of farming households however stays approximately the same. These noteworthy decreases are most likely due to farmers anticipating the much lower rainfall in this particular season compared to previous years. For the short rain season (August - November), the change in these numbers is negligible.

The average number of farming tools and their average total value are rather low as well. In the baseline, the average number of farming tools among the households in Welle amounted to 2.5 tools. The average baseline value of farming tools for these households amounted to 26,155 UGX (i.e., ± 7.6 USD[27]). Over time, households collected more farming tools and increased the total value of their farm tools over time (see Figure 5.17, Figure 5.18 and Table 5.15). However, neither the number, nor the value of farm tools increased much faster in Welle than in Nyakumba (see Table 5.16).

Figure 5.17 The average number of farming tools households own over time.
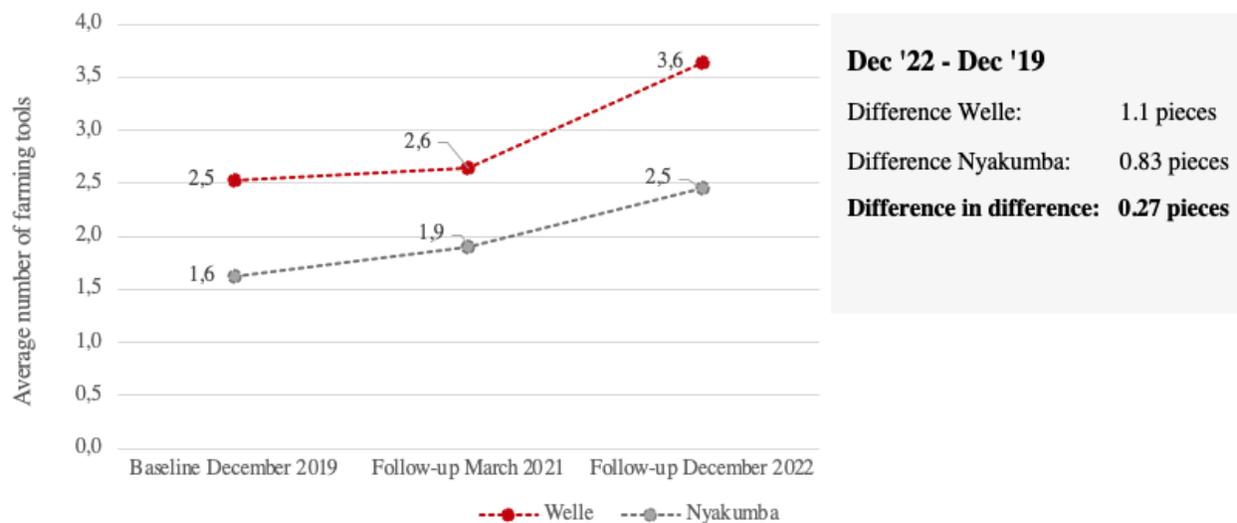
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). The difference in difference is calculated as follows: ($FTN_{Welle, follow-up}$ - $FTN_{Welle, baseline}$) - ($FTN_{Nyakumba, follow-up}$ - $FTN_{Nyakumba, baseline}$).

---

[26] In the long rain season of 2019, 12 respondents indicated that their household paid for fertilizer, and 14 for hiring machinery. In the short rain season, only 6 respondents indicated their household paid for fertilizer, and only 3 for hiring machinery.

[27] Using the 2019 exchange rate of 1 USD : 3704.5036 UGX.

Figure 5.18 The average value of farming tools owned over time.
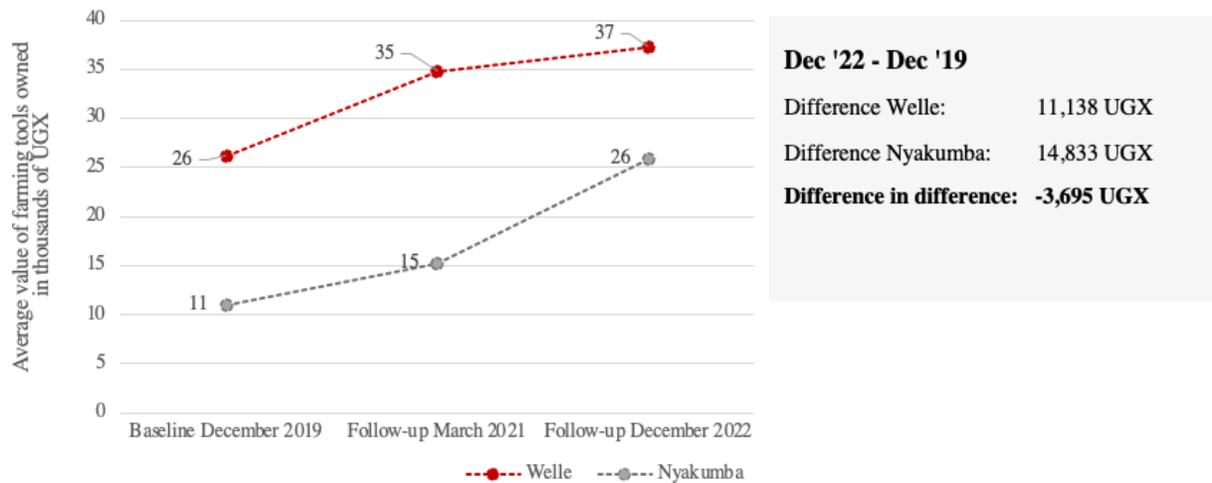
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). The difference in difference is calculated as follows: ($FTV_{Welle, follow-up}$ - $FTV_{Welle, baseline}$) - ($FTV_{Nyakumba, follow-up}$ - $FTV_{Nyakumba, baseline}$).

In Welle, ownership of livestock increased since the baseline survey. The increase in the number of households owning cattle is especially noteworthy, since very few households owned cattle at baseline (see Figure 5.19). Cattle are the most expensive livestock to obtain and the most valuable. Most households that own cattle, own between 1-3 pieces during the second follow-up survey.

Figure 5.19 Ownership of livestock over time.
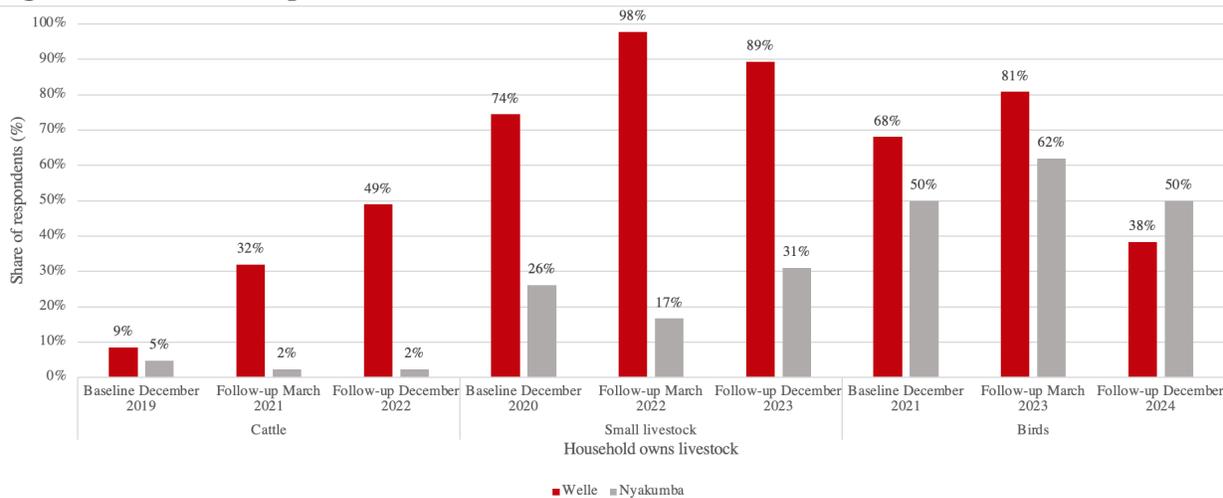
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=47 in and $N_{Nyakumba}$= 42). Examples provided to respondents for cattle include cows, bulls, calves. Examples provided to respondents for small livestock include goats, sheep, and pigs. Examples provided to respondents for birds include chicken, turkey, dove and quail.

5.5.3. Non-agricultural Businesses

Approximately 30 percent of the respondents' households in Welle owned at least one non-agricultural business (see Table 5.17). The nature of those businesses included selling raw produce[28], collecting firewood, selling/trading fish, selling prepared foods, a hairdresser/styling, and a local brewer. All these businesses were operated for more than 3 months.

At first the number of households with non-agricultural businesses increased somewhat. Yet, in the longer run, this number almost halved. Between the baseline survey and the first follow-up, the number of households with a non-agricultural business increased with 3 households (see Table 5.17). However, between the baseline survey and the second follow-up, the number of households with a non-agricultural business almost halved. Two out of the six businesses that remained, were started by households who did not have a business at baseline. Out of the four households who did, all seem to have changed the nature of their business. The businesses that remained focused on selling/trading fish, selling prepared foods, bicycle repair, boda-boda services[29], and selling cigarettes.

Table 5.17 The number of households with non-agricultural businesses across surveys

|		Baseline (December 2019)	First Follow-up (March 2021)	Second Follow-up (December 2022)
Welle				
	"Yes"	13	16	7
	"No"	33	31	31
Nyakumba				
	"Yes"	2	3	1
	"No"	40	39	41

Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=46 in and $N_{Nyakumba}$= 42). One baseline value is missing for Welle, hence this observation is removed from the table. This removed observation did not have a business during the first follow-up, nor in the second follow-up.

The LIFE basic-income is used to purchase both booster capital and variable costs. At baseline, only a handful of businesses purchased booster capital. For almost all business owning households,

---

[28] Produce that is not cultivated by the respondent but purchased elsewhere.
[29] Transportation by motorbike.

the main source to cover the purchases of booster capital and variable costs[30] were personal savings at the time. In the first follow-up survey, LIFE basic income was the most mentioned main source for both investment types. 9 of the respondents indicated that LIFE basic income was their main source for investments in booster capital (i.e., the purchase of machinery or durable goods like tools, cooking pots, ovens, sewing machines). 8 business owning households indicated that the LIFE basic income was their main source for variable costs, particularly for transport and inventory costs. Most business owners use the basic income for both. In the second follow-up, the main source of capital for investments was more mixed. For example, one respondent mentioned a micro-loan from a bank to be the main source, another mentioned the sale of assets, and two others mentioned personal savings. Only one respondent mentioned the LIFE basic income to be his/her main source for booster capital.

5.5.4. Other Assets

In line with the program's distribution of simple feature phones, the ownership of mobile phones improved substantially. In the first follow-up survey, every respondent indicated to own at least one mobile phone, and in the second follow-up, only a few indicated not to have one (see Table 5.18). These phones may not only be useful for receiving the LIFE basic income, but may improve the beneficiary's ability to reach family, friends, and acquaintances as well. Moreover, the phones may help respondents in accessing valuable information on for instance weather forecasts and market prices for produce and livestock.

Few households in Welle obtained other, relatively expensive assets. One household purchased a computer or television, and a considerable share purchased a radio (see Table 5.18). Like phones, these tools could improve beneficiaries' access to information. Remarkably, the number of respondents indicating their household owns a bicycle or motorbike declined (see Table 5.18), whereas these assets could improve travel time, hence access to markets and schools. Finally, a considerable number of households have obtained assets that could improve their access to electricity, such as solar panels and batteries (see Table 5.18). The increased number of assets related to ICT and energy, may considerably reduce the initial isolation households were facing at baseline. A reduction of such isolation and improved access to information could have important benefits for those corresponding households and have important positive spillovers to nearby villages.

---

[30] Variable costs include costs of electricity, costs for water, wages/salary, transport and inventory costs.

Table 5.18 Number of respondents whose household owns assets related to ICT, transportation, and energy.

		Baseline December 2019	Follow-up March 2021	Follow-up December 2022
Information and Communication devices	Phone	40%	100%	96%
	Radio	15%	38%	43%
	Computer or Television	0%	0%	4%
Transportation	Bicycle	25%	13%	6%
	Motorbike	6%	2%	9%
Energy	Solar Panels	19%	51%	74%
	Batteries	19%	55%	64%

Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=46 in and $N_{Nyakumba}$= 42).

5.6 Consumption of Temptation Goods

At baseline, only few respondents from Welle indicated to worry about the alcoholic consumption of their children or spouses. Consistent with this finding, average household expenditures on alcoholic beverages and tobacco in the week prior to the baseline survey (i.e., 1,300 UGX or 1 USD, at 2017 PPP) seem low compared to other expenditures, such as food (see Figure 5.3 and Figure 5.21). Nevertheless, alcohol consumption could still be moderate, as the hard liquor (i.e., beverages containing 40-45 percent of alcohol) packaged in 50ml-100ml sachets or in 200ml bottles is cheap, and therefore often favored by persons on a low income (BBC, 2019). The BBC states prices for such sachets go as low as 13 US cents, about 200-500 UGX, whereas the Ugandan Newspaper, The Daily Monitor, mentions a local price of 1,500 UGX for a 200ml bottle of potent gin in one of its 2022 articles. Besides, the reported household consumption of alcoholic beverages and tobacco are self-reported, hence it could be the case that respondents are underestimating or purposefully underreporting these expenditures.

Over the period December 2019 to December 2022, the average expenditures on tobacco and alcoholic beverages have increased (see Figure 5.21, Table 5.21 and Table 5.22). For the average respondent from Welle, those expenditures increased with 1,261 UGX (see Table 5.22), which amounts to approximately 1 USD at 2017 PPP.

Figure 5.21 The average household consumption of alcoholic beverages and tobacco over time.
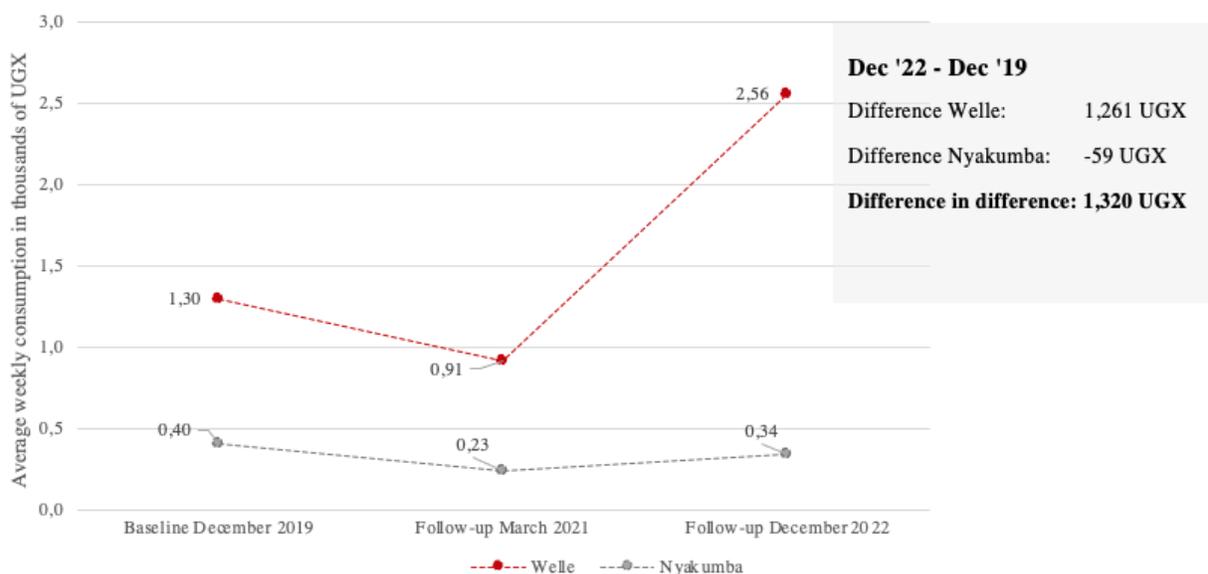
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=46 in and $N_{Nyakumba}$= 42). The difference in difference is calculated as follows: ($TG_{Welle, follow-up}$ - $TG_{Welle, baseline}$) - ($TG_{Nyakumba, follow-up}$ - $TG_{Nyakumba, baseline}$).

5.7 Emotional Well-being

Overall, emotional well-being appears to have improved in Welle since the baseline. Respondents indicated to perceive less stress over multiple domains in the second follow-up and obtained a more optimistic life orientation. The CES-D index for symptoms of depression remained roughly the same. Rosenberg's index for self-esteem declined only very slightly and is considerably smaller than in Nyakumba. Finally, using Rotter's locus of control, a slight shift towards external local control is observed over time.

5.7.1 Stress

Respondents from Welle have become much less worried across multiple domains since the LIFE-program started (see Figure 5.22). The average stress from having insufficient money for basic needs decreased most among participants in Welle, followed by stress from having insufficient money for living expenses decreased and stress from having insufficient money for medicine. Whereas, in the control village, Nyakumba, respondents' stress from the specified issues appears to have somewhat increased.

Figure 5.22 Stress across various dimensions at the second follow-up
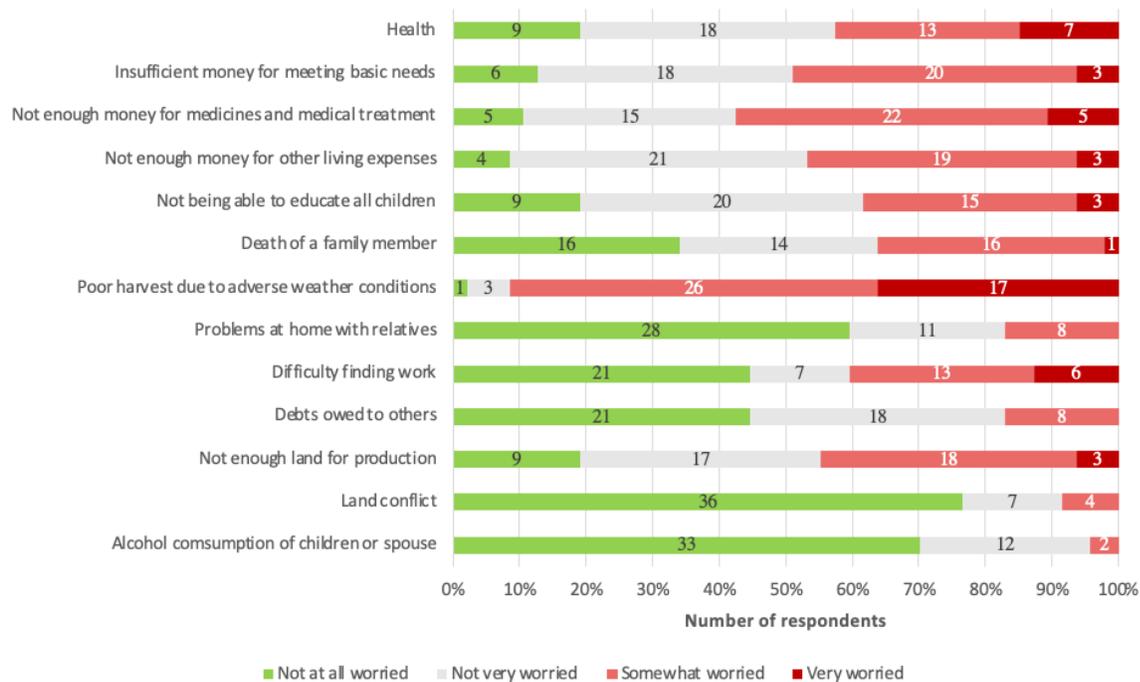
Note: Answers provided by the respondents from Welle who participated in all three surveys (N_{Welle}=47).

5.7.2. Depression

For obtaining insight into what extent of respondents are at-risk of depression, we use the Centre for Epidemiologic Studies Depression Scale (CES-D). The CES-D is a 20-item self-reported

questionnaire, covering the major components of depression including depressed mood, feelings of guilt, feelings of helplessness and worthlessness, psychomotor retardation, loss of appetite, and sleep disorders in the week prior to the interview. The question scores are summed and provide an overall score ranging from 0 to 60. A higher score indicates greater depression. Scores of 16 or more are commonly taken as indicative of depression.

At baseline, the average score among the respondents from Welle equals 18, suggesting that the average respondent is at-risk of having depression. More specifically, about half of the respondents from Welle have no to mild depressive symptomatology, whereas about 20 percent has moderate depressive symptomatology, and 25 percent has severe depressive symptomatology at baseline.

Over the shorter run (i.e., December 2019-March 2021), the depressive symptomatology has slightly declined among respondents in Welle. Yet over the longer run, the depressive symptomatology slightly increased back to its previous level (see Table 5.23). In Nyakumba, the depressive symptomatology slightly increased in both the short and longer run. The latter increase was also slightly larger than in Welle (see Table 5.24).

Figure 5.23 The CESD-score over time

Dec '22 - Dec '19	
Difference Welle:	2.35
Difference Nyakumba:	4.57
Difference in difference: -2.22	
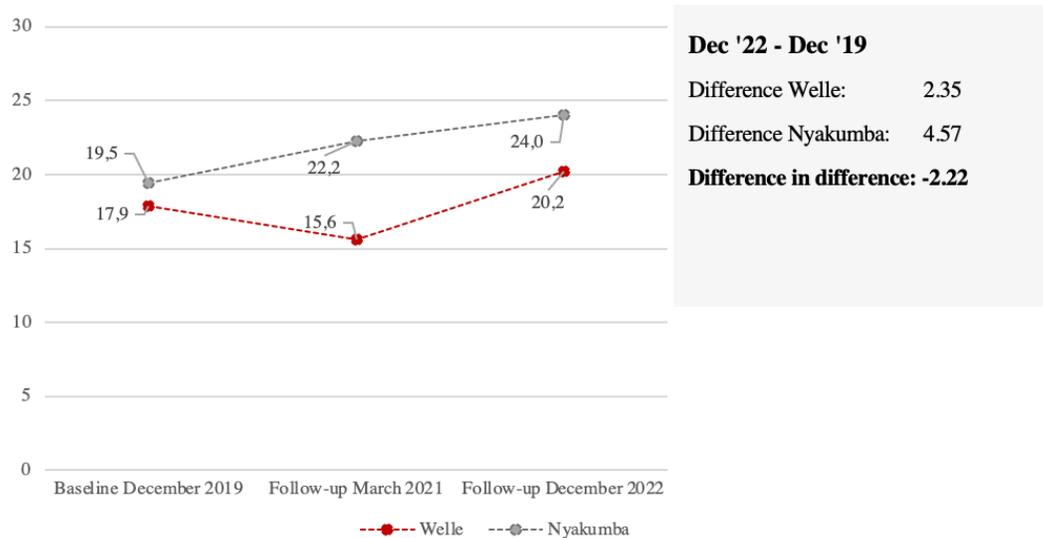
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=43 in and $N_{Nyakumba}$= 42). The minimum index score is 0 and the maximum score is 60. See appendix 8.1.2 for the precise construction of the CESD index. The lower the score, the less symptoms of depression one had. The difference in difference is calculated as follows: ($CESD_{Welle, follow-up}$ - $CESD_{Welle, baseline}$) - ($CESD_{Nyakumba, follow-up}$ - $CESD_{Nyakumba, baseline}$).

5.7.3. Optimistic Life Orientation

To learn more about the extent to which respondents have an optimistic life orientation, we use a slightly adjusted version of Scheier's Life Orientation Test - Reversed (i.e., LOT-R). This test was

designed to measure the extent to which people hold generalized favorable expectations for their future. The higher the score, the more optimistic life orientation a person is likely to hold.

Respondents from Welle obtained a much more optimistic life orientation over time. At baseline, the average total LOT-R score is rather low, suggesting that on average respondents in Welle are holding rather pessimistic expectations for their future. In the shorter run, the total score somewhat improved. In the longer run, however, the total score almost doubled (see Table 5.25). Hence, the average respondent's life orientation became much more optimistic over time, also compared to the average respondent from Nyakumba (Table 5.26).

Figure 5.24 The Optimistic Life Orientation score over time
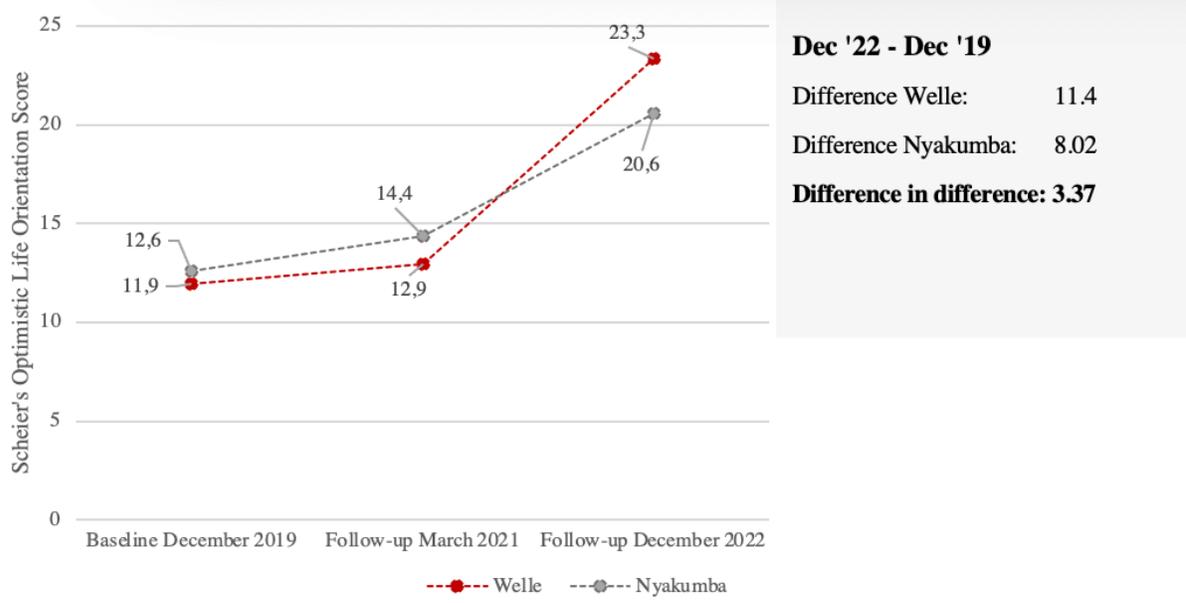
Note: Answers provided by the respondents who participated in all three surveys (N_Welle=46 in and N_Nyakumba= 42). The minimum index score is 6 and the maximum score is 35. The higher the score, the more optimistic one is likely to be. See appendix 8.1.3 for the precise construction of Scheier's index for an optimistic life orientation. The difference in difference is calculated as follows: (LOTR_Welle, follow-up - LOTR_Welle, baseline) - (LOTR_Nyakumba, follow-up - LOTR_Nyakumba, baseline).

5.7.4. Self-esteem

To gain insight into the extent respondents had low self-esteem and improved their self-esteem since the LIFE basic-income program, we use the Rosenberg self-esteem scale developed by Morris Rosenberg. The scale ranges from 10–40, where a score less than 25 may indicate problematic low self-esteem (Acosta García et al., 2019).

At baseline, the average respondent from Welle had a medium-high score for self-esteem. Over time, this self-esteem score remained relatively constant. From baseline to the first follow-up, their total average score remained unchanged. From baseline to the second follow-up, their total average score decreased only very slightly, suggesting people in Welle held a similar level of self-esteem after the program started, whereas in Nyakumba the decline was more considerable.

Figure 5.25 The Rosenberg Self-esteem score over time
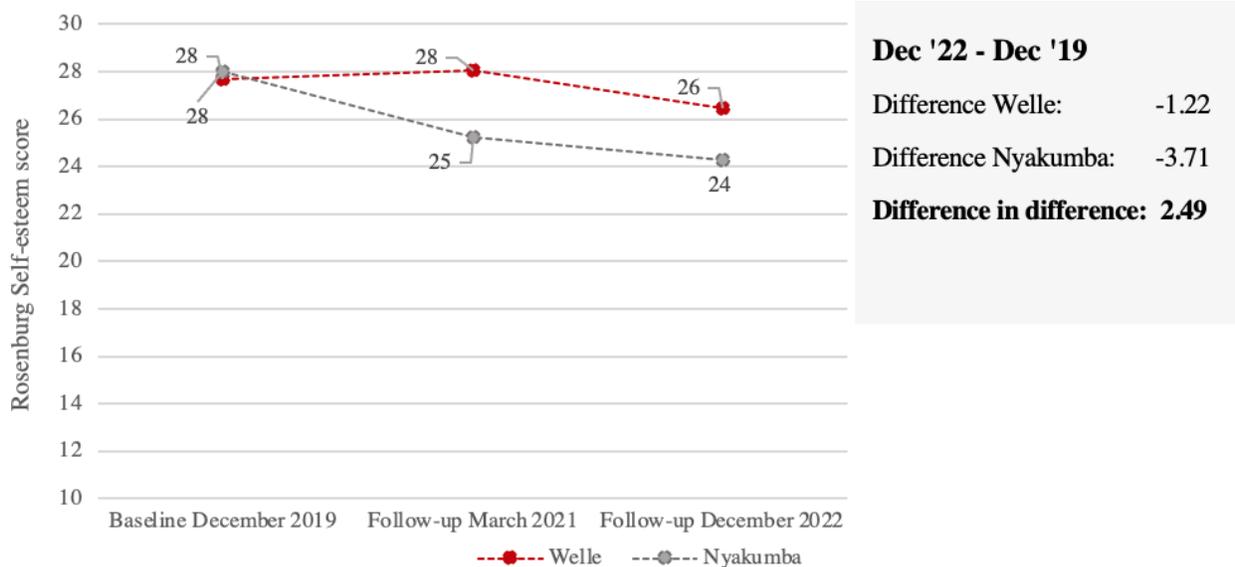

Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=44 in and $N_{Nyakumba}$= 42). The minimum score is 10 and the maximum score equals 40. The lower the score, the less self-esteem one has. See appendix 8.1.4 for the precise construction of Rosenburg's self-esteem index. The difference in difference is calculated as follows: ($RSE_{Welle, follow-up}$ - $RSE_{Welle, baseline}$) - ($RSE_{Nyakumba, follow-up}$ - $RSE_{Nyakumba, baseline}$).

5.7.5. Locus of Control

To gain insight into the extent respondents believe to have control over their own behavior and whether this belief has shifted since the LIFE basic income program, we consider Rotter's Locus of Control index. A person can either have an internal locus of control or an external locus of control (Rotter, 1954). People with a high internal locus of control perceive themselves as having much personal control over their behavior and are, therefore, more likely to take responsibility for how they behave. In contrast, a person with a high external locus of control perceives their behavior to be a result of external influences or luck. Note that locus of control refers to an idea connected with anticipations about the future, and does not refer to attributing explanations for past outcomes.

At baseline, respondents in Welle have a slightly more internal locus of control. Over time, however, respondents shift towards the middle of the scale, placing slightly more emphasis on external factors (see Table 5.29 and Table 5.30). Compared to Nyakumba, Rotter's index increased slightly more in Welle (see Table 5.30). This development may be (partially) due to the observation that external programs, such as the LIFE basic income program, may also influence their behavior and their lives. Given scale of the index, note that these above-mentioned changes are still very small.

Figure 5.26 The Rotter's Locus of Control score over time
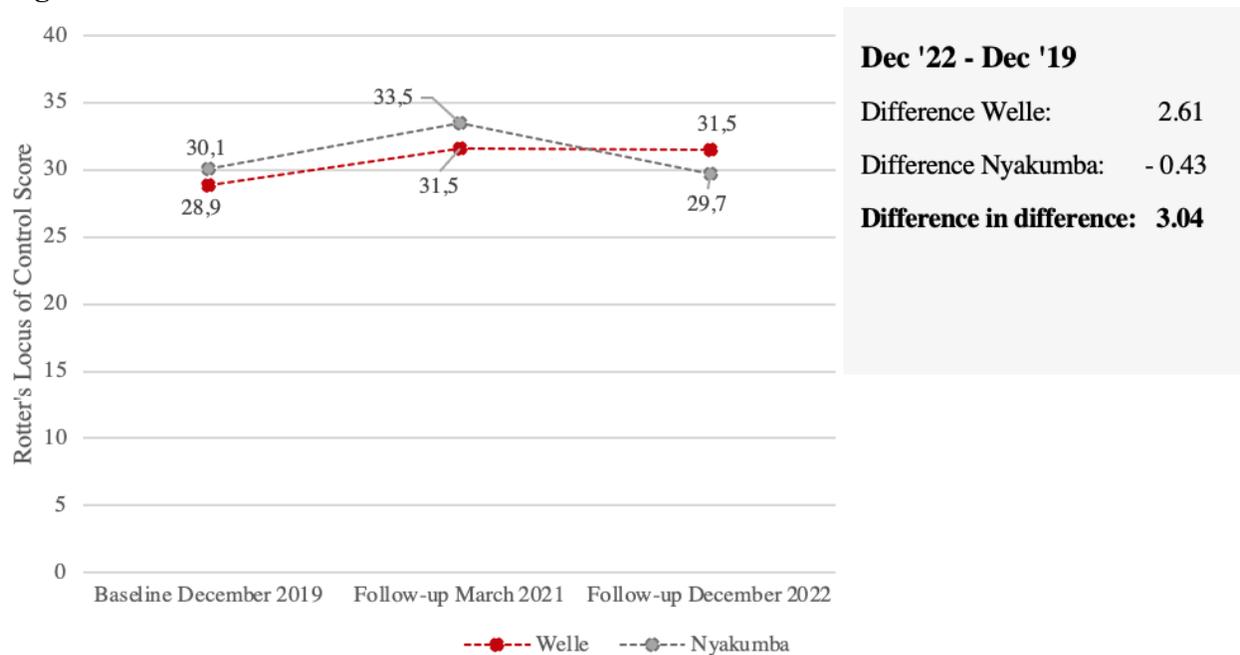
Note: Answers provided by the respondents who participated in all three surveys (N_{Welle}=46 in and $N_{Nyakumba}$= 42). The minimum index score is 8 and the maximum score is 56. The higher the score, the more people think external factors matter. See appendix 8.1.5 for the precise construction of Rotter's locus of control index. The difference in difference is calculated as follows: ($LOC_{Welle, follow-up}$ - $LOC_{Welle, baseline}$) - ($LOC_{Nyakumba, follow-up}$ - $LOC_{Nyakumba, baseline}$).

5.8 Aspirations

To gain insight into the extent to which respondents in Welle hold aspirations, and into the type of aspirations they hold, we constructed a survey index and asked inhabitants of Welle about their aspirations in interviews. The survey index includes 18 questions on the extent to which respondents actively set (financial) goals and pursue their own goals. The total index score is the sum of all scores, and the scale ranges from 0 to 18. The higher the score, the more actively one is likely to set and pursue their own goals. In May 2021, a dozen interviews were held, in which respondents were asked about their aspirations.

Figure 2.27 Aspirations score over time
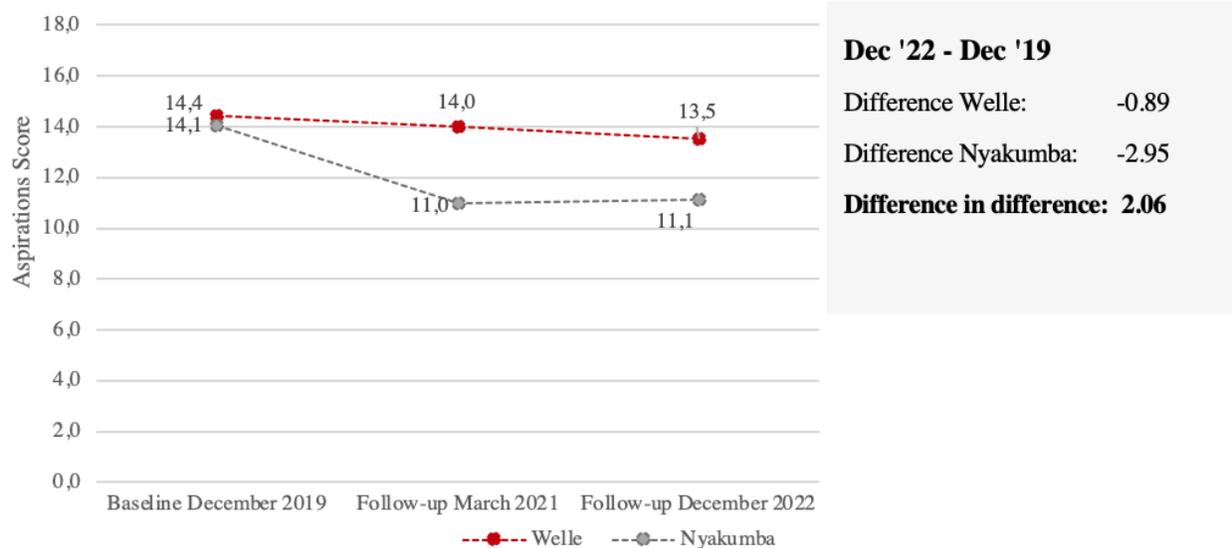
The minimum score is 0 and the maximum score equals 18. The lower the score, the less one is likely to set and pursue his/her aspirations. See appendix 8.1.6 for the precise construction of the aspiration index. The difference in difference is calculated as follows: $(A_{Welle, follow-up} - A_{Welle, baseline}) - (A_{Nyakumba, follow-up} - A_{Nyakumba, baseline})$.

At baseline, respondents from Welle score quite high on the scale, suggesting most are actively setting (financial) goals and pursuing their goals. Since the baseline, the total score for the aspirations index among respondents in Welle has stayed rather constant (see Table 5.31 and Table 5.32). In Nyakumba, respondents' aspirations declined considerably over time. Assuming respondents from Welle would be on a similar trend as respondents from Nyakumba in absence of the LIFE basic income program, the basic income could have motivated the recipients to continue to actively set and pursue their aspirations.

In the interviews inhabitants mentioned to pursue a wide range of aspirations. Most of the mentioned aspirations relate to long-term income, education and occupation, and housing. For example, multiple respondents were aspiring to expand their farm/business to such an extent that

it would provide their households with a higher and stable income source in the longer run (i.e., also after the program would end). One younger male of 18 years old aspires to obtain more grades in secondary school and become an engineer or a medical doctor. Another male respondent aspired to continue his education in a tertiary institution located in Kampala. Furthermore, one mother aspired to obtain sufficient funds for the bride price, her son needed to pay to get married. Most of the interviewed elderly mentioned they aspired to have a semi-permanent house that could save them costs and effort needed to replace roofs in the longer run.

6 Discussion and Outlook

This study has reviewed the 7-year LIFE basic income project, set up by INclusion in 2020 in a rural village, called Welle, in the West-Nile region of Uganda, and managed by Ugandan Agency For Accelerated Regional Development (AFARD), at its intermediary stage. The LIFE basic income program is a relatively small universal, unconditional basic income project, targeting one poor village in West-Nile; Welle. The project is unique in its implementation, due to the following features: i) income is provided in the form of both a direct transfer and a program village fund, ii) the project uses a steering committee, consisting of democratically chosen village inhabitants, iii) the LIFE basic income for children equals that of adult recipients. With this project, INclusion aims to provide recipients with the autonomy to improve their lives in the way the recipients themselves see fit.

Our study aimed to answer the following research questions:

1. *How has access to food and clean water changed among beneficiaries within December 2019 and December 2022?*
2. *How has the health of beneficiaries changed within December 2019 and December 2022?*
3. *Has the number of persons aged between 14 and 25 attending school within the recipients' households after the COVID-19 lockdown was lifted changed compared to the baseline?*
4. *Have the beneficiaries accumulated more assets within December 2019 and December 2022*
5. *How has the consumption of temptation goods developed between December 2019 and December 2022?*
6. *How has the emotional wellbeing of beneficiaries changed between December 2019 and December 2022?*

From comparing corresponding baseline- and follow-up values, we find the following:

- Since the LIFE basic income project started, access to food and clean drinking water improved.
- Overall, the health of respondents from Welle appears to have improved. Moreover, stress about health and not being able to pay for medicine declined.
- School attendance increased during this period: the share of school attending household members aged 4 to 25 years increased by 25 percent, among respondents who had household members between the respective ages during both the baseline survey and the second follow-up.
- Considering assets, a considerable share of the respondents from Welle (63%) used the basic income for investments in housing, building both traditional and semi-permanent homes.
- The reported consumption of temptation goods in the week prior to both the baseline and follow-up surveys are low relative to other expenditures, and to the received basic income.

However, the slight increase in the value of consumption of alcohol and tobacco must be followed with caution.

- Emotional well-being appears to have somewhat improved in Welle since the baseline. Respondents have indicated to perceive less stress over multiple domains over time and have obtained a more optimistic life orientation. The CES-D index for symptoms of depression remained roughly the same. Rosenberg's index for self-esteem declined only very slightly, and to a considerably smaller extent relative to Nyakumba.

The findings are in line with empirical literature on cash-transfers. For instance, most respondents direct part of the cash-transfer to improving their food security in the short-medium term (e.g., Haushofer & Shapiro, 2016; and Bastagli, 2016).

These results of this review are subject to a several caveats and limitations:
- The data used for this review is all self-reported. The averages reported for consumption and assets may be subject to noise, as respondents may not remember the corresponding values precisely (recall bias) and provide rough estimations. Furthermore, data on more sensitive topics, such as the consumption of alcohol and tobacco, may be underreported.
- Non-random sampling of respondents and attrition may result in sampling bias.
- Small sample size, resulting in low statistical power.
- A few noteworthy differences between the control group from Nyakumba and the respondents from Welle, which may cause the two groups of respondents to be on different trends in absence of the program. For instance, the fact that Nyakumba has a school located within the village and Welle has not, may cause respondents from Nyakumba to follow a different trend in school attendance than respondents from Welle. Therefore, the study's set-up limits the extent to which we can make claims on causality.

Following the residents' aspirations, we may expect a continued substantial part of the basic income to be directed towards improved housing in the future. Another important goal inhabitants indicate to have is 'creating an increased, more stable, and sustainable income source for their lives after the basic income project ends'. Most individuals earn their income from subsistence farming, and consequently invest in assets related to agriculture. Yet, climate change will increasingly affect harvests and the availability of water negatively. In the 2022 long rainy season (March - June) there was much less rainfall than expected (AFARD, 2022). Also, the consequences of adverse weather conditions for people's harvest have become a more important worry according to the survey answers provided in December 2019 and December 2023. Concluding, residents appear to be conscious of the unique, yet time-bound opportunity given to them to improve their welfare in the long-run and aspire goals related to such sustainable welfare. Yet, they will face serious challenges on the road ahead.

7 References

Aiyar, S. S. (2017). Universal basic income: A doleful, wasteful idea. *Indian Journal of Human Development*, *11*(2), 183-184.

Banerjee, A., Duflo, E., Imbert, C., Mathew, S., & Pande, R. (2020). E-governance, accountability, and leakage in public programs: Experimental evidence from a financial management reform in India. *American Economic Journal: Applied Economics*, *12*(4), 39-72.

Bastagli, F., Hagen-Zanker, J., Harman, H., Barca, V., Sturge, G., Schmidt, T. & Pellerano, L. (2016). Cash transfers: What does the evidence say? A rigorous review of programme impact and of the role of design and implementation features, ODI Report.

Bardhan, P. (2017). Universal Basic Income—Its Special Case for India. *Indian Journal of Human Development, 11*(2): 141–43.

Burtless, G. (1986). The Work Response to a Guaranteed Income. A Survey of Experimental Evidence. In *Lessons from the Income Maintenance Experiments* (Alicia H. Munnell ed.). Boston: Federal Reserve Bank of Boston.

Cain, G. C., Nicholson, W., Mallar, C., & Wooldridge, J. (1974). The Labour-Supply Response of Married Women, Husbands Present. *Journal of Human Resources 9*(2), 201-223.

Cain, G. G., & Wissoker, D.A. (1990). A Reanalyis of Marital Stability in the Seattle-Denver Income-Maintenance Experiment. *American Journal of Sociology*, *95*(5), 1235–1269.

Davala, S., Jhabvala, R., Standing, G. & Mehta, K. (2015). *Basic Income: A Transformative Policy for India*. Bloomsbury Publishing.

Drèze, J. (2017). Decoding Universal Basic Income. *Indian Journal of Human Development, 11*(2), 163–66.

Drèze, J., & Khera, R. (2017). Recent Social Security Initiatives in India. *World Development,* 98 (C), 555–72.

Duflo E., Dupas P., & Kremer M. (2015). Education, HIV, and early fertility: Experimental evidence from Kenya. *American Economic Review, 2015, 105*(9), 2757–2797.

Feinberg, R. M., & Kuehn, D. (2020). Does a Guaranteed Basic Income Encourage Entrepreneurship? Evidence from Alaska. *Review of Industrial Organization,* 57, 607–626.

Forget, E. (2011). The town with no poverty: The health effects of a Canadian Guaranteed Annual Income field experiment. *Canadian Public Policy, 37*(3), 283–305.

14 people die after drinking potent gin. (2022, August 22). Monitor. https://www.monitor.co.ug/uganda/news/national/14-people-die-after-drinking-potent-gin-3922106

García, J. A., Y Olmos, F. C., Matheu, M. L., & Carreño, T. P. (2019). Self esteem levels vs global scores on the Rosenberg self-esteem scale. *Heliyon*, *5*(3), e01378.

Ghatak, M. (2016, July 1). The Price of Basic Income. *Indian Express*.

Ghatak, M., & Muralidharan, K. (2019). An Inclusive Growth Dividend: Reframing the Role of Income Transfers in India's Anti-Poverty Strategy. CEGA Working Paper 90. University of California, Berkeley.

Gentilini, U., Grosh, M., Rigolini, J., and Yemtsov, R., (2020). *Exploring Universal Basic Income: A Guide to Navigating Concepts, Evidence, and Practices.* Washington, DC: World Bank. doi:10.1596/978-1-4648-1458-7.

Gosh, J. (2017, February 3). A universal basic income in India? – IDEAs. *IDEAs – International Development Economics Associates*. https://www.networkideas.org/themes/economy-and-society/2017/02/a-universal-basic-income-in-india/

Hannan, M. T., Tuma, N.B., & Groeneveld, L.P. (1977). Income and Marital Events: Evidence from an Income-Maintenance Experiment. *American Journal of Sociology,* 82, 1186-1211.

Joshi, V. (2016, October 21). *Universal Basic Income for India.* Ideas for India. https://www.ideasforindia.in/topics/poverty-inequality/universal-basic-income-for-india.html

Keeley, M. C. (1981). Labour Supply and Public Policy: A Critical Review. New York: Academic Press.

Ray, D. (2016, September 29). *The Universal Basic Share.* Ideas for India. https://www.ideasforindia.in/topics/poverty-inequality/the-universal-basic-share.html

Robins, P. K. (1985). A Comparison of the Labour Supply Findings from the Four Negative Income Tax Experiments. *Journal of Human Resources 20*(4), 567-582.

Rotter, J. B. (1954). *Social learning and clinical psychology.*

Uganda bans alcohol sold in sachets. (2019, June 1). *BBC*. https://www.bbc.com/news/world-africa-48476168.

Widerquist, K. (2005). A failure to communicate: What (if anything) can we learn from the negative income tax experiments? *The Journal of Socio-Economics*, *34*(1), 49-81.

WHO COVID-19 Dashboard. Geneva: World Health Organization, 2020. Available online: https://covid19.who.int/ (last cited: 19-05-2023).

8 Appendix

8.1 Indices used in analysis

8.1.1. Food insecurity

Index Food security

Question number	Survey Question	1= Yes, 0 = No
1	In the last month, have adults cut the size of meals or skipped meals?	
2	In the last month, have adults gone a whole day without meals?	
3	In the last month, have children (<14) cut the size of meals or skipped meals?	
4	In the last month, have children (<14) gone a whole day without meals?	
5	Do all members of your household regularly eat at least 2 meals a day?*	
6	In the last one week did you go to sleep hungry because there was not enough food?	
7	In the last one week did anyone else in the household go to sleep hungry because there was not enough food?	

*Note: The index is calculated by taking the sum of all scores. Here, the score for the 5th question is reversed. The minimum score is 0 and the maximum score is 7. The higher the score, the higher food insecurity.

8.1.2. Depression

The CESD-index for measuring depression

Survey question	Score: 0=Rarely or none of the time, 1=Some or a little of the time, 2=Occasionally or a moderate amount of time, 3=All of the time
v349: I was bothered by things that usually do not bother me	
v350: I did not feel like eating; my appetite was poor	
v351: I felt that I could not shake off the blues even with help from my family	
*v352: I felt that I was just as good as other people	
v353: I had trouble keeping my mind on what I was doing	
v354: I felt depressed	
v355: I felt that everything I did took an effort	
*v356: I felt hopeful about the future	
v357: I thought my life had been a failure	
v358: I felt fearful	
v359: My sleep was restless	
*v360: I was happy	
v361: I talked less than usual	
v362: I felt lonely	
v363: I felt people were unfriendly	
*v364: I enjoyed life	
v365: I had crying spells	
v366: I felt sad	
v367: I felt that people disliked me	
v368: I could not "get going"	

Note: The index is calculated by taking the sum of all scores. The minimum index score is 0 and the maximum score is 60. The questions with the '' are rescaled in the opposite direction. The lower the score, the less symptoms of depression one had.

8.1.3. Optimistic Life Orientation

Scheier's index for having an optimistic life orientation

Survey question	Score: 1=All the time, 2=Often, 3=Sometimes, 4=Rarely, 5=Never
*In uncertain times, I expect the best.	
If something can go wrong for me, it will.	
*I'm optimistic about my future.	
*I expect things to go my way.	
*I count on good things happening to me.	
*I expect more good things to happen to me than bad.	

Note: The index is calculated by taking the sum of all scores. The minimum index score is 6 and the maximum score is 35. The questions with the '' are rescaled in the opposite direction. The higher the score, the more optimistic one is likely to be.

8.1.4. Self-esteem

The Rosenberg Self-esteem Scale

Survey question	1=Strongly Agree, 2=Agree, 3=Disagree, 4=Strongly disagree

*v339: I feel that I am a person of worth, at least on an equal plane with others.

*v340: I feel that I have a number of good qualities.

v341: All in all I am inclined to feel that I am a failure.

*v342: I am able to do things as well as most other people.

v343: I feel I do not have much to be proud of.

*v344: I take a positive attitude toward myself.

*v345: On the whole, I am satisfied with myself.

v346: I wish I could have more respect for myself.

v347: I certainly feel useless at times.

v348: At times I think I am no good at all.

*Note: The *questions are rescaled in the opposite direction. The minimum score is 10 (=10*1) and the maximum score equals 40 (=10*4). The lower the score, the less self-esteem one has.

8.1.5. Locus of Control

Rotter's index for locus of control

	1 - Agree completely
	2 - Agree
	3 - Agree somewhat
	4 - Neither agree nor disagree
	5 - Disagree somewhat
	6 - Disagree
	7 - Disagree completely

*How my life goes depends on me.

*One has to work hard in order to succeed.

Inborn abilities are more important than any efforts one can make.

What a person achieves in life is above all a question of fate or luck.

I frequently have the experience that other people have a controlling influence over my life.

*If I run up against difficulties in life, I often doubt my own abilities.

The opportunities that I have in life are determined by social conditions.

I have little control.

*Note: The index is calculated by taking the sum of all scores. The minimum index score is 8 and the maximum score is 56. The higher the score, the more people think external factors matter.

8.1.6. Aspirations

Survey question	1 = Yes, 0 = No

*v382: According to you, it is better to learn to accept matters as they are, than to envision a better future.

v383: According to you, it is better to have aspirations for your family, than to accept each day as it comes.

*v384: You are satisfied with the current sales and profits of your farm/business.

v385: When you have a farm/business, it is important to set goals.

v386: You have specific goals and plans for the future growth of your farm/business.

v387: It is important to set financial goals, when planning for old age/the future.

v388: You have specific financial goals and plans for old age/the future.

v389: You can think of many ways to get out of a jam.

v390: There are lots of ways around any problem.

v391: You can think of many ways to get the things in life that are important to you.

v392: You've been pretty successful in life.

v393: There are many opportunities around for you to reach your goals

v394: Even when others get discouraged, you know you can find a way to solve the problem.

v395: You energetically pursue your goals.

v396: Your past experiences have prepared you well for your future.

v397: When farming/business does not go as planned, you can think of ways to turn matters around.

v398: Your personal effort and that of your family are the main reasons for your achievements and successes.

v399: You meet the goals that you set for yourself.

*Note: The *questions are rescaled in the opposite direction. The minimum score is 0 and the maximum score equals 18. The lower the score, the less one is likely to set and pursue his/her aspirations.

8.2 T-tests result section

8.2.1. Access to food

Table 5.1 T-test difference in food consumption over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Food consumption	1	47	102,838	17,050	0.05	0.96
	2	47	101,975	11,540		
Food consumption	1	47	102,838	17,050	-1.99	0.05
	3	47	144,655	12,972		

Note: Food consumption is the 'row total' of the following categories: i) Cereals, ii) Roots and tubers, iii) Pulses, iv) Vegetables, v) Meat, vi) Fish, vii) Dairy and eggs, viii) Other animal products, ix) Oil and fat, x) Fruit, xi) Sugars, xii) Jam and sweets, xiii) Nonalcoholic drinks, x iv) Spices, x v) Prepared foods, xvi) Other food.

Table 5.2 T-test difference in food consumption (FC) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta FC_{March2021 - Baseline}$	Welle	47	-862.7	16,067	-0.76	0.45
	Nyakumba	42	-15,049	8,144		
$\Delta FC_{December 2022 - Baseline}$	Welle	47	41,817	20,917	-0.389	0.70
	Nyakumba	42	31,970	13,021		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences. Food consumption is the 'row total' of the following categories: i) Cereals, ii) Roots and tubers, iii) Pulses, iv) Vegetables, v) Meat, vi) Fish, vii) Dairy and eggs, viii) Other animal products, ix) Oil and fat, x) Fruit, xi) Sugars, xii) Jam and sweets, xiii) Nonalcoholic drinks, x iv) Spices, x v) Prepared foods, xvi) Other food.

Table 5.3 T-test difference in food security over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Food security	Dec_2019	41	2.83	0.37	1.93	0.06
	March_2021	41	2.05	0.32		
Food security	Dec_2019	41	2.83	0.37	3.01	0.00
	Dec_2022	41	1.59	0.31		

Table 5.4 T-test difference in food insecurity (FS) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta FS_{March2021 - Baseline}$	Welle	41	-0.78	0.40	3.60	0.00
	Nyakumba	40	1.3	0.41		
$\Delta FS_{December 2022 - Baseline}$	Welle	41	-1.24	0.41	1.60	0.11
	Nyakumba	40	-0.125	0.57		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

8.2.2. Health

Table 5.5 T-test difference in monthly medical expenses over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Medical expenditures	Dec_2019	46	29,111	8,300	-1.43	0.16
	Dec_2022	46	45,620	6,993		

Table 5.6 T-test difference in monthly medical expenses (ME) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta ME_{December2022 - Baseline}$	Welle	46	16,509	11,507	1.15	0.25
	Nyakumba	41	36,556	13,270		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

Table 5.7 T-test difference in days missed over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Days missed	Dec_2019	47	11.02	2.82	2.73	0.01
	Dec_2022	47	2.72	0.98		

Table 5.8 T-test difference in days missed (DM) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta DM_{December2022 - Baseline}$	Welle	47	-8.29	3.04	1.57	0.12
	Nyakumba	42	-2.64	1.68		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

8.2.3. Education

Table 5.9 T-test difference in school expenditures over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
School expenditures	Dec_2019	40	16,800	4,047	-2,00	0.05
	Dec_2022	40	97,425	40,014		

Table 5.10 T-test difference in school expenditures (SE) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta SE_{December2022 - Baseline}$	Welle	35	80,625	40,232	0.38	0.71
	Nyakumba	35	101,343	36355		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

Table 5.11 T-test difference in school attendance over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
School attendance	Dec_2019	40	0.595	0.045	-2.52	0.02
	Dec_2022	40	0.741	0.053		

Table 5.12 T-test difference in school attendance (SA) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta SA_{December2022 - Baseline}$	Welle	40	0.146	0.058	0.44	0.66
	Nyakumba	35	0.182	0.057		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

8.2.4. Assets

Table 5.13 T-test difference in furniture over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Furniture	1	47	175,820	37114	-1.43	0.16
	2	47	245,427	31702		
Furniture	1	47	175,820	37114	-1.82	0.07
	3	47	250,277	25387		

Table 5.14 T-test difference in furniture (F) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta F_{\text{March2021 - Baseline}}$	Welle	47	69,607	27,667	-1.94	0.06
	Nyakumba	42	5,071	16,784		
$\Delta F_{\text{December 2022 - Baseline}}$	Welle	47	74,456	40,704	-0.64	0.53
	Nyakumba	42	44,964	18,081		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

Table 5.15 T-test difference in owning farming tools (FT) over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Number of farming tools	1	47	2.53	.27	-0.36	0.72
	2	47	2.64	.23		
Number of farming tools	1	47	2.53	.27	-2.58	0.02
	3	47	3.64	.34		
Value of farming tools	1	47	26155	5281	-0.77	0.46
	2	47	37294	3527		
Value of farming tools	1	47	26155	5281	-1.78	0.08
	3	47	37294	3527		

Table 5.16 T-test difference in owning farming tools (FT) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta FT\_number_{March2021} - Baseline$	Welle	47	0.106	.297	0.44	0.66
	Nyakumba	42	0.286	0.273		
$\Delta FT\_number_{December2022} - Baseline$	Welle	47	1.106	0.336	-0.55	0.58
	Nyakumba	42	0.833	0.361		
$\Delta FT\_value_{December\ 2022} - Baseline$	Welle	47	8651.1	11536.3	-0.36	0.72
	Nyakumba	42	4190.5	2220.8		
$\Delta FT\_value_{December\ 2022} - Baseline$	Welle	47	11138.5	6249.9	0.495	0.62
	Nyakumba	42	14833.3	3651.6		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

8.2.5. Temptation goods

Table 5.21 T-test difference in consumption of temptation goods over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Temptation Goods	1	47	1296.8	399.2	0.67	0.50
	2	47	915.9	370.4		
Temptation Goods	1	47	1296.8	399.2	-1.12	0.27
	3	47	2557.4	1129.6		

Table 5.22 T-test difference in consumption of temptation goods (TG) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta TG_{\text{March2021 - Baseline}}$	Welle	47	-381.9	562.3	0.34	0.73
	Nyakumba	42	-169.04	193.8		
$\Delta TG_{\text{December 2022 - Baseline}}$	Welle	47	1,260.6	1124.0	-1.10	0.27
	Nyakumba	42	-59.52	157.8		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

8.2.6. Emotional Well-being

Table 5.23 T-test difference in depression over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
CESD	1	43	17.89	1.16	1.60	0.12
	2	43	15.58	0.48		
CESD	1	43	17.89	1.16	-1.27	0.21
	3	43	20.23	1.58		

Note: The minimum score is 0 and the maximum score is 60. The lower the score, the less depressed one is likely to be. See appendix 8.1.2 for the precise construction of the CESD index.

Table 5.24 T-test difference in depression (CESD) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta CESD_{March2021 - Baseline}$	Welle	43	-2.30	1.38	-2.56	0.01
	Nyakumba	42	2.78	1.43		
$\Delta CESD_{December 2022 - Baseline}$	Welle	43	2.34	1.85	-0.83	0.41
	Nyakumba	42	4.57	1.92		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

Table 5.25 T-test difference in optimistic life orientation (OLO) over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
OLO	1	46	11.93	0.48	-1.33	0.19
	2	46	12.93	0.47		
OLO	1	46	11.93	0.48	-18.64	0.00
	3	46	23.33	0.33		

Note: The minimum index score is 6 and the maximum score is 35. The higher the score, the more optimistic one's life orientation is likely to be. See appendix 8.1.3 for the precise construction of Scheier's index for an optimistic life orientation.

Table 5.26 T-test difference in optimistic life orientation (OLO) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta OLO_{\text{March2021 - Baseline}}$	Welle	46	1.00	0.75	0.63	0.53
	Nyakumba	42	1.78	1.02		
$\Delta OLO_{\text{December 2022 - Baseline}}$	Welle	46	11.39	0.61	-3.60	0.00
	Nyakumba	42	8.02	0.71		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

Table 5.27 T-test difference in self-esteem over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Self-esteem	1	44	27.68	0.76	-0.50	0.62
	2	44	28.06	0.49		
Self-esteem	1	44	27.68	0.76	1.64	0.11
	3	44	26.45	0.42		

Note: The minimum score is 10 and the maximum score is 40. The lower the score, the less self-esteem one is likely to have. See appendix 8.1.4 for the precise construction of Rosenburg's self-esteem index.

Table 5.28 T-test difference in self-esteem (SE) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta SE_{March2021 - Baseline}$	Welle	44	0.39	0.78	-2.92	0.00
	Nyakumba	42	-2.74	0.73		
$\Delta SE_{December 2022 - Baseline}$	Welle	44	-1.23	0.75	-2.18	0.03
	Nyakumba	42	-3.71	0.87		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

Table 5.29 T-test difference in locus of control over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Locus of control	1	46	28.89	1.09	-2.12	0.04
	2	46	31.54	0.61		
Locus of control	1	46	28.89	1.09	-1.93	0.06
	3	46	31.50	0.72		

Note: The minimum index score is 8 and the maximum score is 56. The higher the score, the more one is likely to think external factors matter. See appendix 8.1.5 for the precise construction of Rotter's locus of control index.

Table 5.30 T-test difference in locus of control (LS) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta LS_{March2021 - Baseline}$	Welle	46	2.65	1.25	0.43	0.67
	Nyakumba	42	3.38	1.15		
$\Delta LS_{December 2022 - Baseline}$	Welle	46	2.61	1.36	-1.67	0.10
	Nyakumba	42	-0.42	1.20		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences.

8.2.8. Aspirations

Table 5.31 T-test difference in aspirations over time for respondents of Welle

Variable	Survey	N	Mean	SE	t	p
Aspirations	1	47	14.43	0.44	0.86	0.40
	2	47	13.98	0.32		
Aspirations	1	47	14.43	0.44	0.08	0.94
	3	47	13.53	0.37		

Note: The minimum score is 0 and the maximum score equals 18. The lower the score, the less one is likely to set and pursue his/her aspirations. See appendix 8.1.6 for the precise construction of the aspiration index.

Table 5.32 T-test difference in aspirations (AS) from the follow-up and baseline across village

Variable	Village	N	Mean	SE	t-value	p-value
$\Delta AS_{March2021 - Baseline}$	Welle	47	-0.447	0.521	-3.30	0.00
	Nyakumba	42	-3.071	0.607		
$\Delta AS_{December 2022 - Baseline}$	Welle	47	-0.893	0.541	-2.21	0.03
	Nyakumba	42	-2.952	0.773		

Note: First the difference between base- and respective follow-up survey is calculated. Then, this difference is compared across individuals. In other words, then the average difference is taken from all individual differences