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Research Report

Civil war impacts on youth business groups in Tigray: A preanalysis plan and documentation for ethical approval by institutional review board at NMBU

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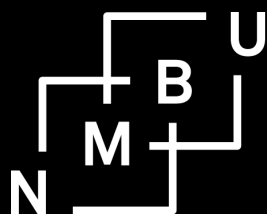
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Civil War Impacts on Youth Business Groups in Tigray: A Pre-Analysis Plan and Documentation for Ethical Approval by Institutional Review Board at NMBU

By Stein T. Holden, Mesfin Tilahun, Dag Einar Sommervoll, and Erlend Dancke Sandorf
School of Economics and Business, Norwegian University of Life Sciences (NMBU), Ås,
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Ås, June 16th, 2023.



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Summary

This is a revised plan for the finalization of the “Youth Groups for Sustainable Development: Lessons from the Ethiopian Model” (Researcher project under NORGLOBAL2, funded by the Research Council of Norway). The project started in 2019 and was planned to last for four years. A civil war broke out in the study areas in November 2020 and made it impossible to continue the project according to the initial plan. A lot of survey and experimental data had already been collected by this time and the project was in the process of implementing a number of Randomized Control Trials (RCTs) on business group training, leadership, and women’s empowerment. These RCTs were planned implemented and analyzed in collaboration with a number of international partners. We were unfortunately unable to do this. The civil war lasted for two years and a substantial share of the project funds were locked into local banks and the local collaborating university (Mekelle University) that were closed down during the civil war. We asked for an extension of the project to the end of 2023 and was granted this by the Research Council of Norway – to enable us to do a final assessment what has happened to the youth groups, their members, and families during the civil war and to assess the youth (business) groups’ role in the recreation of the members’ livelihoods after the civil war.

We were informed on June 15th, 2023, that the project funds that have been locked in the bank in Mekelle since the civil war started can be accessed through Mekelle University for the continuation of the project fieldwork. We submitted this plan and application for ethical approval at NMBU on June 16th, 2023. Approval was received on August 3rd, 2023. Some minor revisions were implemented based on the review and further preparation of baseline data from 2019. Training of the field team and programming of final survey instruments with translation into the local language *Tigrinya* started immediately. The training and pilot testing of the instruments were completed by August 19th, 2023. The actual fieldwork started on August 22nd after some final editing of the experiments. This report thus presents the final instruments.

Keywords: Civil war, business groups, impact assessment, group performance, assets, trust, social and economic preferences, welfare outcomes.

1. Background

The project aimed to study the performance of formalized youth group business cooperatives in northern Ethiopia. These were part of a government strategy to create employment for landless and near landless rural youth. The youth businesses were allocated rehabilitated communal land that they were required to protect. At the same time, they were required to invest in a joint income-generating activity on the land. Such activities included forestry, livestock production, bee keeping, horticulture, and irrigation. The youth businesses were established in a semi-arid climate and climate risk is a fundamental threat to their livelihoods and causes their businesses and investments to be risky. Risk assessment and management was therefore fundamental and necessary to succeed with the establishment of sustainable joint businesses.

The project has three main components and combines surveys and field experiments:

- a) Assess the effect of group leader training and incentives on quality of leadership and group performance
- b) Assess gender differences and group performance effects of female group member empowerment training in use of mobile phones for business planning and marketing
- c) Assess how climate shock experiences and climate risk awareness and risk management training affect youth preferences, behavior, and livelihood strategies.

The four years research project started in January 2019. A baseline census in 2016 identified 742 youth groups in five districts, with average group size of 19 members and about one third of the members were women. Each group has a board of five members with a leader and vice-leader. Most groups were established after 2011. A severe drought affected many of the groups in 2015-16. The project involved researchers from Norwegian University of Life Sciences (project leader), Mekelle University in northern Ethiopia, Christian Michelsen Institute, Wageningen University (The Netherlands), University of Queensland (Australia), and Osnabrück University (Germany). The civil war made it impossible to continue the planned RCTs that were to be carried out in collaboration with the partners in Wageningen University (The Netherlands), University of Queensland (Australia), and Osnabrück University (Germany). The researchers from Norwegian University of Life Sciences and Mekelle University have continued working on the analysis and publishing of papers based on the survey and experimental data collected on the youth business groups before the civil war broke out. The project succeeded in collecting very comprehensive and good baseline data and data to assess the performance of the business groups before the civil war started. We provide a summary of the findings in these studies below as these form as a very strong basis also for assessing the impacts of the civil war on the youth business groups, its members, and families. It provides an opportunity for a test of the youth business group model under extreme stress. It is of interest to know whether any of the groups managed to survive as businesses during the two years of civil war, whether the group identity and collaboration was important in their survival strategies during the civil war, and whether the youth business group activities re-emerge after the civil war (resilience of the groups).

2. A review of published and unpublished papers documenting the youth business groups

We present our main papers of relevance from our study of youth business groups in Tigray.

Stein T. Holden and Mesfin Tilahun (2018). [The importance of Ostrom's Design Principles: Youth group performance in northern Ethiopia](#). *World Development*, 104: 10-30.

Abstract: Youth unemployment and migration are growing challenges that need more political attention in many countries, particularly countries with rapid population growth and economic transformation. Proactively mobilizing the youth as a resource in the creation of sustainable livelihoods can potentially be a win-win-win solution that Ethiopia is currently attempting. The new youth employment strategy includes allocation of rehabilitated communal lands to youth groups. This study investigates the extent to which Ostrom's Design Principles (DPs) are followed and matter for the early performance of youth groups in terms of their stability, trust and overall performance. Data from a census of 742 youth groups in five districts in Tigray in northern Ethiopia is used. This study utilizes econometric methods to assess correlations between the DPs and a range of early performance indicators. The study contributes to the limited literature on local collective action utilizing large samples. We find a high degree of compliance with the DPs. Some of the DPs appeared more important for early performance of the youth groups. The Ethiopian youth group approach to mobilize landless and unemployed youth is promising and should be tested elsewhere. Further longitudinal research is needed on the Ethiopian model as it is still at an early stage of testing as most groups are less than five years old.

Stein T. Holden and Mesfin Tilahun (2021). [Are land-poor youth accessing rented land? Evidence from northern Ethiopia](#). *Land Use Policy*, doi: 10.1016 / j.landusepol.2021.105516

Abstract: Continued population growth in densely populated parts of Sub-Saharan Africa makes it harder for youth to choose agriculture as main source of income. We investigate whether near landless youth can access rented land as a source of income. We used data collected in 2016 (from 1138 youths in 119 youth business groups) and 2019 (from 2427 youths in 246 business groups), in five districts of Tigray region of Ethiopia. We find that 42% of the youth had access to rented land in 2016 and 47% in 2019. The average area rented land was 0.66 ha in 2016 and 0.74 ha in 2019. Access to rented land, though constrained, accounted close to 70% in 2016 and 61% in 2019 of the average operated land by youth group members. Male youth who own oxen and ploughs are much more likely to rent land whereas female youth group members appeared generally disadvantaged in their access to rented land and other complementary sources of income. Sharecropping dominated as the main form of land rental contract covering 94% of the contracts in 2016 and 90% of the contracts in 2019. Utilizing a trust game to elicit trust and trustworthiness of the youth, we found a positive association between trustworthiness and particularly accessing land from non-relatives. The prohibition of land sales limits the potential of the "agricultural ladder" to facilitate youth climbing out of poverty through purchase of land. Overall, the land rental market has become more important for land access of land-poor youth and is likely to grow in importance to facilitate rural transformation and diversification of rural livelihoods as land scarcity grows and market access improves. Thus, it appears that the land rental market has helped many of these very land-poor youth to establish sustainable land-based livelihoods. While the land rental market does not function perfectly, we recommend not to intervene to change the fundamental characteristics or to impose area restrictions in the market as has been attempted recently in Ethiopia. Such restrictions can easily cause more harm than good.

Stein T. Holden and Mesfin Tilahun (2021). [Preferences, trust, and performance in youth business groups](#). *PLOS ONE*, doi: 10.1371 / journal.pone.0257637

Abstract: We study how social preferences and norms of reciprocity are related to generalized (outgroup) and particularized (ingroup) trust among members of youth business groups in northern Ethiopia. The Ethiopian government promotes youth employment among land-poor rural youth by allocating them rehabilitated communal lands for the formation of sustainable businesses. The typical sustainable production activities that the groups can invest in include apiculture, forestry, horticulture, and livestock production. Our study used incentivized experiments to elicit social preferences, trust, and trustworthiness. We use data from 2427 group members in 246 functioning business groups collected in 2019. Altruistic and egalitarian preferences were associated with stronger norms to

reciprocate, higher outgroup and ingroup trustworthiness and trust while spiteful and selfish preferences had opposite effects. The social preferences had both direct and indirect effects (through the norm to reciprocate) on trustworthiness and trust. Ingroup trust was positively correlated with a number of group performance indicators.

Stein T. Holden and Mesfin Tilahun (2021). [Mobile phones, leadership and gender in rural business groups](#). *World Development Perspectives*, doi: 10.1016/j.wdp.2021.100370

Abstract: Digital information and communication technologies are recognized as vital tools for empowering marginalized groups such as women in low income developing countries through reducing the costs of communication and connectivity. This study aimed at assessing the gender difference in mobile phone ownership among youth business group members, and how it affects election into leadership and group board positions in rural youth business groups in northern Ethiopia. We used instrumental variable methods on survey data on 1125 youths in 119 youth business groups where 32% of the members were female. Our results indicated that 37% of the females and 70% of the males owned mobile phones. Male members were twice as likely to become board members and five times as likely to become group leaders. Mobile phones had become instrumental for male members to become group leaders and board members while this was not the case for female members. Male members without mobile phone were not significantly more likely to become board members or group leaders than female members without and with mobile phones. The gender digital divide is thus a question of both ownership and the use of mobile phones for business and for getting positions that can empower women in business. Further research should investigate whether provision of mobile phones and training of female business members in use of mobile phones for business can lead to female empowerment and thereby eliminate or reduce the observed digital gender discrimination.

Stein T. Holden and Mesfin Tilahun (2022). [Are risk preferences explaining gender differences in investment behavior?](#) *Journal of Behavioral and Experimental Economics*, doi: 10.1016/j.socec.2022.101949.

Abstract: We analyze individual investment behavior among 822 young men and women that are members of 111 formal business groups in northern Ethiopia. We collected baseline data and investment data one year later combined with incentivized field experiments to obtain dis-aggregated risk preference data. We find that businesswomen on average invest significantly less at individual level than businessmen but Cohen's d values for the [gender difference](#) are moderate in size. Women are found to have higher Constant Relative Risk Aversion (CRRA- r) coefficients (more concave utility function), to be more loss averse, but also to be more optimistic in their expectations (lower Prelec β) than men. Women were also poorer in non-land assets, came from more land-poor parents, and had lower incomes. The gender differences in risk attitudes and baseline endowments could explain some of but not all of the gender differences in investment behavior.

Stein T. Holden and Mesfin Tilahun (2023). How are social preferences of youth related to their motivation to invest in environmental conservation (local public goods)? [Chapter 4 in Behavioural Economics and the Environment](#). A Research Companion, edited by Alessandro Bucciol, Alessandro Tavoni, and Marcella Veronesi.

Abstract: We have used simple incentivized social preference experiments for a sample of 2427 resource-poor rural youth that have formed natural-resource based youth business groups in their home communities. The experiments were combined with questions investigating their attitudes towards environmental conservation and willingness to contribute to conservation of local natural resources related to a compulsory labor contribution program. The paper investigates whether and how the revealed social preferences are associated with the attitudes towards environmental conservation and explores the spatial heterogeneity of conservation attitudes. It tests whether youth with altruistic and egalitarian social preferences are associated with stronger motivations for contributing to the compulsory conservation program than youth with selfish and spiteful preferences. Our study finds

evidence in support of this hypothesis. We also find evidence of substantial spatial variation in the attitudes towards the environmental conservation program and much of this heterogeneity seems to be determined at the community (*tabia*) level which is the lowest administrative level and the level at which the compulsory conservation program is organized. In general, we find strong support for the compulsory conservation work program among the youth. 97% of the youth agree or strongly agree that the program is very important to protect the natural resource base and secure the future livelihoods in their community. On average the subjects were willing to contribute 19.4 days/year free labor to the program, which was close to the current requirement of 20 days/year.

Mesfin Tilahun and Stein T. Holden (2023). Livelihood diversification and migration intentions among land-poor youth: do they correlate with livestock assets, trust, and trustworthiness? *Frontiers in Sustainable Food Systems Securing Land, Livelihoods and Food Security*, Volume 7 – 2023. [Frontiers | Livelihood diversification and migration intentions among land-poor youth in Tigray, Northern Ethiopia: do they correlate with livestock assets, trust, and trustworthiness? \(frontiersin.org\)](https://www.frontiersin.org/articles/10.3389/fsu.2023.1154211/full)

Abstract: Youth unemployment has been prevalent in Ethiopia. Over the past decades, efforts to rehabilitate degraded communal lands have been taking place in Ethiopia. This has created the opportunity to organize landless and land-poor youth and implement a policy of allocating rehabilitated lands for youth to engage in agriculture as a livelihood option. However, whether these rural youth will remain in agriculture or choose other livelihood options including migration, and how their trusting behaviors (trust and trustworthiness) and other factors influence their choices are worth investigating and are the aims of this study. This will help our understanding of what would incentivize the youth to enhance their livelihoods. We used data collected from samples of 1,138 youth group members in the 2016 survey and from 2,427 youth group members in the 2019 survey in five districts of the Tigray region of Northern Ethiopia. Our results from panel data multinomial logit and probit models show that the number of oxen, access to land in the land rental market, and income from youth group activity significantly correlated with youth group members' choices for livelihood options and planning for migrating out of the country. A higher number of oxen owned by the youth group members are associated with a higher likelihood that the youth choose agriculture as a livelihood. Youth group members with a larger number of oxen are also less likely to plan for migration. We also found that more trusting youth group members are more likely to choose off-farm employment relative to staying in agriculture than less trusting members. More trustworthy members are less likely to migrate and more likely to stay in agriculture because trustworthiness is associated with better access to land in the rental market. Thus, improving youth group members' access to land and their asset endowments such as oxen for increasing the productivity of youth group activity and hence income would incentivize youth group members to stay in agriculture and enhance youth group activity as a sustainable livelihood.

3. Research Questions for Assessing Civil War Impacts: Outcome indicators and key variables of interest

The final round of surveys and experiments in the project aim to find out:

- 1) How the civil war affected the youth business groups and their business activities and lessons learnt in this relation when it comes to the sustainability of the groups and their suitability for creating youth livelihoods in the study area.
- 2) How the civil war affected the youth business group members and their families, including survival and exposure to war incidents, survival strategies, assets, food security, and income sources.
- 3) How the war effected the youth business group members in terms of their social and economic preferences, and trust.

3.1.Outcome indicators

The following tables list the outcome indicators for the three main Research Questions above. The outcome indicators are found among the variables collected in previous survey rounds at group and group member level in the project as well as in the group member experiments that mapped individual social and economic preferences, and trust.

Table 1. Group level outcome indicators (Research question 1)

	Variable	Data Collection	
		Before	After
	<u>Survival of youth business groups</u>		X
	<u>Survival of the group as a social network with group meetings</u>		X
	Exact time of collapse for business groups that have collapsed		X
	Factors triggering the collapse of groups and group business activities		X
	<u>Group business assets (trees, irrigation technologies, beehives, livestock, buildings, other equipment)</u>	X	X
	<u>Group membership survival by gender (group size)</u>	X	X
	<u>Group board survival and gender balance</u>	X	X
	<u>Group legal recognition in community</u>	X	X
	<u>Economic Performance</u>		
	Group annual net income per group member (if any)	X	X
	Average group member work contribution to group business (mandays/month in 2023 vs 2018-19)	X	X
	Average net income per worker per manday of work last year.	X	X
	Group capital investments per member during project period	X	X
	Group activity		
	Frequency of group meetings (number of group meetings/month)	X	X
	Participation rate during group meetings	X	X
	Satisfaction with group members' performance	X	X
	Share of members that have been punished by the group for poor performance per year	X	X
	Group engagement in other social welfare related activities in community		X

Table 2. Individual group members and family impact indicators (Research question 2)

	Survey variables	Data Collection	
		Before	After
1.	Survival and main occupation of group members	X	X
2.	Participation in youth business group	X	X
3.	Participation in group meetings and social network	X	X
4.	Asset ownership and income sources	X	X
5.	Investments during last year	X	X
6.	Assessment of role and importance of business group for own livelihood	X	X
7.	Own contribution to group activity during last year	X	X
8.	Interest in restarting group activity if stopped during civil war		X
9.	Parent family size, number of members	X	X
10.	Farm size of parent family	X	X
11.	Asset ownership of parent family (livestock, houses, equipment)	X	X
12.	Damages inflicted during the war on persons in the family		X
13.	Damages inflicted during the war on family assets		X
14.	Food security situation of the parent household during and after the civil war		X

Table 3. Experimental outcome indicators (Research question 3).

		Data collection	
		Before	After
	<i>Group level (aggregated from individual variables)</i>		
	In-group vs. out-group social preferences	x	x
	In-group vs out-group trust and trustworthiness	x	x
	<i>Individual level</i>		
	In-group vs. out-group social preferences	x	x
	In-group vs out-group trust and trustworthiness	x	x
	Risk preferences	x	x
	Time preferences	x	x

3.2. Comments and explanations on outcome indicators

Research question 1. Group performance indicators:

- *Survival of youth business groups.* This is an indicator whether the group still exists as a formal business group.
- *Survival of the group as a social network with group meetings.* This is an indicator whether the group still functions as a group even though its business group activity has stopped.
- *Exact time of collapse for business groups that have collapsed.* Specify year and month.
- *Factors triggering the collapse of groups and group business activities.* This variable tries to map the events that contributed to the collapse of business groups.
- *Group business assets (trees, irrigation technologies, beehives, livestock, buildings, other equipment).* This variable will take account of the changes in business group assets associated with the war with the pre-war situation as a baseline.
- *Group membership survival by gender.* This will take stock of group members (group size), whether they are still members (if groups still exist), have dropped out, and their current status, by gender, and whether the civil war impacts had specific gender dimensions for the group's members.
- *Group board survival and gender balance.* Number of female members in group board for groups that still exist. Groups with female leader or vice leader.
- *Group legal recognition in community:* Is the group still recognized as a legal entity and does it retain access to the allocated resources such that the business activity can be continued or restarted.
- *Group annual net income per group member (if any):* This is the group net income between July 1, 2022 and June 30, 2023 (may need revision depending when we can start) for the groups that are active in this period. It is gross income to group business subtracted by cash expenditures including debt repayments and other cash expenditures. This net income is what may be considered return to group members' labor input and joint land+investment endowment. This information is to be obtained from the accountant of the business group. Group net income is stochastic and can also take on negative values and is having a skewed distribution. Inverse hyperbolic sine (IHS) transformation will be used for this variable to handle possible negative and zero observations to obtain a better distribution of this variable.
- *Average group member work contribution to group business (mandays/month):* This information will be obtained from all group members of all active groups that participate in the baseline and endline surveys (up to 12 members per group) and is averaged across group members. The period should be the last month before the survey. The estimate is accompanied

with an assessment of the representativeness of last month compared to the rest of last year with a possible average figure per month over the last year if that is found to be more representative. Possibly the total mandays of work per member last year should be recorded based on individual interviews or alternatively records kept by board members (have to assess the existence and quality/completeness of such records).

- *Average net income per worker per manday of work last year.* This requires combining the two previous key variables and an ability to get total workdays last year per group member.
- *Group capital investments per member during project period.* This is the aggregate investments in Ethiopian Birr in the period July 2019-July 2023 (4 years) divided by the average number of group members in that period.
- *Frequency of group meetings (number of group meetings/month).* For groups that have survived the war.
- *Participation rate during group meetings.* To be collected for groups that are still active during endline survey.
- *Satisfaction with group members' performance.* Assessment by group leader/board member for groups that are still active.
- *Share of members that have been punished by the group for poor performance per year.* To assess whether the group justice system still operates for groups that are still active at the time of the endline survey.
- *Group engagement in other social welfare related activities in community.* Assess whether the groups are engaged in other community welfare related activities (even if their group business may have collapsed).

Research question 2. Individual group members and family impact indicators

- *Survival and main occupation of group members.* This applies to the situation during the civil war and after the civil war.
- *Participation in youth business group.* This applies to the situation during the civil war and after the civil war.
- *Participation in group meetings and social network.* This applies to the situation during the civil war and after the civil war.
- *Asset ownership and income sources.* This applies to the situation during the civil war and after the civil war, including loss of assets and reasons for asset losses. Current asset ownership and income sources.
- *Investments during last year.* This includes private investments made by members after the war ended.
- *Assessment of role and importance of business group for own livelihood.* This is to assess whether the youth group had any important functions for the members during the civil war and afterwards.
- *Own contribution to group activity during last year.* How members contributed to the social network and other group activities during the civil war and afterwards.
- *Interest in restarting group activity if stopped during civil war.* This is about the potential role that members see in the youth business group as a livelihood opportunity in the near future.
- *Family of members:*
- *Parent family size, number of members.* How the civil war affected the parent household and members and the current status of the parent family composition.
- *Farm size of parent family.* Assesses whether the land endowment of the parent households have changed during or after the war and possible reasons why.

- *Asset ownership of parent family (livestock, houses, equipment).* Assess whether the parent family lost assets during the war and how this happened and to take stock of their asset ownership status at the endline survey.
- *Damages inflicted during the war on persons in the family.* Recording of any war incidences that threatened the life and human rights of household members.
- *Damages inflicted during the war on family assets.* Recording of any war incidents that caused damage to and loss of family assets during the war.
- *Food security situation of the parent household during and after the civil war.* Recording the severity of food shortages for the family during the civil war. Current status of family food security.

Research question 3. Experimental outcome indicators: Social and economic preferences and trust

The endline experiments will use the same approach as in earlier rounds for the same youth business groups and group members to assess the stability or changes in these preference and trust variables and how the civil war impacts may have contributed to changes in preferences and trust (Holden and Tilahun 2019, 2021, 2022, 2023; Holden et al. 2022). These experiments were incentivized with cash payouts that also enhanced the participation by the business group members in both the surveys and experiments as a compensation for their time involvement. Cash is likely to be even more scarce at the time we implement the endline survey and experiments and is likely to lead a high participation rate.

- *Ingroup and outgroup social preferences:* In-group and out-group social preferences measures with a set of simple dictator games. A comparison of the in-group social preferences at the endpoint with those at the baseline. Social preference type distributions within and across groups and their stability over time will be used.
- *Ingroup and outgroup trust and trustworthiness:* Ingroup and outgroup trust and trustworthiness are measured with the standard trust game. A comparison of ingroup trust and trustworthiness at the end of the project with ingroup trust and trustworthiness before the civil war as average values across members within groups will be used to assess changes over time at group level.
- *Risk preferences:* Risk preferences are measured using Multiple Choice Lists (Holden and Tilahun 2022) and the endline experiments will use the same approach to assess whether the civil war and the variation in severity of its impact on group members has impacted the risk preferences of members.
- *Time preferences:* Time preferences are also measured with Multiple Choice Lists (Holden et al. 2022) and the endline experiments will use the same approach to assess whether the civil war and the variation in severity of its impacts on group members has impacted their time preferences. Risk and time preferences are important for understanding the investment decisions of business group members. This may matter for their resilience and re-establishment.

3.3.Causal impact from the war: Severity of war variables and causality

Overall, the civil war had a tremendous impact on everybody in our study areas during and after the two years it lasted from November 2020. The war impact may therefore be studied by comparing the situation before and after for the key outcome variables. However, we will also try to capture and utilize the variation in severity of war exposure. The civil war had variable impacts in different locations. Such

variation could be due to the randomness of the spatial distribution of the war activities. An example is provided by Nyssen et al. (2023). They present the example of a lucky village in Tigray in one of our study districts (woredas), Degua Tembien. This village did not have any war incidents in terms of fighting, looting, raping, or killing of civilians during the war period. They managed to hide and keep their food reserves although their food production was severely affected during the two years due to lack of farm inputs such as seeds and fertilizer. The vegetation was also affected by the cutting of trees for charcoal production, and they had to sell their livestock at very low prices to buy food at high prices. We will use a number of dummy variables to capture the seriousness of the war impact on each of the youth group members (e.g. direct exposure to violence (fighting, sexual abuse, beating, looting, starvation), their families (same indicators), and the groups themselves (aggregate measures from group members as well as for group assets). We will utilize the spatial variation in these variables as random causal variables to measure the variation in the severity civil war impact on some of the key outcome variables such as the experimental social and economic preferences and trust variables.

Attrition in our sample can also be a direct consequence of the war and we will assess the explanations for why subjects in our sample are not available in our endline survey and experiments. We will try to obtain information about members that are not present at the time of the endline survey by asking other members that are present and possibly other community officials about what has happened to them.

For many outcome variables (e.g. asset ownership, investments, preferences, trust, group survival and performance for groups that still are active), we can compare the situation before and after the civil war and we can relate the difference to the variation in severity in exposure to the war. This implies a natural experiment approach. Testing and controlling for attrition bias will be important in this type of analysis.

3.4.Hypotheses and hypothesis testing

We do not have many pre-determined hypotheses as we think the war exposure can have many diverse effects although the effects on welfare and assets are obviously negative for all. To allow us to use exploratory approaches in the analysis while avoiding false discoveries (Olken 2015; Miguel 2021), we apply a split-sample approach with an exploratory and a confirmatory sample (Anderson and Magruder 2017; Fafchamps and Labonne 2017). The exploratory sample will be used to develop more specific hypotheses that then will be tested with the confirmatory sample. We follow the advice of Anderson and Magruder (2017) and use a fairly small exploratory sample (20%) and a larger (80%) confirmatory sample. We will still propose some pre-determined hypotheses related to the youth business groups that are interesting to test:

H1) Well-organized youth groups before the war were more likely to survive the war and help its members during and after the war (resilience).

H2) High-trust groups (before the war) were more able to survive and have been more important for its members to protect their livelihoods (avoid asset losses).

Beyond these two key hypotheses we have a keen interest in understanding some of the underlying mechanisms of how the civil war may have affected social and economic preferences and thereby behavior and outcomes. Besides that, we cannot rule out that e.g. risk preferences have affected individual behavior associated with the war and this may also have influenced war outcomes and e.g. attrition in our sample. E.g. have risk-lovers (based on our pre-war data) taken larger risks during the civil war and are they less likely to be found in 2023 than others? There are mixed evidences on how risk preferences are affected by shocks so we will analyze such possible effects without any pre-specified hypotheses although we have found that the 2015 drought resulted in our sample to become more willing to take risks. We will explore whether such shock effects affect the utility function or the probability weighting function (and expectation formation) for our sample, based on the basic split-sample approach. Sample-splitting may here also be used for severity of shock exposure/type of

shock/timing of shock. Transparency in testing procedures will be essential for replicability of the analyses. Random sampling will be used for the selection of the exploratory sample vs. confirmation sample.

4. Ethical and legal issues

4.1. Prior informed consent

All participants are always informed about the project, the project objectives, responsible institutions, and the type of data that will be collected from them, the use of incentivized experiments with cash incentives that also serve as compensation for the time they spend answering questions and participating in experiments. In every survey and experiment they are asked whether they are willing to participate. All data collection rests on their willingness to participate as a group and as members of their group. This has resulted in some attrition in our sample exposed to repeated visits over time and such attrition is expected to go up in the final planned round, most likely as a consequence of the two years of civil war.

4.2. Anonymity

Youth business group leaders and members are informed that their identifies will be protected and not disclosed to anybody outside the research team. The research team needs to keep a list of groups and participants as data are collected repeatedly from the same groups and members over the years the project lasts. The identify information is kept separately from the data shared and uploaded to public depositories and data banks based on the open access sharing requirements in relation to publication of research findings. The project will avoid using any identity information and pictures of project participants to ensure their anonymity.

In some of the social experiments, participants are paired and play with each other. In all such cases, the participants never know who the other person that they play with is. If they play with another member of their own group, the pairing of the members is always randomized and anonymized. Privacy is ensured in the provision of payouts to each member.

4.3. Use of incentivized experiments

The project uses standard experimental tools applied by behavioral and experimental economists in field experiments to elicit subjects' social and economic preferences and trust. Monetary incentives are used in these experiments, and the monetary incentives both serve to enhance data quality and to compensate the participants for the time they spend answering survey questions and participating in the experiments. The experiments are designed to reveal important behavioral aspects related to the functioning of the youth business groups (such as cooperation), and to obtain measures of subjects' risk and time preferences that are important for understanding their investment behavior as individuals and as group members. The respondents are informed that the payouts from the experiments partly depends on their decisions and priorities, and partly depend on luck based on the use of a randomization tool used in the experiments.

While the project initially planned a number of Randomized Control Trials (RCTs), the civil war made it impossible to implement and complete these.

4.4. Intellectual property rights

School of Economics and Business, NMBU, take the main responsibility for data storage, cleaning, and sharing of anonymized data. This will follow NFR guidelines.

The project will collect or generate data about people.

The project will collect and/or process sensitive or personally identifiable data.

The project Pre-Analysis Plan is evaluated by the Institutional Review Board of NMBU.

5. Data security, handling, and storage

Given funding, the project will submit a data management plan. This will include already collected data and new data to be collected to ensure FAIR principles (findable, accessible, interoperable and reusable), safe storage during and after the end of the project based on the RCN and NMBU standards.

5.1.Principal coordinator for data management

The project leader (Stein T. Holden) will take the main responsibility for management and storage of the data. Mesfin Tilahun at Mekelle University will be in charge of the data collection in the field and uploading and checking of the raw data.

5.2.Metadata

Standard procedures for variable description will be followed. The data will be complemented with the survey instruments and experimental protocols used for data collection and experimental implementation.

5.3.Data security and access control

Original version in Data management plan: (The researchers responsible for each work package will be the first to access and work on the specific work package data. They will check data quality and implement the required analyses according to the project plan. Final cleaned data will be made available for other interested users at the end of the project. For certain purposes data may be released for other purposes before that, as long as this is not in conflict with the project objectives and realized output from the project. Data for each work package will be anonymized before they are made available to partners in the project. Data sharing with partners will be through a secure sharing system on a cloud server (system under development by the IT-service at NMBU (more details on this later when the system has been fully established)).

Update 31.05.2023: The civil war made it impossible to implement the planned RCTs that also were to be developed and analyzed in collaboration with international partners. The core project participants (Stein T. Holden, Mesfin Tilahun) have therefore taken the main responsibility for the handling and analyses of the data collected in the initial surveys and field experiments. They will also take the responsibility for the handling of the data from the endline survey and experiments and share with relevant collaborators that are interested in getting involved.

5.4.Data storage and backup

The data will be collected by a research team of field enumerators, supervisors and a data organizer that will be closely monitored by Mesfin Tilahun and Stein Holden. Mesfin Tilahun is the Ethiopian researcher in charge of field data collection in close collaboration with Stein Holden who will be

responsible for the final data management and storage. Both Mesfin Tilahun and Stein Holden will keep the files that link individual, group and community ids with the anonymized ids. The data will be backed up by storage in the secure cloud servers. They will collaborate closely on the data checking, cleaning and management. Stein Holden will be responsible for the main data bank and distribute the relevant data to the researchers involved in the various packages.

5.5.Data structuring and versioning

The data will be grouped by Survey round (general data to be used across work packages) Data relevant for each Work Package will be grouped by work package The files will be grouped within packages/categories as Raw (initial) data with a date when they are saved Cleaned data will be developed from the raw data and by date the cleaning is finished. Cleaned data will be anonymized wrt individual, group and community identifiers by use of unique codes for individuals, groups and communities. A separate file where these codes are matched with names is kept by Stein Holden and Mesfin Tilahun (Ethiopian data manager) and is not distributed to others. Compiled datasets for the completion of analyses for the specific outputs will be stored under each data package and are the types of files that will be released in relation to the publication of papers.

6.Long-term preservation and sharing of data

6.1.Data value

The raw and cleaned data sets will be stored with NSD → SIKT together with the relevant data description. These data are anonymized.

6.2. Data accessibility

Access can only be provided for anonymized data to protect the respondents. Names of groups, group member and communities will therefore have to be removed from all data sets before they can be shared. The data will therefore be prepared in this way for public access.

6.3. Access restrictions

We would like to establish a system which allows us to keep track of who gets access to and uses the data. This should also involve signing an agreement to not use the data in ways that are ethically problematic and to acknowledge the data source. Use by others should not be in conflict with the publication plans of the project.

6.4. Long-term preservation

It is expected that these data will lead to follow-up research by the involved researchers and there are also likely to be spin-off research ideas beyond the project objectives where the data will be useful. Such use may be relevant several years after the end of the project. The project leader will take responsibility for assessing such an interest at the end of the project and how it should best be handled.

6.5. Persistent identifiers

This has not yet been decided. We may have to come back to this and decide later whether to publish the data in this way.

6.6. Costs

The data may be of interest for researchers doing meta-studies, especially the experimental data with standardized experiments. Hopefully, the standard stored data will be sufficiently detailed for such needs and there should be no additional costs related to their use then.

Situations may occur that we have not thought of and we should be prepared to change or include more details about such issues in the data management plan as needs arise.

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New Revised Survey Instruments

The survey instruments are translated to the local language, Tigrinya, and programmed in CSPro for doing the interviews with tablets.

Youth group level:

Mekelle University

In collaboration with

Norwegian University of Life Sciences

Youth Group Survey 2023, Tigray, Ethiopia

Zone _____

Code _____

Woreda _____

Code _____

Tabia _____

Code _____

Kushet _____

Code _____

Date of interview

Enumerator _____

Code _____

Signature _____

Checked by: _____

Code _____

Signature _____

Accepted for data entry, date: _____

Date of data entry _____

Data entry operator _____

Code _____

Signature _____

Table for location codes

Zone	Wereda	Tabia
01 = Southern	10= Raya Azebo	
02 = South East	20 = Degua Temben,	
	30 = Seharti Samire	
03 = Eastern	40 = Kilite Awlalo	
04 = Central	50 = Adwa	

1. General information on the Youth group (Prefilled from Tabia/Woreda secondary data – prefilled data from 2019 survey)

S.No.	To be filled from secondary sources as far as possible	Unit	Response
1	Group name	Name	
2	Group Leader's name (2019)	Name	
3	Telephone Number	Number	
4	Group number (ID)	Number	
7	Main activity 1=Irrigation, 2=Cattle fattening, 3=Cattle rearing 4=Goats/Sheep fattening, 5=Goat/Sheep rearing, 6=Bee keeping, 7=Dairy cow, 8=Poultry, 9=Other animals, 10=Eucalyptus, 11=Fruit trees/vegetables/agroforestry,	Code(s)	
9	Land area allocated to the youth group in hectares	Ha	
10	Type of land allocated: 1=Hillside 2=Exclosure, 3=Hillside with bench terrace, 4=Rehabilitated gully, 5=Grazing land, 6=Rehabilitated grazing land, 7=Land for mining stone/cobblestone, 8=Land for mining sand, 8=Other specify:	Code (s)	
11	Number of members February 2019	Number	
11a.	Number of members interviewed in 2019 (check who of these are available in 2023 for interviews)	Number	
12	Male members February 2019	Number	
13	Female members February 2019	Number	
	Status of group August 2023:		
14	Person responding on behalf of group	Name	
15	Persons (past) position(s) in group: 1=Chairman, 2=Vice chairman, 3=Accountant, 4=Secretary, 5=Treasury, 6=Other group member(s)	Code	
15a	Mekelle University in collaboration with Norwegian University of Life Sciences has since 2016 been conducting research on youth groups, land allocation and performance in Tigray. Your group has earlier been selected to participate in this research and surveys. In this survey round you will be asked to respond to all questions in an interview about the status of the youth group. You will receive a monetary compensation of ETB ? (To be decided as a reasonable amount for the time involvement). We hope you are willing to participate and help provide the information about the group and its members.	Agree to participate: 1=Yes, 0=No	
16	Is the group currently active?	1=yes, 0=no	
17	If, yes, has the group been functioning during the two years of civil war?	1=yes, 0=no	
18	If yes, number of members as of August 2023	Number	
19	If yes, number of male members August 2023	Number	
20	If yes, number of female members August 2023	Number	
16	Number of members that have dropped out since 2019 (time of our last survey)	Number	

17	Number of male members that have dropped out since 2019	Number	
18	Number of female members that have dropped out since 2019	Number	
19	Number of new members that have been added to replace dropped out members since 2019	Number	
20	Number of male members that have been added to replace dropped out members since 2019	Number	
21	Number of female members that have been added to replace dropped out members since 2019	Number	
22	If some members have dropped out since 2019, what were the reasons? 1=Lack of motivation, 2=Migrated, 3=Lack of complementary income, 4=Activity of group not rewarding enough, 5=Lack of training/skills for the activity, 6=Lack of funds to invest in the activity, 7=Internal conflicts in the group, 8=Health problem, 9=Civil war, 10=Disagreement within group, 11=Death, 12=Severe illness/injury, 13=Other, specify:	More than one code, may separate by person	
23	If there were dropouts, indicate at what time each person dropped out (month and year GC)	Dropout 1 Dropout 2 Dropout 3 Dropout 4 Dropout 5	
21	If no to q.16, when did the group stop functioning	Year Month	
22	Reasons for the group stopped functioning: 1=Outbreak of civil war, 2=Members dissolved the group before the civil war started, 3=Activity became unprofitable for the group, 4=Group lost its assets, 5=Members left the community, 6=Other, explain	Code(s)	
23	If no to q.17, in which period did the group temporarily stop functioning as a business group?	From Year Month To Year Month	
24	If the group stopped functioning as a business group, did it still function as a social network group that came together during the civil war? 1=Yes, 0=No, 2=Partially (some members)	Code	
24a	Approx. Number of group meetings during and after the civil war by year	2021: Number 2022: Number 2023: Number	
24b	Approx. Number of members who participated in group meetings by year during the civil war and after (average number of members per meeting)	2021: Number 2022: Number 2023: Number	
24c	Satisfaction with the participating group members' performance during and after the civil war: 1=Very good, 2=Quite good, 3=Variable, 4=Not so good, 5=Very poor.	Code	
24d	Number of members that have been punished by the group for poor performance per year	2021: Number 2022: Number 2023: Number	

25	If the group functioned as a social group, did the group engage in some activities during the civil war? If yes, explain:	1=yes, 0=no	
26	If the group was dissolved, can you provide an overview of what the previous group members currently are doing? M1: Migrated number, M2: Stay in community number, M3: Died number, M4: Other, specify:	Code: Number	
27	Number of members that are available and can be interviewed	Number	
28	Were any of the assets of the group destroyed or lost during the civil war?		
28a	Specify the main asset(s) lost or damaged: 1=Trees, 2=Bee hives, 3=Sheep, 4=Goats, 5=Cattle, 6=Buildings, 7=Irrigation equipment, 8=Tools, 9=Other, specify:	1=yes, 0=no Code(s)	
29	Specify the stock of trees, animals, buildings and machinery that is jointly owned by the group in August 2023 1=Fruit trees: F1=Papaya, F2=Orange, F3=Mango, F4=Avocado, F5=Guava, F6= Other, specify 3a=Bee hives with bees: Modern 3b=Bee hives with bees: Traditional 3c=Bee hives without bees: Modern 3d=Bee hives without bees: Traditional 4=Sheep 5=Goats 6a=Calves, traditional breed 6b=Calves, crossbred 6c=Heifers, traditional breed 6d=Heifers, crossbred 6e=Bulls, traditional 6f=Bulls, crossbred 6g=Dairy cows, traditional breed 6h=Dairy cows, crossbred 6i=Oxen, traditional breed 6j=Oxen, crossbred 7=Donkey 8=Mule 9=Camel 10=Chicken 14=Seedlings, S1=Eucalyptus, S2=Fruit trees, S3= 15=Grass for fodder 16=Eucalyptus 17=Other, specify 21=Animal shelter 22=Storage building 23=Hut 24=Other building/structure: 31=Irrigation pump 32=Other irrigation equipment 33=Tools 34=	Code: Number: Value in ETB	

	35=		
30	Specify in more detail the types of products that were sold by the group in 2023, if any 1=Fruit trees: F1=Papaya, F2=Orange, F3=Mango, F4=Avocado, F5=Guava, F6= 2=Vegetables: V1=Tomato, V2=Onion, V3=Cabbage, V4=Chili, V5=Gesho, V6= 3=Honey: 4=Fattened sheep 5=Fattened goats 6=Fattened cattle 7=Dairy milk 8=Chicken 9=Eggs 14=Seedlings, S1=Eucalyptus, S2=Fruit trees, S3= 15=Grass for fodder 16=Eucalyptus poles 17=Other, specify	Specific outputs, quantify and value if sold during last year (2023)	
31	Specify in more detail the types of investments the youth group has made on their land and the eventual cost in EB in the last 4 years (2019-2023): 1=Animals purchased 2=Bee hives 3=Tree seedlings 4=Seeds/Fertilizer/other inputs 5=Irrigation pumps 6=Buildings 7=Other, specify	Codes: Type and total value in EB for the group	
32	How do you rate the current level of trust among group members in your youth group (members that are still around – even though the group may not be functioning)? Use the general level of trust in your community (tabia) as a reference level. 1=Much higher, 2=Higher, 3=The same, 4=Lower, 5=Much lower	Code	
33	If the group is currently not functioning as a business group, do the group members still retain the land rights to the land that was allocated to them? 1=Yes, 0=No, 2=Unclear	Code	
34	Is the land area allocated to the group well taken care of during the civil war? 1=Yes, 0=No		
35	If no, what are the damages on the area? 1=Damage by fire, 2=Trees have been cut down and removed, 3=Conservation structures destroyed, 4=Other, specify:	Code(s)	
36	If no to q.34, damages by whom?		

Mekelle University

In collaboration with

Norwegian University of Life Sciences

Youth Group Member Survey 2023, Tigray, Ethiopia

Zone _____

Code _____

Woreda _____

Code _____

Tabia _____

Code _____

Kushet _____

Code _____

Date of interview

Enumerator _____

Code _____

Table for location codes

Zone	Wereda	Tabia
01 = Southern	10= Raya Azebo	
02 = South East	20 = Degua Temben,	
	30 = Seharti Samire	
03 = Eastern	40 = Kilite Awlalo	
04 = Central	50 = Adwa	

Introduction and Experiments (Part 1)

S.No.	Question	Unit	Response
1	Date	Date	
2	Time when interview starts	Hour:Minute	
3	What is the name of the School where the interview is done?	Name	
4	Youth Group number (ID) (from Youth Group Survey)	Number	
5	Youth Group Member ID (from earlier Member Survey)	Number	
6	Name of Youth Group Member	Code	
<p>Mekelle University in collaboration with Norwegian University of Life Sciences has since 2016 been conducting research on youth groups, land allocation and performance in Tigray. You have earlier been selected to participate in this interview as a member of a youth group. In this survey round you will be asked to respond to all questions in an interview and we will also play some experiments with you where you will be able to earn some money. The amount you earn will depend on your decisions as well as your luck in the experiments and responses by other youth group members. We hope you are willing to participate this time as well.</p>			
7	Are you willing to participate in the survey and experiments? 1=Yes, 0=No	Code	
	Game set 1		
a.	We will introduce to you eight sharing games where you will decide what you prefer.		
b.	You will have a chance to earn money by participation in these games and your answers will affect how much you and some others will get.		
c.	Only one game will result in pay out but you do not know which one when you make your answers .		
d.	A lottery will determine which ones will be for real after all the games are played.		
e.	By making careful answers in each game, you have a greater chance of getting your preferred payout.		
S1	Sharing game 1: You can choose between two sharing options between yourself and another unknown member of your own youth group: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of your own youth group Option 2: 80 ETB for yourself AND 0 ETB for another unknown member of your own youth group	Choice of sharing option: 1 or 2	
S2	Sharing game 2: You can choose between two sharing options between yourself and an unknown member of another youth group in your woreda: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of another youth group in the woreda Option 2: 80 ETB for yourself AND 0 ETB for another unknown member of another youth group in the woreda	Choice of sharing option: 1 or 2	
S3	Sharing game 3: You can choose between two sharing options between yourself and another unknown member of your own youth group: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of your own youth group Option 2: 80 ETB for yourself AND 160 ETB for another unknown member of your own youth group	Choice of sharing option: 1 or 2	
S4	Sharing game 4: You can choose between two sharing options between yourself and an unknown member of another youth group in your woreda: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of another youth group in the woreda Option 2: 80 ETB for yourself AND 160 ETB for another	Choice of sharing option: 1 or 2	

	unknown member of another youth group in the woreda		
S5	Sharing game 5: You can choose between two sharing options between yourself and another unknown member of your own youth group: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of your own youth group Option 2: 160 ETB for yourself AND 0 ETB for another unknown member of your own youth group	Choice of sharing option: 1 or 2	
S6	Sharing game 6: You can choose between two sharing options between yourself and an unknown member of another youth group in your woreda: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of another youth group in the woreda Option 2: 160 ETB for yourself AND 0 ETB for another unknown member of another youth group in the woreda	Choice of sharing option: 1 or 2	
S7	Sharing game 7: You can choose between two sharing options between yourself and another unknown member of your own youth group: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of another youth group in the woreda Option 2: 120 ETB for yourself AND 160 ETB for another unknown member of another youth group in the woreda	Choice of sharing option: 1 or 2	
S8	Sharing game 8: You can choose between two sharing options between yourself and another unknown member of another youth group in your woreda: Option 1: 80 ETB for yourself AND 80 ETB for another unknown member of another youth group in the woreda Option 2: 120 ETB for yourself AND 160 ETB for another unknown member of another youth group in the woreda	Choice of sharing option: 1 or 2	
G1 (S1-S8)	Lottery to determine which of the games is real will take place at the end of the survey interview		
	Game set 2 There will be a sequence of four games and one will be for real but you do not know till afterwards which one will be real. It is therefore important to make a careful decision in each. The game which will be real will be determined by a lottery. <ol style="list-style-type: none"> In each game you will be given an amount you can decide to keep or share with another person. That other person is either one anonymous member of your own youth group or a member of another youth group in your woreda. The lottery will determine who the other person is in the real game. You will never find out who the other player you give to is and s/he will not know from whom they have received the money, just whether it is a member of own group or from a member of another group. 		

	<p>e. In these games the receiving persons are not asked to return any of the money you have given to them but they will play the same types of games like you.</p> <p>f. You are free to do whatever you want in these games, e.g. decide to take all the money yourself or to give everything to the other person or share the money in any proportion between yourself and the other (unknown) person.</p> <p>Enumerator instruction: Put 80 ETB in 10 ETB notes and an envelope in front of the respondent.</p>		
D1	You are given 80 ETB and can decide to give some to another unknown member of your own youth group and this person (decided by a lottery) will receive this exact amount you give if this becomes the real game.	Out of 80 ETB you will give	ETB:
D2	You are given 80 ETB and can decide to give some to another unknown member of another youth group in your woreda and this person (decided by a lottery) will receive this exact amount you give if this becomes the real game.	Out of 80 ETB you will give	ETB:
D3	You are given 80 ETB and can decide to give some to another unknown member of your own youth group and this person (decided by a lottery) will receive three times the amount you give if this becomes the real game.	Out of 80 ETB you will give	ETB:
D4	You are given 80 ETB and can decide to give some to another unknown member of another youth group in your woreda and this person (decided by a lottery) will receive three times the amount you give if this becomes the real game.	Out of 80 ETB you will give	ETB:
G2 (D1-D4)	<p>Lottery to determine which of the four games will be real is coming at the end of the survey interview.</p> <p>Game set 3 Instructions:</p> <p>This is an experiment in two stages. You will play with another anonymous person. This person will either be a member of your own youth group or a member of another youth group in your district. You will never find out who the person you play with is. The experiment is about trust and trustworthiness and involves money to be sent between you and the other person. You will be both a sender and a receiver of money who decides whether to return some of the money received to the sender.</p> <p>As a sender you will first receive 80 ETB that you will decide over (split in eight 10 ETB notes). You may decide to keep the whole 80 ETB for yourself or to invest the whole or part of it (as much as you want). The amount you invest will be tripled by us (e.g. if you invest 10 ETB we triple it to 30 ETB or if you invest the whole 80 ETB, we triple it to 240 ETB. We put the tripled amount into an envelope for your investment. The same is done for all group members in your youth group and other youth groups in your district.</p> <p>Before you know whether you will play with another person in your own group or another person in another youth group in your district, we ask you to decide how much you will invest in each of these, knowing that only one of these will be selected for real. A lottery with equal chance for each will determine who of these you will play with.</p> <p>We also want to know how much you as a receiver will return of the tripled amount sent to you by an unknown sender in your own group or another group in the district. For each alternative amount received we want you to state how much you decide to return when the other person is from your own group and when the other person comes from another group. What you decide for each amount and for each type of person, before you</p>		

	<p>know which type of person you receive money from, will be binding for you when you receive the envelope from the real person that was decided by the lottery. You will only know whether that person comes from your own group or from another youth group in your district.</p> <p>We may give an example: If the amount you find in the envelope is 90 ETB, how much of this will you return in the cases a) the sender comes from your own group, b) the sender comes from another group in your district. You are free to decide to keep the whole amount (return nothing) or return the whole amount or any amount between all or nothing. Since we do not know what amount you will find in the envelope, we need to ask you what you would return for all possible amounts you may find in the envelope for cases a) and b). It is only when we come back next time that we will bring this envelope and we can find out how much money is there.</p> <p>We will use a lottery for the distribution of the envelope among the members in your group and among members in another youth group of the same district (Woreda).</p>		
8a	How much of the 80 ETB are you willing to invest if the tripled amount of your investment is to be sent to a random group member in your own youth group?	ETB	
8b	How much of the 80 ETB are you willing to invest if the tripled amount of your investment is to be sent to random group member in another youth group of the same district (woreda)?	ETB	
	The lottery which determines whether you will play the game with another unknown member of your own group or with an unknown member of another youth group in the woreda will come after you have answered some more questions		
	<p>We will now ask you how you would respond as a receiver of a random envelope from another member in your youth group (amount sent back) and youth group member from another youth group of the same woreda, depending on how big the amount in the envelope you receive is. You know that we have tripled the amount that the other member from you youth group and/or youth group member from another youth group of same woreda put in the envelope.</p> <p>The amounts you decide to return now will be binding for what you have to return when you get the real envelope – but the amount you find there is unknown till you open it as it depends on the decision of the sender (trustor) of that envelope. You will never know who the sender is.</p>		
10a	How much will you leave in the envelope (return to the sender who is a random anonymous person in own youth group) if the amount in the envelope is 240 ETB?	ETB	
10b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 240 ETB?	ETB	
11a	How much will you leave in the envelope (return to the sender who is a random anonymous person in own youth group) if the amount in the envelope is 180 ETB?	ETB	
11b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 180 ETB?	ETB	
12a	How much will you leave in the envelope (return to the sender who is a anonymous person in own youth group) if the amount in the envelope is 150 ETB?	ETB	

12b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 150 ETB?	ETB	
13a	How much will you leave in the envelope (return to the sender who is a random anonymous person in own youth group) if the amount in the envelope is 120 ETB?	ETB	
13b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 120 ETB?	ETB	
14a	How much will you leave in the envelope (return to the sender who is a random anonymous person in own youth group) if the amount in the envelope is 90 ETB?	ETB	
14b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 90 ETB?	ETB	
15a	How much will you leave in the envelope (return to the sender who is a random anonymous person in own youth group) if the amount in the envelope is 60 ETB?	ETB	
15b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 60 ETB?	ETB	
16a	How much will you leave in the envelope (return to the sender who is a random anonymous person in own youth group) if the amount in the envelope is 30 ETB?	ETB	
16b	How much will you leave in the envelope (return to the sender who is a random anonymous member of another youth group in the same district (woreda)) if the amount in the envelope is 30 ETB?	ETB	
17a	How much of the tripled amount you have sent to the random member of your youth group do you expect to get back? 1=Less than one third, 2=One third, 3=Half, 4=more than half, 5=Nothing as I sent nothing, 6=Nothing, although I sent some.	Code	
17b	How much of the tripled amount you have sent to the random member of another youth group in same woreda do you expect to get back? 1=Less than one third, 2=One third, 3=Half, 4=more than half, 5=Nothing as I sent nothing, 6=Nothing although I sent some	Code	
18a	As a receiver in the game, how obliged do you feel to return an amount at least as big as the amount sent by the anonymous sender from your own youth group? 1=Extremely obliged, 2=Somewhat obliged, 3=Not obliged at all.	Code	
18b	As a receiver in the game, how obliged do you feel to return an amount at least as big as the amount sent by the sender from another youth group of the same woreda? 1=Extremely obliged, 2=Somewhat obliged, 3=Not obliged at all.	Code	
G3	Lottery for whether the receiver will be another person from own group or from another group: Use 20-sided die: Numbers 1-10 is for own group, Numbers 11-20 for another group in the district. The die shall be thrown only once.	Die Outcome number	
	Enumerator: Tripples the amount for the appropriate receiver and marks the envelope for whether it is for within group (I=Ingroup) or outgroup (O). The envelope is given to the Supervisor who is responsible for collecting	Env. R. No.	

	and redistributing all envelopes. The unique registration number must specify the type of game (G3), Ingroup (I) or Outgroup (O) based on the lottery, the Woreda (W) and Youth Group ID and Member ID of the sender (to make sure the envelope is returned to the correct sender).		
<p>Note: The stated amounts returned will be used also to determine how much they have to return when they get the envelopes from the unknown player they play with. E.g. if they find 90 ETB in the envelope they have to return what they stated they would return in the table above for the type of trustee they received the envelope from.</p>			
<p>Game 4. Instructions</p> <p>This is a lottery experiment with money but you may decide to buy yourself out of the lottery. We give you a lottery where you can win 240 ETB with 50% chance. Whether you win or not is determined by throwing a 20-sided die. If it lands on numbers 1-10, you lose and get nothing. If it lands on numbers 11-20 you win the 240 ETB.</p> <p>You can decide to buy yourself out of the lottery. You can get 10 ETB for sure for every 30 ETB you reduce the lottery amount with. You have to make the choice among the following alternatives before we throw the die to determine the lottery outcome:</p> <p>1=keep full lottery at 240 ETB and no sure amount, 2=reduce lottery to 210 ETB and get 10 ETB for sure, 3=reduce lottery to 180 ETB and get 20 ETB for sure, 4=reduce lottery to 150 ETB and get 30 ETB for sure, 5=reduce lottery to 120 ETB and get 40 ETB for sure, 6=reduce lottery to 90 ETB and get 50 ETB for sure, 7= reduce lottery to 60 ETB and get 60 ETB for sure, 8= reduce lottery to 30 ETB and get 70 ETB for sure, 9=convert the whole lottery to 80 ETB for sure.</p>			
18	Do you understand the game and agree to play it? 1=Yes, 2=No	Code	
19a	Out of the lottery of 240 ETB, do you want to convert some of it to sure money? 0=No, 1=Yes		
19b	<p>Out of the 240 ETB lottery that you can decide to play, how much do you want to convert to a safe amount? (30 ETB lottery amount = 10 ETB secure amount</p> <p>1=keep full lottery at 240 ETB and no sure amount, 2=reduce lottery to 210 ETB and get 10 ETB for sure, 3=reduce lottery to 180 ETB and get 20 ETB for sure, 4=reduce lottery to 150 ETB and get 30 ETB for sure, 5=reduce lottery to 120 ETB and get 40 ETB for sure, 6=reduce lottery to 90 ETB and get 50 ETB for sure, 7=reduce lottery to 60 ETB and get 60 ETB for sure, 8=reduce lottery to 30 ETB and get 70 ETB for sure, 9=convert the whole lottery to 80 ETB for sure.</p>	Code	
<p>You give the amount you decide not to risk back to the interviewer who converts it to one third of the amount. The interviewer then plays the lottery with you for the remaining lottery amount with the die where numbers 1-10 imply loss and numbers 11-20 imply that you win.</p>			
20	Outcome of lottery, 1=Win, 0=Loss if answer to 19b<7 (skip if 19b=7)	Code	
	You use a Receipt Form and fill in the amount that the respondent has secured + won in game G4. The respondent signs the form when receiving the amount		

General information on the Youth group and Member

S.No.		Unit	Response
1	Group name	Name	
2	Group Leader's name	Name	
4	Group number (ID) (from Youth Group Census) (Prefilled)	Number	
5	Year of establishment of youth group (Prefilled)	Year GC	
7a	Member information: Keep old member IDs for group members already interviewed. For new groups in 2019 we used the following system Unique Member Id 1=Leader, 2=Vice leader, 3=Secretary, 4=Accountant, 5=Treasury, 6-12=Ordinary member	Code: 1-12	
7b	Name of member	Name	
8a	Mobile number of Member	Number	
8b	Is this your personal mobile phone? 1=Yes, 0=No		
9	Age of member (cross check with year & month of birth)	Years	
10	Sex of member, 1=Female, 0=Male	Code	
11	Have you been a member of the group since its establishment? 1=Yes, 0=No, I joined at a later stage	Code	
12	If you joined the group at a later stage, when was this?	Year GC	
13	What is your position in the group currently? 1=Leader, 2=Vice-leader, 3=Secretary, 4=Accountant, 5=Treasury, 6=Ordinary member	Code	
14	H ave you had any of the (other) board positions earlier? 1=Yes, 0=No	Code	
15	If yes, which position(s) did you have earlier? 1=Leader, 2=Vice-leader, 3=Secretary, 4=Accountant, 5=Treasury	Code(s)	
16	If yes, which period did you have this position?	From year To year	
17	Marital status: 1=Unmarried, 2=Married, 3=Separated, 4=Divorced, 5=Widowed	Code	
18	Where do you live? 1=In the house of parents, 2=Own house on separate place, 3=Own house on farm of parents, 4=Live in house of in-laws, 5=Other, specify:	Code	
19	Status of youth business group during civil war: 1=Active, partly or fully, 2=Business activity stopped, but group continued to meet, 3=Group activity stopped, some members continued to meet, 4=Group collapsed and no more contact between earlier members, 5=Other, explain:	Code	
20	Were you an active member of the group during (part of) the civil war period? 1=Yes, 0=No	Code	
21	How many business group meetings did you participate in before, during the civil war, and after (by year)	2020: Number 2021: Number 2022: Number 2023: Number	

22	Do you see the business group as an important source of livelihood for yourself after the civil war to reestablish your livelihood? 1=Yes, for sure, 2=Yes, hope so, 3=Yes, but uncertain, 4=Doubt it but perhaps, 5=No, lost hope in it.	Code	
23	Give reasons for the response above: Open comments		
24	What kind of war incidences did you experience during the civil war? 1=Being threatened to be killed by soldiers, 2=Harassment, 3=Rape, 4=Violence, 5=Looting, 6=Food shortage/Starvation, 7=Wounded, 8=Other, explain	Code(s)	
25	Were you forced to temporarily migrate/hide during the civil war? 1=Yes, 0=No		
26	What were your main source of livelihood (food and other basic needs) during the civil war? 1=Own food production (on own, family, and rented land), 2=Help from family (parents), 3=Help from community, 4=Trade, 5=Extraction of natural resources, 6=Other, specify:	Code(s)	
27	Do you consider to migrate out of the country (again or for the first time?), 1=Yes, 0=No, 2=Do not know	Code	
28	If yes, what is holding you back? 1=Family responsibilities, 2=Risk of migration, 3=High cost of migration, 4=Youth group membership and opportunity, 5=Other, specify:	Code(s)	
29	If no, what is holding you back? 1=Family responsibilities, 2=Risk of migration, 3=High cost of migration, 4= Youth group membership and opportunity, 5=Other, specify:	Code(s)	
	Personal endowments at the time of the survey (August(?) 2023)		
31	Indicate which of these types of personal endowments you own: 1=Ox(en), 2=Plough, 3=Cow(s), 4=Donkey/Mule/Horse, 5=Camel, 6=Cart for ox or donkey/mule/horse, 7=Bicycle, 8=Motorbike, 9=House, 10=Other, specify: 11=None	Code(s)	
31a	Indicate if you had any of these endowments before the civil war but that you lost these during the war: Codes as above. Endowments lost	Code(s)	
31b	If you lost important assets during the war, list these and the main reason they were lost during the war 1. Important asset 1: 1a. Reason for loss: Codes: 1=Broken, 2=Stolen, 3=Died, 4=Sold, 5=Burnt, 6=Other, specify: 2. Important asset 2: 2a. Reason for loss: 3. Important asset 3: 3a. Reason for loss 4. Important asset 4: 4a. Reason for loss	Code(s)	1: 1a: 2: 2a: 3: 3a: 4: 4a:

32a	If you have a personal mobile phone, when did you first obtain such a phone? _____	Year (GC)	
32b	When did you buy the mobile phone you currently have?	Year (GC)	
32c	What make is your mobile phone?	Make/model	
32cc	Is your mobile a smart phone? 1=Yes, 0=No	Code	
32d	How much did you pay for the phone you currently have?	ETB	
32e	What is approximately your monthly expenditure for using the mobile?	ETB	
32f	Indicate (tick) the types of things you use your mobile phone for after the war and rank the three most important uses:	Tick	Rank (1-3)
	i) Communicate with family/friends ii) Communicate with other youth group members iii) Use it for private business iv) Use it to organize youth group activities v) Use it to communicate with tabia authorities vi) Use it to obtain market information (prices, availability etc.) vii) Use it for entertainment (listening music, playing games etc.) viii) Other uses:		
32g	For how long were you unable to use your mobile phone due to the war?	From year, month To year, month	
32h	Is it currently possible to use the mobile phone like before the war? 1=Yes, 2=Yes but network is less reliable, 3=No, 4=Other, specify:		
	Family situation and land access for the family		
33	Are your parents still alive? 0=No, 1=Yes, both of them, 2=Only my father, 3=Only my mother	Code	
34	Does your parent(s) still hold a farm in the tabia ? 1=Yes, 0=No	Code	
35	How many family members live with your parent household currently?		
36	Were there any changes in the family composition during the civil war?	0=No, 1=Yes	
37	If yes, what were the changes? 1=Reduced family size, 2=Increased family size, 3=Change in family composition	Code	
38	Explain reasons for change in family composition: 1=Death of family member(s), 2=Member(s) left the household, 3=New member(s) moved in, 4=New member(s) were born	Code(s)	
39	Specify the details of changes in family composition (if 1 above: who died and for what reason)		
40	Were any family members face any direct war incidents causing personal damages? 1=Yes, 0=No		
41	If yes, specify: 1=Killed, 2=Exposed to violence, 3=Threats, 4=Rape, 5=Destruction of property, 6=Looting, 7=Starvation/extreme food shortage, 8=Other, specify	Code(s)	

42	Were any family assets lost or damaged during the war?	0=No, 1=Yes	
43	How was the food security situation of the family during the civil war?		
44	How did the family cope with the food insecurity situation during the war? Main coping activities: 1=Ration food reserves by reducing the number of meals per day and amount of food eaten per meal, 2=Slaughter and eat own animals, 3=Sell animals and buy food, 4=Sell assets to buy food, 5=Grow own crops, 6=Collect edible plants from the forest, 7=Cut trees to sell and buy food, 8=Obtain help from community, 9=Obtain help from relatives, 10=Other, specify:	Rank by number code Rank 1 Rank 2 Rank 3 Rank 4	
45	Rank the three most serious threats to your survival and livelihood during the civil war: 1=Loss of life due to war incidents, 2=Exposure to violence, 3=Injury/sickness and lack of medical treatment, 4=Rape, 5=Starvation, 6=Severe food shortage, 7=Other, specify:	Rank 1 Rank 2 Rank 3	
	Resilience/Restitution after the civil war:		
46	How satisfied are you with your current livelihood situation? 1=Very satisfied, 2=Quite satisfied, 3=Acceptable situation, 4=Not satisfied, 5=Very unsatisfied (unbearable situation)	Code	
47	If answer 4 or 5, provide additional information: Reasons for level of satisfaction Specify:		
48	What are the main challenges you currently face in relation to your livelihood? 1=Lack of/Limited cash income, 2=Low/No income from youth group activity, 3=Lack of complementary sources of income, 4=Poor cooperation in youth group, 5=Poor housing conditions, 6=Poor market access for outputs & inputs, 7=Lack of skills, 8=Lack of capital for investments, 9=Insecure tenure rights for the land, 10=Food shortage, 11=Other, specify:	Code Rank 1 Rank 2 Rank 3	
49	Have you experienced some form of shock(s) after the civil war ended in November 2022?	1=Yes, 0=No	
50	If yes, type(s) of serious shocks (indicate more than one if relevant): 1=Death in family, 2=Sickness in family, 3=Crop failure, 4=Loss of job opportunity, 5=Personal sickness, 6=Violence, 7=Theft, 8=Other, specify:	Code (s)	

51	Rank up to three shocks, 1=most severe (put code from above)	Rank 1 Rank 2 Rank 3	
52	What are the main sources of livelihood (income) you have now after the civil war ended? 1=Crop production on own farm, 2=Crop production on rented land, 3=Joint production with parent family, 4=Youth business group activity, 5=Trade, 6=Other non-farm business, 7=Construction worker, 8=Other, specify:		
53	If you rent in land, how many land rental and sharecropping contracts do you have in 2023?	Number	
54	Did you access any land through the land rental market in any earlier years (before the civil war started)? 1=Yes, 0=No	Code	
55	Were you able to rent any land for food production during the civil war period? 1=Yes, 0=No	Code	
56	If you rented in land the last 12 months, how much land did you rent (and sharecrop) in?	Tsimdi	
57	If your youth group stopped functioning during the civil war, how likely is it that you will try to get it re-established in the near future if it has not yet been restarted? 0=Not possible, 1=Very unlikely, 2=Quite unlikely, 3=Quite likely, 4=Very likely.		
58	If your youth group is still functioning, how likely is it that you will give up the youth group activity and look for another source of livelihood? 0=I have already given it up, 1=Very unlikely, 2=Quite unlikely, 3=Quite likely, 4=Very likely.	Code	
59	What are the most important advantages you see from having joined the youth group? 1=Allows me to develop a livelihood in my own tabia/stay close with family, 2=Good social relation within the youth group/share responsibilities, 3=Can be combined with other activities – an additional source of income, 4=Helps to generate capital for investment in the future, 5=No benefits after the civil war started, 6=Other, specify:	Code(s) Rank 1 (most important) Rank 2	
60	In your youth group, how satisfied are you with your fellow youth group members' performance? 1=Very satisfied with all members, 2=Very satisfied with most members, 3=Quite satisfied with most members, 4=Not satisfied with how the group majority performs, 5=Very unsatisfied with group performance	Code	
61	How satisfied are you with the (other) board members in your youth group, overall? 1=Very satisfied, 2=Quite satisfied, 3=Acceptable, 4=Somewhat unsatisfied, 5=Very unsatisfied	Code	
62	Are you satisfied with how meetings are arranged in your group? 1=Yes, 0=No	Code	
63	Is the frequency of meetings ok? 1=There are too many meetings, 2=The frequency is ok, 3=There are too few meetings	Code	
64	Are you satisfied with how the group work activities are organized? 1=Yes, 0=No	Code	
65	How do you rate the level of trust among group members in your youth group? Use the level of trust among members in your own	Code	

	family (parents, brothers, sisters) as a reference level. 1=Much higher, 2=Higher, 3=The same, 4=Lower, 5=Much lower		
66	How do you rate the level of trust among group members in your youth group? Use the level of trust among members in your group before the civil war started, as a reference level. 1=Much higher, 2=Higher, 3=The same, 4=Lower, 5=Much lower	Code	
67	If there has been a change in the level of trust among the group members since the civil war started, what are the main explanations for this? 1=Less joint activity, 2=Less frequent meetings, 3=Group has collapsed, 4=Disagreements among members over group assets, 5=Civil war has reduced trust in general, 6=Civil war has increased trust and cooperation in the community, 7=Other, specify:	Rank 1 Rank 2 Rank 3	
68	Did you make any investments in durable goods or assets during 2023 ?	1=Yes, 0=No	
69	If yes, type(s) of investments: a) Consumer goods, specify: 1=Mobile phone, 2=Radio, 3=Bicycle, 4=Furniture, 5=Other, specify: b) Animals, specify: 1=Cow, 2=Ox, 3=Donkey, 4=Sheep, 5=Goat, 6=Chicken, 7=Beehive, 8=Camel, 9=Horse, 10=Mule c) Other productive assets: 1=Plough, 2=Ox-cart, 3=Hoe, 4=Sickle, 5=Other tools, 6=Fertilizer, 7=Improved seeds, 8=Other, specify: d) Other investments: 1=House, 2=Travel, 3=Business, specify:	Code(s)	a: b: c: d:
70	If you have invested in any of the four categories over the last year, how much (ETB) did you invest in each during 2023 ? a) Consumer goods, specify: 1=Mobile phone, 2=Radio, 3=Bicycle, 4=Furniture, 5=Other, specify: b) Animals, specify: 1=Cow, 2=Ox, 3=Donkey, 4=Sheep, 5=Goat, 6=Chicken, 7=Beehive, 8=Camel, 9=Horse, 10=Mule c) Other productive assets: 1=Plough, 2=Donkey/horse-cart, 3=Hoe, 4=Sickle, 5=Other tools, 6=Fertilizer, 7=Improved seeds, 8=Other, specify: d) Other investments: 1=House, 2=Travel, 3=Business, specify:	ETB	a: b: c: d:
71	What are your future investment plans? What are your most preferred items to invest in over the coming 1-2 years? Rank by most preferred (Rank 1)	Use codes from above (letter +	Rank 1

	a) Consumer goods, specify: 1=Mobile phone, 2=Radio, 3=Bicycle, 4=Furniture, 5=Other, specify: b) Animals, specify: 1=Cow, 2=Ox, 3=Donkey, 4=Sheep, 5=Goat, 6=Chicken, 7=Beehive, 8=Camel, 9=Horse, 10=Mule c) Other productive assets: 1=Plough, 2=Ox-cart, 3=Hoe, 4=Sickle, 5=Other tools, 6=Fertilizer, 7=Improved seeds, 8=Other, specify: d) Other investments: 1=House, 2=Travel, 3=Business, specify:	number, e.g. goat=b 5	Rank 2	
		Rank 1:	b	Rank 3
			5	

	Second part of Game 3		
G3	You receive an envelope (from the Supervisor) from an Ingroup (anonymous member in your own group) or and Outgroup (anonymous member in another group in your district). We give you the envelope so that you can open it and see the amount.		
1	How big amount did you find in the envelope? 1=0, 2=15, 3=30, 4=45, 5=60, 6=75, 7=90	Code	
2	Envelope Registration Number (not to be asked to the respondent but for the enumerator to verify)	Number	
3	Check stated amount to be kept given by type of trustor (Ingroup or Outgroup) and amount found in the envelope by going back to the answers in G3 Game questions 10a-15b.	Et. Birr	
4	Ensure correct amount is put in the envelope to be returned to the sender (trustor). Give this envelope to the Supervisor who will return it to the sender (immediately for ingroup members and as soon as possible for outgroup members – we need to discuss how best to do this we may have to wait till next survey round)	Et. Birr	
5	Return the sent envelope to the sender with the returned amount=	Et. Birr	
6	The respondent has to sign the Receipt Form for the amount taken from the envelope		

	Final game arrangements (random sampling of games, payouts, etc. You need to do the random selection of real games first (G1 & G2) and get the envelope from the sender (ingroup or outgroup member) in G3 (trust game), before you can go back and check their choices which affect their payouts and transfers to other youth group members in each of these three games. Each respondent will be a sender of 3 envelopes (G1, G2 & G3) and a receiver of 3 envelopes (G1, G2 & G3). It will vary whether each of these envelopes is for an Ingroup or an Outgroup member. The supervisor has to orchestrate this. The distribution of G1 and G2 and the return of the G3 envelopes to the sender can be made in the Second Experiment and Survey round because of the need to redistribute envelopes across groups.		
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G1	<p>Lottery to determine which of the six games will be real: Use the 20-sided die: Assign die numbers 1 and 11 to game S1, die numbers 2 and 12 to game 2=S2 and up to die numbers 8 and 18 to game S8. Shake the die under the cup once to see if you get a number below 19 to identify the game to choose. If die number above 18, shake the die once more to get a number below 19. The outcome determines which game was real and how much money is put in an envelope for the other unknown member</p> <p>All envelopes should have a unique registration number. Record the unique envelope registration number</p> <p>Write on the envelope the game type outcome (S1, S2, S3, S4, S5, S6): Real game: 1=S1, 2= S2, 3=S3, 4=S4, 5=S5, 6=S6, 7=S7, 8=S8</p> <p>Amount to be received by the respondent: Put aside for respondent The respondent has to sign the Receipt Form when receiving this amount.</p> <p>Amount to be sent to another youth group member: Put in envelope</p> <p>All envelopes should have a unique registration number that distinguishes: G1 & (Ingroup: S1, S3, S5, S7) for other members in own group, Outgroup: S2, S4, S6, S8) for members in other group in woreda. Record the unique envelope registration number</p>	<p>Die number drawn (1,2...20)</p> <p>Real Game drawn: 1, 2, 3, 4, 5, 6, 7, 8</p> <p>ETB</p> <p>ETB</p> <p>Envelope R.No.</p>	
G2	<p>Lottery to determine which of the four games will be real: Use the 20-sided die and cup (die numbers 1-5 (game 1=D1), die numbers 6-10 (game 2=D2), die numbers 11-15 (game 3=D3) and die numbers 16-20 (game 4=D4). Shake the die in the cup only once to determine the die number and thereby the chosen game (1-4). The draw determines which game was real and how much money is put in an envelope for the other member</p> <p>Amount to be received by the respondent: Put aside for respondent The respondent has to sign the Receipt Form when receiving this amount.</p> <p>Amount to be sent to another youth group member: Put in envelope</p> <p>Write on the envelope the game type (G2) outcome & whether it is Ingroup (D1, D3) or Outgroup (D2, D4): Amounts in D3 and D4 envelopes have to be tripled. Real game: 1= D1, 2=D2, 3=D3,4= D4</p>	<p>Die number drawn (1,2...20)</p> <p>Real Game drawn: 1, 2, 3, 4</p> <p>ETB</p> <p>ETB</p>	
	<p>All envelopes should have unique registration number. This unique number should specify the Game type (G1-G3), whether it is for Ingroup (I) or Outgroup (O), the specific Woreda (W) within which outgroup envelopes have to be redistributed, the group name and Member ID (for cross-validation of questionnaires and amounts found in envelopes. Record the unique envelope registration number: E.g. G2ID1 for an Ingroup envelope and e.g. G2OD4 for an outgroup envelope where the given amount has been tripled, Woreda code (W+number 1-5), Youth group ID, & Member ID (for verification).</p>	<p>Envelope R.No.</p>	

We would like to thank you for good cooperation and participation in the interview and would like you to at the end sign for the amounts of cash that you have received related to the experiments.

5	Time when experiment finished and forms signed	Hour:Minu	
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Mekelle University
In collaboration with
Norwegian University of Life Sciences

Youth Group Member Time and risk preference experiments
Tigray, Ethiopia

Zone _____ Code _____ Woreda _____ Code _____ Tabia _____ Code _____

Kushet Name _____

Enumerator _____ Code _____

Table for location codes

Zone	Wereda	Tabia
01 = Southern	10= Raya Azebo	
02 = South East	20 = Degua Temben,	
	30 = Seharti Samire	
04 = Central	50 = Adwa	

S.No	Question	Unit	Response
1	Date	Date	
2	Time when experiment starts	Hour:Minute	
3	Location where the interview is done?	Name	
4	Youth Group number (ID) (from Youth Group Survey)	Number	
5	Youth Group Member ID	Number	
6	Name of Youth Group Member	Name	

Time preference without risk experiments and Time preference with risk experiments
ካብ ሓደጋ/ስግኣት ነፃ ዝኾነ ናይ ግዜ ሕርያን ስግኣት/ሓደጋ ዘለዎ ናይ ግዜ ሕርያን ፈተነታት

Instructions to Enumerators and Supervisors
መምርሒ ንመረዳኢታ ኣክብትን ሱፐርቪዘርታን

- a. ኣብ ናይ 2015 ዓ.ም ናይ ስግኣት/ሓደጋን ግዜ ሕርያን ናይ 2011 ዓ.ም ፅሚቕ ትሕዝቶ ንዋጋ ናህሪ ኣብ ግምት ብዘእተ መልክዑ ዲዛይን ተገይሩ እዩ። ኣብዚ ሓዲሽ ዲዛይን ኩሎም እቶም 20 ዝርዝር ኣማራጻታት ንናይ ብሓቂ ግንዛብ ዘርከብ ፀወታ ማዕረ ናይ ምምራፅ ዕድል ክህልዎም ኣለዎ። ኩሎም ክፍሊታት ድማ ሓደ ሰሙን ድሕሪ ፈተነ ምክያዱ ወይ ድሕሪኡ (6 ወይ 12 ኣዋርሕ ንቕድሚት ኣብ ዘሎ ግዜ) ክፍፀም ኣለዎ።

The 2023 format or risk and time preference experiments is consisting of a compressed combination of the designs used in 2019 that are integrated and inflation-adjusted. All the 20 CLs in the new design should have an equal chance of being randomly chosen as the CL for real payout. All payouts should take place one week after the experiments or later (6 or 12 months into the future).

- b. ቅደም ሰዓብ እቶም ፈተነታት ከምዝስዕብ ይኸውን፡
- 2 ዝርዝር ኣማራጻታት ናይ ግዜ ሕርያ 6 ወይ 12 ኣዋርሕ ንውሓት እዋን ዘለዎን ድሕሪ ሓደ ሰሙን ካብ ሎሚ
 - 6 ዝርዝር ኣማራጻታት ግዜ ሕርያ ክፍሊቶም ድማ ድሕሪ ሓደ ሰሙን ካብ ሎሚ
 - 12 ዝርዝር ኣማራጻታት ናይ ግዜ ሕርያ 6 ወይ 12 ኣዋርሕ ንውሓት እዋን ዘለዎን ሓደጋ/ስግኣት ዘለዎ ከምኡ'ውን ርጉፅ ዝኾነ መጠን ድሕሪ ሓደ ሰሙን

The sequence of the experiments will be as follows:

- 2 CLs with time preference with 6 and 12 months horizon vs. one week from now.
 - 6 CLs with risk preference with payouts one week from now
 - 12 CLs with risky prospects with payouts 6 and 12 months into the future vs. certain amounts with payout 1 week into the future.
- c. ንኩሎም ዝርዝር ኣማራጻታት ከምቲ ዝሓለፈ ተመሳሳሊ መስርሕ ብምጥቃም ብኣጋጣሚ ዝተመረፀ መበገሊ መስመር ብምውሳድን ቅልጡፍ ዝኾነ ምውፅእኻን ተግባራዊ ክኾን እዩ። ኩሎም ወረቐት መሰረት ዝገበሩ ኮይኖም ኣከብቲ መረዳኢታ ንሕድሕድ መላሊ 20 ዝርዝር ኣማራጻታት ዝሓዘ መጠይቕ ዝተነፀረ ነጥቢ መቐይሮ ክመልኡ ክግበር እዩ። ከምቲ ሕሉፍ ነጥቢ መቐይሮ ንምርካብ ተወሳኺ መስመር ኣብ ታሕቲ ኣድላዪ እንተኾይኑ ክትውስኹ ትኽእሉ ኢኹም።

The same procedure as before with random starting row and rapid elicitation approach will be used for all CLs. All will be paper-based and enumerators use the Questionnaire with 20 CLs to be filled with identified switch points in each CL for each respondent. Like before, you may add rows at the bottom if that is necessary to find a switch point.

- d. ድሕሪ ምዝዛም ኩሎም እቶም ዝርዝር ኣማራጻታት፣ 20 ግፅ ዘለዎ ዳይ ብምጥቃም ካብቶም ዝርዝር ኣማራጻታት ናይ እማን ገንዘብ ክኸፈሎ ብዕጫ ክፍለ ይግበር። እቲ ዝተመረፀ ኣማራጺ ወይ መደዳ ዘንጊዑ ክኸፈል እንድሕር ዘመለኸት ኮይኑ ኩሎም ክፍሊታት ድሕሪ ሓደ ሰሙን፣ ወይ ድሕሪ 6 ወይ 12 ኣዋርሕ እዮም ክፍፀሙ።

After the completion of all the CLs, the 20-sided die will be used to identify the random CL for real payout. All payouts will take place one week later, or be paid 6 or 12 months later if the randomly chosen CLs and Task Rows imply delayed payout.

- e. ናይ ቅደም ሰዓብ ኢሚዛናውነት/ባያዝ ንምንካይን ፅሬት ኣፈፅማ ኣከብቲ መረዳኢታ ንምርካይን ቅደም ሰዓብ ናይ ግዜን ስግኣትን ዝርዝር ኣማራጻታት ዝተፈለለዩ ክኾን ክግበር እዩ (10 ግፅ 20 ዝርዝር ኣማራጻታት ዝሓዘ)።

The order of the time and risk CLs will be randomized (10 pages with 20 CLs) to test for order bias and quality of performance of enumerators.

- f. ኩሎም ኣባላት ማሕበር እቲ ፈተነ ኣብ ተመሳሳሊ ሰዓት ብሓደ ኣካቢ መረዳኢታ ከካይድዎ ኣለዎም። ቅደም ክብል ኣብ ዝነበረ መፅናዕቲን ፈተነታትን ዝተሰተፉ ኣባላት ጥራሕ ክነካትት ኣለና። ኣብዚ ትኽክለኛ መፍለዪ ማሕበርን መፍለዪ ኣባል ማሕበርን (group and member IDs) ኣብቲ መጠይቕ ክንመልእ እንተለና ብጣዕሚ ክንጥንቀቕ ኣለና።

- g. All members of the youth groups should do the experiments at the same time with one enumerator per group member. We should only include members that have been included in our earlier surveys and experiments. We have to be very careful to use the correct group and member IDs and write these on the questionnaires.

Instructions to Instructors/supervisors:

- We randomize the 10 pages with time and risk preference experiments (20 games or Choice Lists) to control for order bias. We create 12 different versions of the questionnaire to have a good variation of the order of the 20 games and include one of each for the 12 (maximum) respondents in each group.
- Training of enumerators: How many of the current enumerators participated in the 2019 risk and time preference survey? Those that did not participate then will need additional training. We also need to improve the training for those that participated in 2019. We can inspect the degree of enumerator bias at that time and investigate how to reduce it. This is the case for both risk and time preference experiments.
- We need to do this paper-based. Copying and arranging the instruments (randomized) needs to be done carefully.

4. Beliu needs to take responsibility for data entry like in 2019. This has to be done manually in Excel like last time. This should be done daily the day after the interview. We cannot use the tablets for these experiments as it is important to illustrate the games on the table in front of the respondents. And responses have to be recorded in the full Choice List format with switch points identified.
5. It is important to use the exact same Group and Member IDs as in the 2019 member survey and social preference experiments (there was a mix-up for some of the groups and members for the risk and time preference experiments at that time – we should avoid that this time). Instructors should carefully allocate the group and member IDs to the enumerators by cross-checking with member and group names. The lists of group members names should be kept safely by the supervisors and not be shared with anybody outside the core research team. This is crucial to protect the anonymity of the respondents.

Instructions to Enumerators

መምረሒ ንኣክብቲ መረዳእታ

Risk of starting point bias: Do as with the time preference series:

መገቢ ነጥቢ ንብዕባ ክህልዎ ዝኽእል ሓደጋ ዝተዛበዐ መልሲ፣ ንኡሎም ስዒቦም ዘለዉ ተኸታተል ናይ ግዜ ሕርያ ኣማራጻት ተግባራዊ ይኸውን፡

- a. You will identify the certain outcome that makes the respondent switch (switch point) between preferring the risky prospect to preferring the certain outcome.

እቲ መላሲ ካብቲ ስግኣት/ሓደጋ ዘለዎ ሓሳብን ርጉፅ ዝኾነ ውፅኢትን ሓሳቡ ዝቕይረሉ ነጥቢ /መቐይሮ ነጥቢ/ ክትፈሊ ኢኻ፡፡

- b. You will not explain the choice lists (CLs) to the respondent. The CLs are an organizing tool for yourself where you fill in the information from the binary choices made by the respondents.

እቶም ዝርዝር ኣማራጻት ነቲ መላሲ ኣይክትገልፁሉን ኢኻ፡፡ እቶም ዝርዝር ኣማራጻት ንፅምዲ ፅምዲ ኣማራጻት መለስቲ ዝሃብዎ መልሲ ዝምለኡሉን ንመረዳእታ ኣካቢ መረዳእታ ዝመልኡሉ መጥመሪ መሳርሒ ኮይኑ እዩ ዘገልግል፡፡

- c. Before the interview with the respondent Randomize the Task row you start with within each series (throw the die once for each Choice List).

ቅድሚ ያለ መሕትት ምጅማሩ ኣብ ሕድሕድ ተኸታተልቲ ሓሳባት ኣበይ መስመር/መደዳ ከምዝጅመር ዝውሰን ብዕጫ ይኸውን፡፡ ዳይ ብምጥቃም ድማ ንሕድ ሕድ ዝርዝር ኣማራጻት ሓደ ግዜ ጥራሕ ብምሽከርካር ይትግበር፡፡

- d. You present the binary choice for the randomly chosen Task row: Explain the probabilities of high and low outcomes in the Choice List (it varies across choice lists but is constant within the Choice List) and ask them whether they prefer the risky lottery or the Certain Amount that is stated at the randomly chosen Task row.

ኣብቲ ብዕጫ ዝተመረፀ መስመር እቲ ፅምዲ ኣማራጺ ተቕርብ፣ ኣብቲ ዝርዝር ኣማራጺ ዘሉ ዝተሓተን ዝለዓለን ውፅኢት /ኣብ ውሽጢ ሓደ ናይ ኣማራጺ ዝርዝር እቲ ውፅኢት ሓዳ ዐይነት ኮይኑ ካብ ሓደ ናይ ኣማራጺ ዝርዝር ናብ ካልእ እንትኸየድ ግን ይፈላለ እዩ/ ድማ ነቲ መላሲ ትገልፁሉ፡፡

- e. Next, you move towards the Top or Bottom of the CL, in the direction you expect a switch to check whether you get it. If they prefer the Certain Amount at the randomly chosen row, you go to the Bottom row (with the lowest Certain Amount). If the respondent prefers the risky lottery at the starting row, you go to the Top row (highest Certain Amount). If they switch choice between the lottery and certain amount you know that their switch point is somewhere between the first randomly chosen Task row and the Top or Bottom row (depending on their first choice).

ቀደሳኻ ሓሳቡ ክቕይር ይኽእል እዩ ኢልካ ናብ ዝገመትካዮ ኣንፈት ናብ ላዕላዊ ወይ ታሕተዊ ጫፍ እቲ ናይ ኣማራጻት ዝርዝር ብምኽድ ተረጋግፅ፡፡ እንድሕር ኣብቲ ብዕጫ/ብኣጋጣሚ ዝተመረፀ መስመር እቲ መላሲ ነቲ ርጉፅ ዝኾነ መጠን እንተመረፀ ናብ ታሕተዊ ጫፍ መስመር ትኸይድ/ናብቲ ዝተሓተ ርጉፅ መጠን ዘለዎ፡፡ እንድሕር እቲ መላሲ ኣብቲ ናይ መጀመርያ መስመር ነቲ ስግኣት/ሓደጋ ዘለዎ ኣማራጺ እንተመረፀ ናብቲ ላዕላዊ ጫፍ መስመር /ዝለዓለ ርጉፅ መጠን እውን ዘለዎ/ ትኸይድ፡፡ ከከም እቲ ናይ መጀመርያ ምርጫም ዝፈላለ ኮይኑ ኣብ ሞንጎ እቲ ስግኣት ዘለዎ ሎተሪን ርጉፅ ዝኾነ መጠንን ሓሳቡ እንተቐይሩ እቲ ነጥቢ መቐይሮ ኣብ ሞንጎ እቲ መጀመርያ ብዕጫ ዝተመረፀ መስመርን ላዕላዊ ወይ ታሕተዊ ጫፍ መስመርን ዝርከብ ምዃኑ ምግርዳእ ይከኣል፡፡

- f. Narrow in quickly to identify the switch point by going to the middle task between the last two tasks that were assessed and within which the switch point is located (if consistent preferences are observed).

እቲ መላሲ ኣብ መልሱ ውጥነት ዘለዎ ምዃኑ ክነስተውዕል እንተኸኢልና/ ነጥቢ መቐይሮ ቀልጠፍካ ንምፍላይን ንምፅባብን ኣብ ሞንጎ እቲ ናይ መወዳእታ ዝተሓተተ መስመርን እቲ ነጥቢ መቐይሮ ዝርከበሉን ቦታ ናብ ማእኸል መስመር ብምዃኑ ይፍለ።

Instructions to enumerators:

- You will introduce Choice Lists with more distant future (6 months and 12 months) and near future (one week from now) money options (in ETB).
- In each Choice List (CL), we keep the future amount constant while we vary the near future amount till we identify the switch point for the respondents.
- We expect only one switch point per series for responses to be consistent in that specific series.
- Make sure that you in each series make it very clear to the respondents when the two points in time are as compared to the date of the interview.
- Remind the respondent about this when presenting each binary choice to the respondents.
- They should make choices that are most preferred given their current living conditions and need for money at the different points in time that are indicated in each series.

Identification of winners. Use the randomization tool (20-sided die, cup, and board). When all games have been played you will arrange the lottery to identify winners for the time and risk preference experiments and pure risk experiments. For the time and risk experiments there is a 10% probability of the respondent becoming a winner. Use the die once to identify winners. Winners should get die number 19 or 20. You should do this carefully in front of the respondent after you have explained which numbers represent winning. You shake the die once under the cup on the board and jointly with the respondent examine the outcome.

For winners you need to identify which of the 14 series will be used for real payout. You use the die+cup again with numbers 1-14 representing each of the 14 Choice Lists (1-6 for time pref. + 1-8 for time+risk Choice Lists). If the die number is larger than 14, you make another attempt to get a number that is 14 or lower. The number you get identifies the Choice List for real payout.

This list has Task Row numbers 1-11. You use the die+cup again to identify the row number for payout. You will use the respondent's choice at this Task row number as the basis for payout. You identify the timing of the payout and whether it is a lottery or certain payout. If it is a lottery you use the die-cup again to find the outcome of the lottery by assigning die numbers according to the probability of winning. A reward card is issued to the respondent as a guarantee for the future payment including the amount and timing of the payment.

Instructions to respondents:

መምርሒ ንመለስቲ

- You will be asked to respond to a series of money payment options at different points in time in the future that **range between 1 week and 1 year**.
ንቕፃሊ ኣብ ውሽጢ 1 ሰሙንን 1 ዓመትን ኣብ ዘሊ ግዜ ኣብ ዝተፈላለዩ ናይ ግዜ ንውሓት ዝኸፈለካ/ዝወሃበካ ዝተፈላለዩ ንገዘብ ዘርከቡ ኣማራፅታት ክቕርቡልካ እዮም።
- The distance into the future as well as the amounts will vary from game to game and you shall always in each case indicate which of the two options you prefer, given your current situation and future anticipated needs.
ንውሓት እቲ ግዜ ከምኡ ውን እቲ መጠን ንገዘብ ካብ ሓደ ፀወታ ናብ ካልእ ፀወታ ዝፈላለ ኮይኑ ኣብ ሕድሕድ መስመር ካብ ዝቕርቡ ፅምዲ ፅምዲ ኣማራፅታት ሕዚ ዘለካ ኩነታትን ንቕፃሊ ክህልወካ ዝኸእል ድሌትን ኣብ ግምት ብምእታው ክትመርፅ ኣለካ።
- Make sure you make careful decisions as you do not know which of these games will become subject to real payout after you have answered all the questions. You only know for certain that one of the games will be randomly sampled for real payout.
ካብዞም ኩሎም ፀወታታት ኣቕዲምካ ኣየናይ ፀወታ ናይ ብሓቂ ንገዘብ ዘርከብ ምዃኑ ስለዘይተፈልጦን ኮሎም ምስ መለስካ ስለዝፍለገን ብጥንቃቄ ክትውስን ኣለካ። ንግዚኡ ሓደ ካብቶም ፀወታታት ብዕጩ ከም መርኣዖ ዝፍለ ኮይኑ ንገዘብ ዝኸፈሎ ምዃኑ ጥራሕ ኢኻ ክትፈልጥ እትኽእል
- This will be determined through a lottery afterwards. All will get a real game and payout time will depend on the randomly chosen game and payout will depend on the risk in the game and the choice

made by the respondent. A Task row is randomly chosen in the CL game for real payout. The choice in the task row chosen by the respondent determines the outcome.

እዚ ዝፍለ ዳሕራይ ብሉተሪ እዩ ዝኸውን። ኩሉኹም ናይ ብሓቂ ገንዘብ ዝርከቦ ፀወታ ዝረኽቡ ኮይኑ እዋን ክፍሊት ድማ ብኣጋጣሚ ዝተመረፀ ፀወታ ይውሰን። መጠን ክፍሊት ድማ ኣብቲ ቦታ መላሲ ዝተመረፀ ፀወታን ዘለዎ ሓደጋን/ስግኣትን ይወሰን። ካብቶም ናይ ኣማራፅታት ዝርዝር ሓደ መደዳ ብኣጋጣሚ ይምረፅ። ኣብቲ ናይ ኣማራፅታት መደዳ ቦታ መላሲ ዝተገበረ ምርጫ ነቲ ውፅኢት ይውስኖ።

- e. Mekelle University (Mesfin Tilahun) takes responsibility for the payouts.

መቐለ ዩኒቨርሲቲ /መስፍን ጥላሁን/ ሓላፍነት ወሲዱ ክፍሊት ይፍፅም።

- f. The lucky winners will get a **Reward ticket** as a guarantee of the future payment.

ዕድለኛታት ዝኾኑ መለስቲ ንቐፃሊ ክፍሊት መተኣማመኒ ዝኸውን ትኬት ዕድል ይወሃቦም።

- g. By presenting the Reward ticket to Mekelle University/DECSI (Mesfin Tilahun) at the time of payment you will get the cash amount stated on the ticket.

ትኬት ዕድል ብምቕራብ ኣብቲ ክፍሊት ክወሃበሉ ዝተባህለ ግዜ ካብ መቐለ ዩኒቨርሲቲ/ደደቢት ልቓሕን ዕቋርን/መስፍን ጥላሁን ኣብቲ ትኬት ዝተቐመጠ መጠን ቅርሺ ምውሳድ ይከኣል።

- h. All will randomly pick a game for real payout among the time preference, risk preference, and risk preference with time delay games. .

ኩሉ ኣብዚ ዘሉ ካብ ናይ ግዜ ሕርያ፣ ስግኣት/ሓደጋ ሕርያን ሓደጋ ሕርያ ምስ ናይ ግዜ ምዝንጋዕን ፀወታት ሓደ ናይ ብሓቂ ገንዘብ ዝርከቦ ፀወታ ብዕጫ ክልዕል እዩ።

Time preference experiments (T1 and T2)

Page number:

Randomize the task you start with (Die numbers 1-10 corresponding to tasks 1-10 respectively)

Randomized task number for series T1: _____

Time preference series 1						
Time pref. Series no.	Start point	Task no.	Receive at far future period: 6 months from now, ETB	Choice	Receive at near future period: 1 week from now, ETB	Choice
1		1	1000		1000	
1		2	1000		900	
1		3	1000		800	
1		4	1000		700	
1		5	1000		600	
1		6	1000		500	
1		7	1000		400	
1		8	1000		300	
1		9	1000		200	
1		10	1000		100	

Randomize the task you start with (Die numbers 1-10 corresponding to tasks 1-10 respectively)

Randomized task number for series T2: _____

Time preference series 2						
Time pref. Series no.	Start point	Task no.	Receive at far future period: 12 months from now, ETB	Choice	Receive at near future period: 1 week from now, ETB	Choice
2		1	1000		1000	
2		2	1000		900	
2		3	1000		800	
2		4	1000		700	
2		5	1000		600	
2		6	1000		500	
2		7	1000		400	
2		8	1000		300	
2		9	1000		200	
2		10	1000		100	

Risk Preference (R1 to R6)

Page number:

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R1: _____

Bad outcome: *Die number 1*

Good Outcome: *Die numbers 2-20*

Risk preference series R1								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB One week from now	Choice	Certain amount, ETB One week from now	Choice
1		1	1/20	0	1000		1000	
1		2	1/20	0	1000		900	
1		3	1/20	0	1000		800	
1		4	1/20	0	1000		700	
1		5	1/20	0	1000		600	
1		6	1/20	0	1000		500	
1		7	1/20	0	1000		400	
1		8	1/20	0	1000		300	
1		9	1/20	0	1000		200	
1		10	1/20	0	1000		100	

Randomized task for series R2: _____

Bad outcome: *Die number 1, 2 and 11, 12*

Good Outcome: *The remaining die numbers*

Risk preference series R2								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB One week from now	Choice	Certain amount, ETB One week from now	Choice
2		1	2/10	0	1000		1000	
2		2	2/10	0	1000		900	
2		3	2/10	0	1000		800	
2		4	2/10	0	1000		700	
2		5	2/10	0	1000		600	
2		6	2/10	0	1000		500	
2		7	2/10	0	1000		400	
2		8	2/10	0	1000		300	
2		9	2/10	0	1000		200	
2		10	2/10	0	1000		100	

Page number:

Randomized task for series R3: _____

Bad outcome: *Die number 1, 2, 3, 4, 5 and 11, 12, 13, 14, 15*
Good Outcome: *The remaining die numbers*

Risk preference series R3								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB One week from now	Choice	Certain amount, ETB One week from now	Choice
3		1	5/10	0	1000		1000	
3		2	5/10	0	1000		900	
3		3	5/10	0	1000		800	
3		4	5/10	0	1000		700	
3		5	5/10	0	1000		600	
3		6	5/10	0	1000		500	
3		7	5/10	0	1000		400	
3		8	5/10	0	1000		300	
3		9	5/10	0	1000		200	
3		10	5/10	0	1000		100	

Randomized task for series R4: _____

Bad outcome: *Die number 1, 2, 3, 4, 5 and 11, 12, 13, 14, 15*
Good Outcome: *The remaining die numbers*

Risk preference series R4								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB One week from now	Choice	Certain amount, ETB One week from now	Choice
4		1	5/10	0	2000		2000	
4		2	5/10	0	2000		1800	
4		3	5/10	0	2000		1600	
4		4	5/10	0	2000		1400	
4		5	5/10	0	2000		1200	
4		6	5/10	0	2000		1000	
4		7	5/10	0	2000		800	
4		8	5/10	0	2000		600	
4		9	5/10	0	2000		400	
4		10	5/10	0	2000		200	

Page number:

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R5: _____

Bad outcome: *Die number 1, 2, 3, 4, 5, 6, 7, 8 and 11, 12, 13, 14, 15, 16, 17, 18*

Good Outcome: *The remaining die numbers (9, 10, 19, 20)*

Risk preference series R5								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB One week from now	Choice	Certain amount ETB One week from now	Choice
5		1	8/10	0	2000		2000	
5		2	8/10	0	2000		1800	
5		3	8/10	0	2000		1600	
5		4	8/10	0	2000		1400	
5		5	8/10	0	2000		1200	
5		6	8/10	0	2000		1000	
5		7	8/10	0	2000		800	
5		8	8/10	0	2000		600	
5		9	8/10	0	2000		400	
5		10	8/10	0	2000		200	

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R6: _____

Bad outcome: *Die number 1 to 19*
Good Outcome: *Die number 20*

Risk preference series R6								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB One week from now	Choice	Certain amount ETB One week from now	Choice
6		1	19/20	0	5000		2000	
6		2	19/20	0	5000		1500	
6		3	19/20	0	5000		1200	
6		4	19/20	0	5000		1000	
6		5	19/20	0	5000		800	
6		6	19/20	0	5000		600	
6		7	19/20	0	5000		400	
6		8	19/20	0	5000		300	
6		9	19/20	0	5000		200	
6		10	19/20	0	5000		100	

Time & Risk Preference (R7 to R20)

Page number:

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R7: _____

Bad outcome: *Die number 1*

Good Outcome: *Die numbers 2-20*

Risk preference series R7								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB 6 months from now	Choice	Certain amount, ETB One week from now	Choice
7		1	1/20	0	1000		1000	
7		2	1/20	0	1000		900	
7		3	1/20	0	1000		800	
7		4	1/20	0	1000		700	
7		5	1/20	0	1000		600	
7		6	1/20	0	1000		500	
7		7	1/20	0	1000		400	
7		8	1/20	0	1000		300	
7		9	1/20	0	1000		200	
7		10	1/20	0	1000		100	

Randomized task for series R8: _____

Bad outcome: *Die number 1, 2 and 11, 12*

Good Outcome: *The remaining die numbers*

Risk preference series R8								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB 6 months from now	Choice	Certain amount, ETB One week from now	Choice
8		1	2/10	0	1000		1000	
8		2	2/10	0	1000		900	
8		3	2/10	0	1000		800	
8		4	2/10	0	1000		700	
8		5	2/10	0	1000		600	
8		6	2/10	0	1000		500	
8		7	2/10	0	1000		400	
8		8	2/10	0	1000		300	
8		9	2/10	0	1000		200	
8		10	2/10	0	1000		100	

Page number:

Randomized task for series R9: _____

Bad outcome: *Die number 1, 2, 3, 4, 5 and 11, 12, 13, 14, 15*
 Good Outcome: *The remaining die numbers*

Risk preference series R9								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB 6 months from now	Choice	Certain amount, ETB One week from now	Choice
9		1	5/10	0	1000		1000	
9		2	5/10	0	1000		900	
9		3	5/10	0	1000		800	
9		4	5/10	0	1000		700	
9		5	5/10	0	1000		600	
9		6	5/10	0	1000		500	
9		7	5/10	0	1000		400	
9		8	5/10	0	1000		300	
9		9	5/10	0	1000		200	
9		10	5/10	0	1000		100	

Randomized task for series R10: _____

Bad outcome: *Die number 1, 2, 3, 4, 5 and 11, 12, 13, 14, 15*
 Good Outcome: *The remaining die numbers*

Risk preference series R10								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB 6 months from now	Choice	Certain amount, ETB One week from now	Choice
10		1	5/10	0	2000		2000	
10		2	5/10	0	2000		1800	
10		3	5/10	0	2000		1600	
10		4	5/10	0	2000		1400	
10		5	5/10	0	2000		1200	
10		6	5/10	0	2000		1000	
10		7	5/10	0	2000		800	
10		8	5/10	0	2000		600	
10		9	5/10	0	2000		400	
10		10	5/10	0	2000		200	

Page number:

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R11: _____

Bad outcome: *Die number 1, 2, 3, 4, 5, 6, 7, 8 and 11, 12, 13, 14, 15, 16, 17, 18*

Good Outcome: *The remaining die numbers (9, 10, 19, 20)*

Risk preference series R11								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB 6 months from now	Choice	Certain amount ETB One week from now	Choice
11		1	8/10	0	2000		2000	
11		2	8/10	0	2000		1800	
11		3	8/10	0	2000		1600	
11		4	8/10	0	2000		1400	
11		5	8/10	0	2000		1200	
11		6	8/10	0	2000		1000	
11		7	8/10	0	2000		800	
11		8	8/10	0	2000		600	
11		9	8/10	0	2000		400	
11		10	8/10	0	2000		200	

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R12: _____

Bad outcome: *Die number 1 to 19*

Good Outcome: *Die number 20*

Risk preference series R12								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB 6 months from now	Choice	Certain amount ETB One week from now	Choice
12		1	19/20	0	5000		2000	
12		2	19/20	0	5000		1500	
12		3	19/20	0	5000		1200	
12		4	19/20	0	5000		1000	
12		5	19/20	0	5000		800	
12		6	19/20	0	5000		600	
12		7	19/20	0	5000		400	
12		8	19/20	0	5000		300	
12		9	19/20	0	5000		200	
12		10	19/20	0	5000		100	

Page number:

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R13: _____

Bad outcome: *Die number 1*

Good Outcome: *Die numbers 2-20*

Risk preference series R13								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB 12 months from now	Choice	Certain amount, ETB One week from now	Choice
13		1	1/20	0	1000		1000	
13		2	1/20	0	1000		900	
13		3	1/20	0	1000		800	
13		4	1/20	0	1000		700	
13		5	1/20	0	1000		600	
13		6	1/20	0	1000		500	
13		7	1/20	0	1000		400	
13		8	1/20	0	1000		300	
13		9	1/20	0	1000		200	
13		10	1/20	0	1000		100	

Randomized task for series R14: _____

Bad outcome: *Die number 1, 2 and 11, 12*

Good Outcome: *The remaining die numbers*

Risk preference series R14								
S. no.	Start point	Task no.	Probability of bad outcome	Low outcome, ETB	High outcome, ETB 12 months from now	Choice	Certain amount, ETB One week from now	Choice
14		1	2/10	0	1000		1000	
14		2	2/10	0	1000		900	
14		3	2/10	0	1000		800	
14		4	2/10	0	1000		700	
14		5	2/10	0	1000		600	
14		6	2/10	0	1000		500	
14		7	2/10	0	1000		400	
14		8	2/10	0	1000		300	
14		9	2/10	0	1000		200	
14		10	2/10	0	1000		100	

Page number:

Randomized task for series R15: _____ **Bad outcome:** *Die number 1, 2, 3, 4, 5 and 11, 12, 13, 14, 15*
Good Outcome: *The remaining die numbers*

Risk preference series R15								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB 12 months from now	Choice	Certain amount, ETB One week from now	Choice
15		1	5/10	0	1000		1000	
15		2	5/10	0	1000		900	
15		3	5/10	0	1000		800	
15		4	5/10	0	1000		700	
15		5	5/10	0	1000		600	
15		6	5/10	0	1000		500	
15		7	5/10	0	1000		400	
15		8	5/10	0	1000		300	
15		9	5/10	0	1000		200	
15		10	5/10	0	1000		100	

Randomized task for series R16: _____ **Bad outcome:** *Die number 1, 2, 3, 4, 5 and 11, 12, 13, 14, 15*
Good Outcome: *The remaining die numbers*

Risk preference series R16								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB 12 months from now	Choice	Certain amount, ETB One week from now	Choice
16		1	5/10	0	2000		2000	
16		2	5/10	0	2000		1800	
16		3	5/10	0	2000		1600	
16		4	5/10	0	2000		1400	
16		5	5/10	0	2000		1200	
16		6	5/10	0	2000		1000	
16		7	5/10	0	2000		800	
16		8	5/10	0	2000		600	
16		9	5/10	0	2000		400	
16		10	5/10	0	2000		200	

Page number: _____

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R17: _____

Bad outcome: Die number 1, 2, 3, 4, 5, 6, 7, 8 and 11, 12, 13, 14, 15, 16, 17, 18

Good Outcome: The remaining die numbers (9, 10, 19, 20)

Risk preference series R17								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB 12 months from now	Choice	Certain amount ETB One week from now	Choice
17		1	8/10	0	2000		2000	
17		2	8/10	0	2000		1800	
17		3	8/10	0	2000		1600	
17		4	8/10	0	2000		1400	
17		5	8/10	0	2000		1200	
17		6	8/10	0	2000		1000	
17		7	8/10	0	2000		800	
17		8	8/10	0	2000		600	
17		9	8/10	0	2000		400	
17		10	8/10	0	2000		200	

Randomize the task you start with (Die numbers 1, 11 = 1; 2 and 12 = 2, 3 & 13 = 3, ..., 10 & 20 = 10)

Randomized task for series R18: _____

Bad outcome: Die number 1 to 19

Good Outcome: Die number 20

Risk preference series R18								
S. no.	Start point	Task no.	Prob-ability of bad outcome	Low outcome, ETB	High outcome, ETB 12 months from now	Choice	Certain amount ETB One week from now	Choice
18		1	19/20	0	5000		2000	
18		2	19/20	0	5000		1500	
18		3	19/20	0	5000		1200	
18		4	19/20	0	5000		1000	
18		5	19/20	0	5000		800	
18		6	19/20	0	5000		600	
18		7	19/20	0	5000		400	
18		8	19/20	0	5000		300	
18		9	19/20	0	5000		200	
18		10	19/20	0	5000		100	

Payout for the time preference and risk + time preference experiments

1. One of the 20 Choice Lists (CLs) (T1, T2, R1-R18) will randomly be chosen for real payout
2. Allocate Die numbers 1-20 to CL: T1:1, T2:2, R1:3, R2:4....R18:20
3. Throw die once: Identify CL for real payout.
4. Task row randomly assigned for payout (randomize tasks 1 to 10; die numbers 1 and 11= 1, 2 & 12= 2,10&20=20) : _____
5. Identify whether the respondent had chosen the risky prospect (1) or the certain amount (2) in the randomized task of the randomized real game: Circle the prospect chosen: 1=Risky prospect, 2=The certain amount. If the prospect chosen is the risky prospect, skip to point 7.
6. If the certain amount, how much is in Birr _____
7. If the player chose the risky prospect, what is the outcome of the die (see the assigned die numbers for bad and good outcomes under table of the real game and roll the die)? Die outcome _____
8. What is the result? 1=Win and 0=Do not win
9. If won, amount in Birr _____

School of Economics and Business NMBU INTERNAL ETHICS COMMITTEE APPROVAL LETTER

Application number:	HH-NMBU IRB 01/23
Title:	Youth Business Groups in Tigray: Civil War Impacts
Name of applicant:	Professor Stein T. Holden

Introduction

This report is based on the revised plans for the ongoing research project, "Youth Groups for Sustainable Development: Lessons from the Ethiopian Model," which is led by Professor Stein T. Holden and his team at the Norwegian University of Life Sciences (NMBU). Initially launched in 2019 and funded by the Research Council of Norway, the project sought to investigate the performance and impact of formalized youth business cooperatives in Northern Ethiopia. However, the breakout of a civil war in the study area in 2020 significantly disrupted the project's planned trajectory.

Prior to the civil war, the research team had been implementing various randomized controlled trials (RCTs), collecting substantial survey data and studying areas such as business group training, leadership, and women's empowerment. However, due to the conflict, planned collaboration with several international partners could not be realized.

The project was granted an extension until the end of 2023 by the Research Council of Norway. The focus now lies in assessing the impacts of the civil war on the youth groups, their members, and families, as well as evaluating the role of the youth business groups in restoring the livelihoods of their members post-war.

The project originally had three main components involving surveys and field experiments focusing on leadership training, gender differences, and climate risk management training. The findings of these studies will also form a solid foundation for assessing the civil war's impacts on the youth business groups, providing an opportunity to evaluate the youth business group model under extreme stress.

Guidelines for Research Ethics in the Social Sciences and the Humanities

The Norwegian guidelines for research ethics in the social sciences and the humanities consist of five parts (A–E), which concern different ethical obligations. We will here evaluate the proposal based on these guidelines.

A) The research community: The project exhibits a commitment to ethical behavior within the research community, ensuring truthfulness and respect in their interactions. The intention to make anonymized data available to other researchers in accordance with open access sharing requirements aligns with the values of mutual recognition and respect among researchers.

B) Research participants: The project takes significant steps to respect the dignity and wellbeing of participants. Prior informed consent is consistently emphasized and implemented, with all participants being made aware of the project objectives, their role, and the data collected from them. Furthermore, measures have been taken to protect participant anonymity and privacy, fulfilling the requirements under this guideline. See also the comment below about GDPR compliance.

C) Groups and institutions: The project provides evidence of ethical consideration towards participants in a conflict zone. It is important that these considerations continue and are documented further to ensure the research is conducted ethically.

D) Commissioners, funders, and collaborators: The project team, led by Stein T. Holden, has set clear guidelines for data management, storage, and sharing that are in line with the requirements of funders and collaborators. They also demonstrate an understanding of the importance of balancing openness and relevance with social utility.

E) Dissemination of research: The research team has detailed plans for data storage, sharing, and long-term preservation, aligning with the guideline's emphasis on research dissemination. Their intention to publish in well known academic journals and to use public depositories and data banks for research findings ensures that scientific results and methods will be accessible to society at large.

GDPR compliance

The ethical and data management description provided by Professor Stein Holden follows the principles outlined in the General Data Protection Regulation (GDPR).

Informed Consent: GDPR mandates clear consent for data collection and processing. The subjects are informed of the project and the type of data collected, as well as the nature of their involvement.

The informed consent used in the project must follow the requirement of the GDPR, and clearly state the following:

1. Purpose of the Study: Participants should understand why their data is being collected, and how it will contribute to the research. They should also be informed of any potential direct benefits or risks to them from participating in the research.
2. Data Use and Dissemination: Participants should be informed about who will have access to their data, both within the research team and any third parties. This should also cover how the data might be used beyond the scope of the current research, if applicable.
3. Retention Period: It should be clear to the participants for how long their data will be retained and when it will be deleted or anonymized.
4. Rights of Withdrawal: It should be stated that participants have the right to withdraw their consent at any time without any repercussions, and what this process would be like.
5. Contact Information: Participants should have access to contact information for the research team in case they have further questions or need to withdraw their consent.
6. Complaint Procedure: Information about where and how to lodge complaints or concerns about the study should also be provided.

Anonymity: GDPR also requires that personally identifiable information be protected. The strategy of keeping identifying information separate from shared data meets this requirement.

Data Security: GDPR stipulates that collected data must be protected from unauthorized access or theft. The plan's protocols for handling data during the project, as well as for long-term storage, comply with this requirement. NMBU regulations on data security should be followed.

Rights of the Data Subject: GDPR provides data subjects with the right to access, correct, or erase their personal data. Information about this must be included in the informed consent and rights of data subjects implemented according to GDPR and the NMBU regulations.

Accountability: Data controllers are responsible for ensuring GDPR compliance, and Professor Holden and Mesfin Tilahun have assumed this responsibility.


Data Minimization: The principle of data minimization implies that only necessary data should be collected and processed. The plan describes why the data collected is directly relevant and necessary for the research project, and in alignment with this principle.

International Data Transfer: If data is being transferred outside of the EU, it's important to ensure the transfer complies with GDPR regulations. This should be done according to GDPR and NMBU regulations on data security.

Decision

The internal ethics committee (equivalent to IRB) at the School of Economics and Business at NMBU approves the above-referenced revision of the research project. This approval is limited to the activities described in the approved application and enclosed attachments.

The committee notes that the research design choices in the updated project plan align with the Norwegian Guidelines for Research Ethics in the Social Sciences and the Humanities and the GDPR guidelines. The IRB assumes that all necessary legal requirements have been met.

Date	Signature
August 3, 2023	
Nicolay Worren Associate dean and head of internal ethics committee School of Economics and Business Norwegian University of Life Sciences (NMBU)	