

Working Paper

**BEYOND TECHNICAL SKILLS TRAINING:  
THE IMPACT OF CREDIT COUNSELLING ON ENTREPRENEURIAL  
BEHAVIOR OF UGANDAN YOUTH**

**Juliet Ssekandi  
Zeridah Zigiti  
Daniel Joloba  
Benjamin Kachero  
Samuel Galiwango**

October 2015



**pep**  
partnership for  
economic  
policy



**PAGE**

policy analysis on growth and employment

IDRC  
International Development  
Research Centre

CRDI  
Centre de recherches pour le  
développement international

pep  
partnership for  
economic  
policy

UKaid  
here for the world to prosper

# BEYOND TECHNICAL SKILLS TRAINING: THE IMPACT OF CREDIT COUNSELLING ON ENTREPRENEURIAL BEHAVIOR OF UGANDAN YOUTH

## Abstract

There is a low financial credit take among youth in Uganda because potential beneficiaries perceive the associated risk as high. This study assesses the determinants of entrepreneurial risk tolerance among Ugandan youth using experimental data from a randomised control trial and a real-life investment risk experiment. The intervention consists of credit-counselling and sector-specific business training for young men and women aged 18-35 years who own a business to inform them about the obligations and commitments associated with financial credit. The intervention has a significant impact on the demand for credit and related intermediate outcomes such as the ownership of a bank account and the investment in assets. The study finds that the youth actually exhibit lower demand for credit after the business training. This is attributed to an increased awareness of the actual risk associated with taking out credit. The findings of this research reinforce national strategies to promote soft skills for business entrepreneurship, extending beyond the standard business training.

**JEL:** J100, O16, M130

**Keywords:** Credit counseling, Youth Venture Capital Fund, Risk Experiment, Uganda, Youth Employment, Randomised experiment, Risk Tolerance

## Authors

### Juliet Ssekandi

Program Specialist  
UNICEF Uganda  
juliana.kalibbala@yahoo.com

### Zeridah Zigiti

Assistant Commissioner  
Ministry of Finance, Uganda  
zeridahzigiti@hotmail.com

### Samuel Galiwango

Senior Economist  
Office of the Prime Minister  
Uganda  
galisam7@gmail.com

### Benjamin Kachero

Economist  
Office of the Prime Minister  
Uganda  
bkachero@gmail.com

### Daniel Joloba

Program Manager,  
Youth Entrepreneurship  
Enterprise Uganda  
djoloba@yahoo.com

## Acknowledgements

This study was carried out with financial and scientific support from the Partnership for Economic Policy (PEP) ([www.pep-net.org](http://www.pep-net.org)) with funding from the Department for international Development (DFID) of the UK Aid and the government of Canada through the International Development Research Centre (IDRC). The Authors are grateful to the Department for Children and Youth at the Ministry of Gender, Labor and Social Development (MGLSD) for commissioning the study and providing all the background information relevant to the research. The study greatly benefitted from the institutional affiliation of the researchers which fostered strategic collaborations with the key stakeholder institutions including the Office of the Prime Minister, the Government Evaluation Facility (GEF), Ministry of Finance, Planning and Economic Development, UNICEF-Uganda and Enterprise Uganda. UNICEF specifically supported the recruitment of participants through the mobile-based U-Report platform. The team is grateful for the technical support and guidance provided by dedicated PEP mentors Maria Adelaida Lopera and Maria Laura Alzua.

# Table of contents

Executive summary	p.1
<b>I. Introduction</b>	<b>p.2</b>
1.1. Context of the study	
1.2. Research questions and objectives	
<b>II. Literature review</b>	<b>p.6</b>
<b>III. Methodology and data</b>	<b>p.8</b>
3.1. Randomisation	
3.2. Experimental design	
3.3. The risk game	
<b>IV. Results and application</b>	<b>p.14</b>
4.1. Characteristics of participants	
4.2. The balancing condition	
4.3. Participant attitudes towards risk	
4.4. Intervention impact	
<b>V. Conclusions &amp; policy recommendations</b>	<b>p.24</b>
References	p.26
Appendix 1: Correlation matrix	p.27
Appendix 2: Recruitment of participants	p.28
Appendix 3: Risk aversion game write up	p.29

## List of abbreviations

<b>BoU</b>	Bank of Uganda
<b>BTVET</b>	Business, Technical and Vocational Education and Training
<b>GEF</b>	Government Evaluation Facility
<b>ILO</b>	International Labour Organisation
<b>MFPED</b>	Ministry of Finance Planning and Economic Development
<b>MGLSD</b>	Ministry of Gender, Labour and Social Development
<b>MOES</b>	Ministry of Education and Sports
<b>OPM</b>	Office of the Prime Minister
<b>PEP</b>	Partnership for Economic Policy
<b>RCT</b>	Randomized Control Trial
<b>SMS</b>	Short Message Service
<b>TOR</b>	Terms of Reference
<b>UIA</b>	Uganda Investment Authority
<b>UNICEF</b>	United Nations Children's Fund
<b>USSD</b>	Unstructured Supplementary Service Data
<b>YVCF</b>	Youth Venture Capital Fund

## Executive Summary

In this study, we examined the impact of credit counselling on entrepreneurial behavior. We did this by implementing a randomized control trial in which youth aged 18-35 years, who owned a business at the time of the study, were provided with credit counselling through specialized business clinics. The intervention involved 555 youth drawn from 5 districts spanning the major geographical regions of Uganda: Kampala City (treated distinctly because of its purely urban nature), Wakiso, Mbale, Gulu and Mbarara. These districts were selected on the basis of the number of small-scale enterprises and the availability of the Youth Venture Credit facility. In total 6 clinics were conducted; two in Kampala and one in each of the other four districts. At the start of each clinic, we randomly assigned the selected youth to either the treatment or control group. Only those in the treatment group attended the specialized business clinics.

Our experimental evaluation contributes a new dimension to existing empirical literature on individuals' tolerance towards risk using evidence from a real life experiment embedded in a standard RCT approach. Two measures of risk tolerance, self-reported and experimental risk aversion were assessed simultaneously. We investigated entrepreneurial risk tolerance amongst young entrepreneurs, focusing on the effect of risk aversion on one's choice to solicit business expansion credit. With regard to general attitude towards risk, 79% of participants were willing to take a risk with more than half of them rating above 6 on a risk aversion scale of 0 (risk loving) to 10 (highly risk averse). A high correlation between the individual's experimental risk score and their self-assessed willingness to take risk was observed. When the participants were made aware of the true uncertainties of a risky investment, they exhibited greater caution with their credit choices. Youth that attended credit counselling were inclined to desire a significantly lower amount of credit than their counterparts who did not receive any counselling. They also exhibited a better understanding of financial management and the risks associated with borrowing funds without a clear business plan. They appreciated the need to ensure responsible use of resources as well as to explore alternative sources of funding.

The specialized business clinics not only provided a platform for informing the youth about the key elements and requirements to access the Youth Venture Capital Fund (YVCF), but also provided vital information about business management. They provided key lessons and guidelines on how to utilize credit resources to expand and improve business while also ensuring that trainees manage their businesses appropriately to be able to pay back the borrowed funds. The training helped the youth appreciate the importance of undertaking better business practices such as preparing and following a business plan, book keeping and how to manage credit and the profits accrued from the business. The intervention also addressed issues such as risk identification, risk assessment and risk management within the entrepreneurial context.

The trained participants were more likely to explore other forms of business finance like supplier credit, grants, and loans from family and friends. In some cases, they opted to utilize their own equity or savings, looking beyond formal sources of credit for businesses.

This evaluation provides a key lesson to the government and other institutions designing programs to assist young entrepreneurs. The intervention leads to two recommendations: first, the improvement of participants' business management skills and secondly, the necessity to help participants assess the true probabilities of reimbursing an investment loan. Generally, credit counselling should be part and parcel of credit programs targeting and empowering youth that are engaged in entrepreneurship. The vocational curriculum should incorporate credit counselling as a distinct module to foster appreciation and knowledge of good financial management for business success. This should be coupled with the provision of soft skills that enable the entrepreneur to compete favourably in the market. The government should make the beneficiaries of the credit programs much more aware about the conditions and requirements for accessing credit facilities or programs before implementation.

## I. Introduction

### 1.1. Context of the Study

The government of Uganda has initiated a number of interventions such as training youth in business and management skills, integrating vocational education at primary and secondary levels, developing serviced industrial parks, and promoting agricultural commercialization and agro-processing through business incubation centers. In December 2011, the cabinet approved the new 10 year Skilling Uganda Strategic Plan 2012-2021 for Business, Technical and Vocational Education and Training (BTVET), coordinated by the Ministry of Education and Sports (MoES). Even before the adoption of the strategic plan, the training of youth in foundational skills, technical fields, and business related studies had been done through business technical institutes and had generated a mass of "paraprofessionals" (i.e. craftsmen, technicians, etc.) with skills, which are favoured more by the private and informal sectors. The government has attempted to match this supply by making available various facilities, such as the Youth Venture Capital Fund (YVCF) and the Youth Livelihood Programme (YLP) to support the growth of viable and sustainable Small and Medium Enterprises (SMEs) in the private sector.

In the financial year 2011 to 2012, the government of Uganda made UGX 25 billion available through the YVCF, to be accessed as business expansion credit through the commercial banks. This facility was established to provide credit finance to viable projects proposed by young entrepreneurs, as well as to enable youth to benefit from associated mentoring services from participating financial institutions. In order to be

eligible for credit, a person aged 18 to 35 years had to own a business that had been operational for at least 3 months, which complied with local business licensing requirements and provided employment to at least 4 persons. There was no requirement of collateral security to access the fund except a requirement to present two guarantors for the loan who were well-respected members of society. To date, concerns still remain as to whether the majority of youth being targeted by this fund are in a position to meet these requirements. The fund has not only been faced with low uptake of the available resources, but has also faced challenges with defaulters in the reimbursement of the lent funds, which then contravenes the intention to operate it as a revolving fund.

More recently the government has launched the YLP which features a revolving fund targeting the poor and unemployed youth in all the districts of the country. The overall programme development objective is to empower the target youth in Uganda to harness their socio-economic potential and increase self-employment opportunities and income levels. The YLP has three components, namely skills development, livelihoods support and institutional support. The program is demand driven and encourages young people to form groups in order to access specified amounts of money. Although the program has a capacity enhancement effort for the Youth Project Management Committees (YPMCs) and beneficiary groups, it is still challenged by the fact that funded proposals are not often well-understood by the beneficiary groups because they have been copied from their peers.

In the policy-making context, there are existing policy instruments and programmes to which the findings of this research are applicable:

- The National Development Plan II
- The Micro, Small and Medium-scale Enterprises (MSME) policy
- The National Youth Policy
- The Skilling Uganda Strategic Plan
- The National Guidelines for the Youth Venture Capital Fund
- The Youth Livelihood Programme

The National Development Plan (NDP) stipulates the country's medium term strategic direction and development priorities. Its thrust is the creation of an enabling environment for increasing high quality employment and specifically the implementation of the national youth employment policy and plan, and other laws and guidelines on labor productivity and employment.

The Uganda Micro, Small and Medium Enterprise (MSME) policy highlights one of the major constraints for MSMEs as the limited access to a range of financial products and services owing to the nature of their establishment and lack of collateral. It also mentions that while these financial services exist, interest rates charged are very high and MSMEs cannot afford them. Therefore, the policy proposes that the government formulates a national entrepreneurship strategy to, inter alia, optimise the regulatory

environment, and enhance entrepreneurship education and business skills development in support of MSMEs. This study offers the opportunity to investigate whether regulatory requirements for credit access are indeed a reason for lower uptake among MSMEs.

In the National Youth Policy, specific strategies were formulated to address the issue of enterprise development and employment. The salient strategies relevant to this study include the promotion of appropriate micro credit financial institutions that extend credit facilities to the youth, the creation of a youth trust bank, the establishment of a loan scheme for youth in tertiary institutions and the promotion of youth enterprise development through enterprise education and information services. It is evident that from these strategies, the policy focuses on the provision of credit as the ultimate solution to enterprise development and the reduction of youth unemployment.

The majority of the fore-mentioned policies and programmes have placed a strong emphasis on the creation of employable technical skills and competencies relevant in the labour market, but do not address issues pertaining to soft skills such as financial literacy, negotiation, communication and confidence or risk tolerance. One of the recommendations of a tracer study commissioned in 2011 by the Ministry of Education and Sports in evaluating Business, Technical and Vocational Training (BTVET) in Uganda, was the need to focus on broader soft skills such as client communication, workplace behavior, teamwork, and business management. The Skilling Uganda Strategic Plan was formulated by considering the recommendations of the tracer study. The intervention we evaluate tested two mechanisms in line with this recommendation. First, improving participants' business management skills, and secondly, helping them assess the true probabilities of reimbursing an investment loan. The intervention also addressed issues such as risk identification, risk assessment and risk management within the entrepreneurial context.

In general, the issue of risk tolerance has not been addressed before in Uganda and has the potential to draw the interest of policy makers at a time when the investment climate in the country is uncertain and characterized by escalating borrowing rates averaging 24% in the commercial banks. This is coupled with the rampant evictions of Small and Medium Scale Enterprises (SMSEs) by the city council authority in a bid to modernize the country's capital city.

## **1.2. Research Questions and Objectives**

In this study, we investigated the role of entrepreneurial risk tolerance in determining the demand for credit amongst young entrepreneurs. In their study, Guiso and Piella (2005) found that elicited risk aversion has considerable predictive power for a number of key household decisions such as choice of occupation, portfolio selection, moving decisions and exposure to chronic diseases in ways consistent with theory. Drawing on their findings, our research investigated whether the effects of risk aversion extend to one's

choice to solicit business expansion credit. The study examined the determinants of entrepreneurial risk tolerance among youth and the impact of credit counselling on the borrowing choices of young men and women in Uganda.

Drawing on the policy context and the main issues arising from the current debate on youth unemployment, the research focused on the following key questions:

**Research question 1:** *Which personal factors are responsible for differential risk perceptions amongst the young men and women?*

**Research question 2:** *Does credit counselling have an impact on entrepreneurial risk tolerance and subsequent credit uptake amongst youth?*

Ultimately, this research study aimed to estimate the impact of credit counselling on borrowing choices of the youth; provide an engendered perspective of personal factors associated with differential risk perceptions of youth and ultimately provide evidence to advocate for the inclusion of credit counseling in the business training curriculum of Uganda. The next section provides a review of the literature followed by the description of the experiment and the samples. This is followed by the empirical model, the findings, and finally a section on the conclusion and recommendations.

## II. Literature Review

According to International Labour Organisation (ILO) data for 2013, while the unemployment rate for Uganda was estimated at 3.8%, the youth unemployment rate was at 6.6%, with males at 6.1% and females at 7.0%. Recent policy debates on this issue have focused on the reasons why the youth, even when equipped with the necessary skills, still fail to harness and access the available entrepreneurial opportunities.

The YVCF was set up with the aim of supporting the growth of viable and sustainable SMEs, but was also envisaged to be a revolving fund. According to the first quarter report of the YVCF for 2014, UGX 22.3 billion had been accessed by 9,307 youth and the cumulative default rate was 1%, representing a total of UGX 219.6 million which had to be off-set by the Ugandan government. As of the first quarter of 2015, the cumulative number of youth beneficiaries was 13,097 having accessed a total of UGX 45.2 billion, but the cumulative default amount had increased to UGX 740.4 million. The main causes for default were diversions of the funds provided the collapse of businesses, and in some cases, an unwillingness to pay back the loans.

Ahaibwe, Kasirye and Barungi (2014) advise that the promotion of youth entrepreneurship should be approached comprehensively to achieve lasting impacts. They go further to recommend that youth be provided with business development services and capacities like entrepreneurship training, mentoring and

business incubation as critical avenues for the successful implementation of the youth fund. The BTVET has been transformed from a training strategy confined to the education subsector into a comprehensive strategy encompassing skills development for employment, enhanced productivity and growth.

On the other hand, Karlan and Valdivia (2011) used a randomized control trial, to measure the marginal impact of adding business training to a Peruvian group lending program for female micro entrepreneurs. The study found little or no evidence of changes in key outcomes such as business revenue, profits, or employment, but observed strong benefits for both the client and microfinance institution in terms of business knowledge improvements and increased client retention rates. Relatedly, Bagwell (2000) found that a sample of employed individuals exposed to credit counseling through a non-profit consumer credit counseling agency in the mid-Atlantic, had decreased levels of financial concerns and financial stress, experienced fewer work loss days, and spent less time using work hours to handle personal financial matters. They also indicated improvements in their level of financial wellness, health status, and job productivity, with most having reduced some of their personal debts and having cut down on living expenses.

Our hypothesis is that youth who participate in credit counseling clinics will exhibit an increased demand for business expansion credit as compared to those that do not get the same opportunity. As shown by Antonites and Wordsworth (2009), involvement in entrepreneurial activity correlates positively with increased risk tolerance.

In general, much of the literature reveals that gender issues relating to access to micro-credit have been widely researched but there is limited evidence on risk tolerance and its interaction with aspects such as gender and socio-economic factors that influence investment choices among youth. Guiso and Piella (2005) found that elicited risk aversion has a considerable predictive power for a number of key household decisions, such as choice of occupation, portfolio selection, moving decisions and exposure to chronic diseases in ways consistent with theory. Drawing on their findings, our research investigates whether these effects of risk aversion extend to an individual's choice to solicit business expansion credit.

### **III. Methodology and data**

A prospective impact evaluation was conducted using a randomized experimental design. This was achieved by organising specialised business clinics for youth aged 18-35 years who currently own a business and are interested in applying for business expansion credit through the YVCF. The objective was to assess the impact of a two-day credit-counseling course on the effective demand for credit among young entrepreneurs in Uganda.

Our experimental evaluation contributes a new dimension to existing empirical research on individuals' tolerance towards risk using evidence from a real life experiment embedded in a standard RCT approach. Two measures of risk tolerance, self-reported and experimental risk aversion are assessed simultaneously.

### 3.1. Randomisation

The target population were young entrepreneurs aged between 18 and 35 who owned a business. According to the power calculations, a sample of 600 was determined to be adequate. The experimental sample was drawn from a database of close to 250,000 Ugandan youth who had voluntarily enrolled on U-report, a social mobilization platform<sup>1</sup>. Five districts were selected: Kampala City, Wakiso, Mbale, Gulu and Mbarara, where there were the largest numbers of u-reporter enrollment and where the YVCF is available. The four districts Wakiso, Mbale, Gulu and Mbarara had almost equal U-report enrolment rates, while Kampala city had double this rate. We therefore decided to allocate the sample as follows: 200 (Kampala), 100 (Wakiso), 100 (Mbale), 100 (Gulu), and 100 (Mbarara). These 5 districts were selected only to ensure greater variability in the sample through inclusive coverage of all regions of the country. There was no intention to treat them as distinct clusters for analysis or estimation of effects.

We used the U-report poll to identify a large sample of young entrepreneurs who expressed interest in participating in the business clinics. A recruitment-SMS message was sent to all subscribers in the 5 selected districts via the U-report platform. They received an introductory SMS message, which notified them that the Ministry of Gender, Labour and Social Development would like to hold clinics to raise awareness about the YVCF. The SMS further invited those who were interested to reply via SMS. The team then arranged a phone interview to collect additional information needed to validate their eligibility. The recruitment text messages and follow-up phone call algorithms are provided in Appendix 1.

The evaluation was conducted in 6 clinics each targeting 100 participants; two clinics were conducted in Kampala since it had a larger catchment and was allocated a 200 participant sample size. Prior to each clinic, we randomly assigned the selected youth to either the treatment or control group. The treatment group received a training session in the specialized business clinics while the control group received no such training. The random assignment was implemented through a double blind randomisation procedure. Upon arrival for the clinic, all participants had a pre-determined identity number and group assignment placed on their nametag prior to registration. However, neither the facilitator nor the participants were aware of the

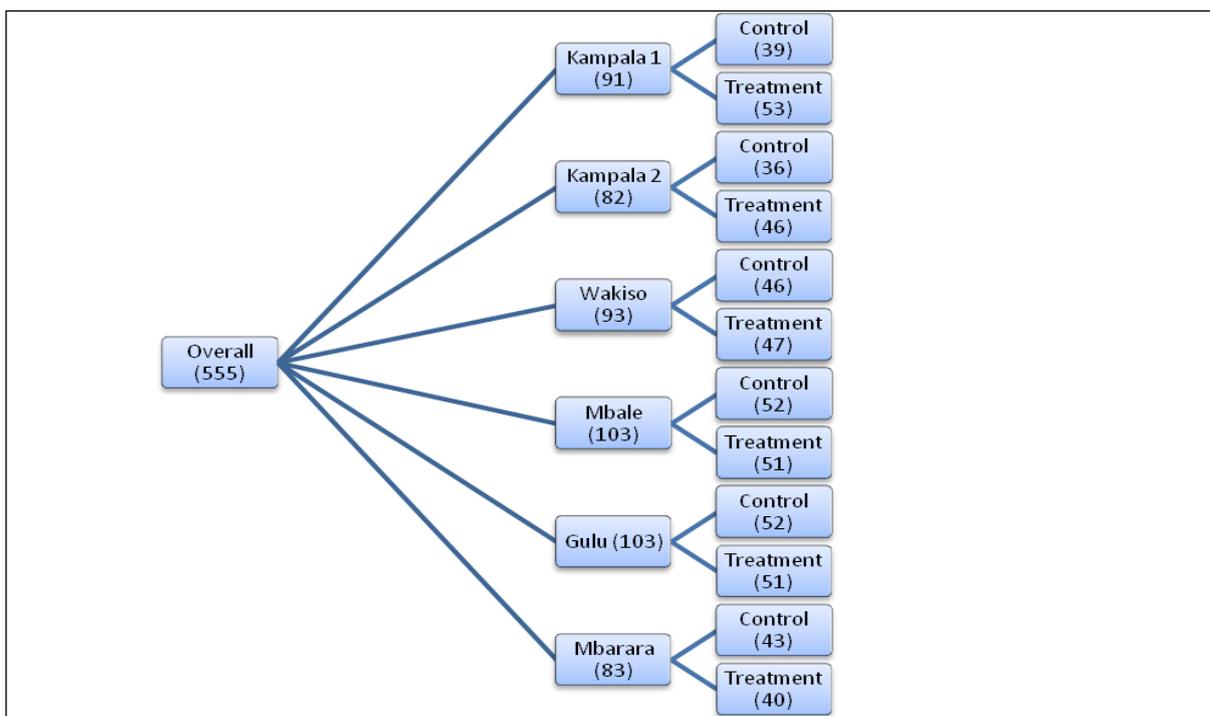
---

<sup>1</sup> The U-report platform is a Short Message Service (SMS) messaging system currently managed by UNICEF and is available to both government and non-government stakeholders to engage youth in discussions and opinion polls on topical issues concerning their communities. The platform is managed through an open-source gateway and makes it possible for youth to receive and respond to SMS messages at no cost.

implications of this categorisation until the time for the intervention, except for that one person who had performed the randomization.

Figure 1 shows the distribution of participants in the control and treatment groups by district, as assigned on invitation and prior to the intervention day. Of the 555 that attended the clinic, 268 were assigned to the treatment group and 287 to the control group.

**Figure 1: Random assignment of study subjects**



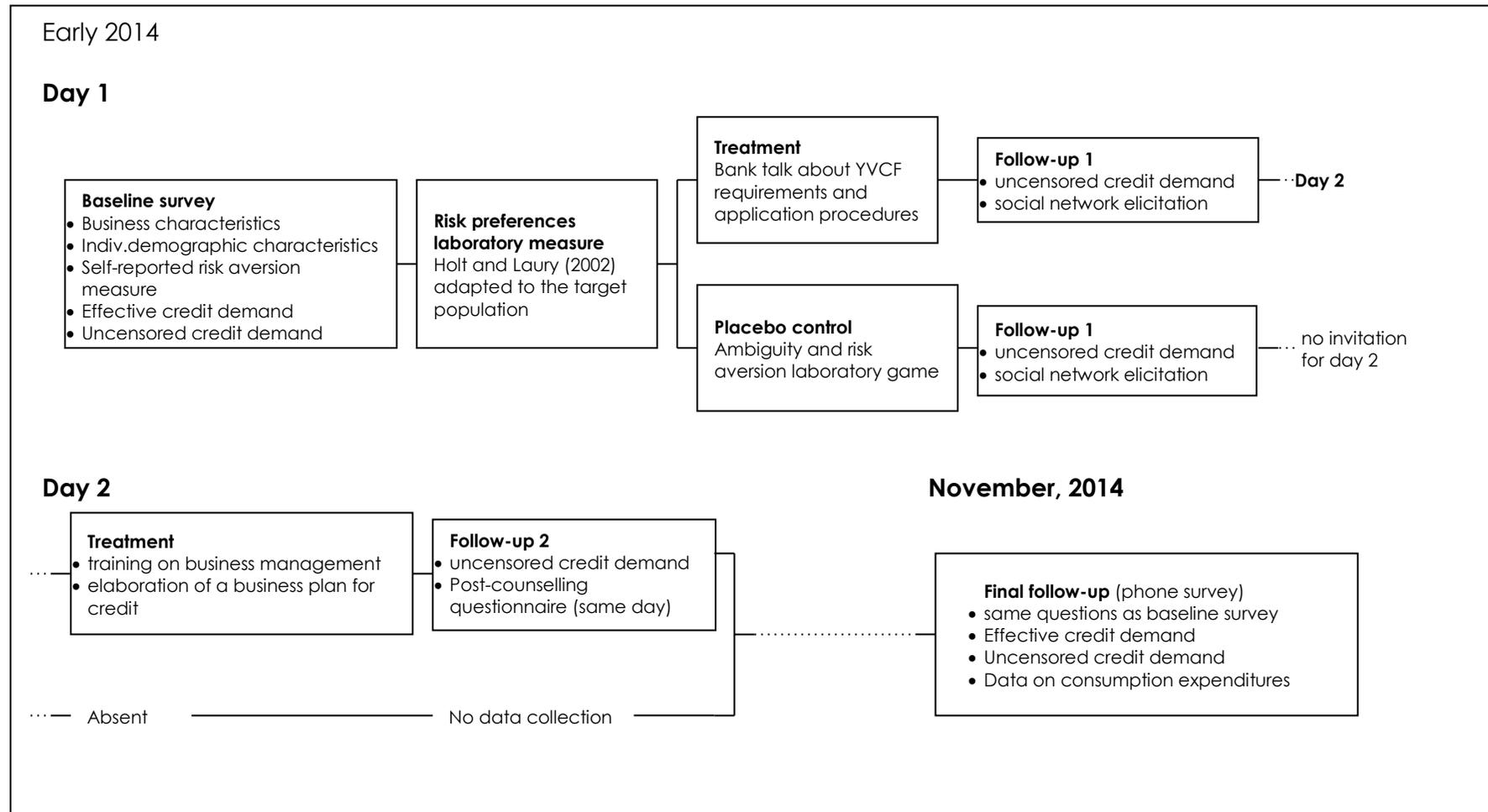
### 3.2. Experimental Design

The intervention that we aim to evaluate is the two-day business clinic based on a credit-counseling module that can be easily replicated (available on the PEP website). This module is a detailed protocol specially designed to help young entrepreneurs to organise their business enterprise in a way that would enhance their eligibility for business credit. The training manual and materials were prepared ensuring that the training was replicable, easy to understand by all participants and delivered with high quality; and that the content was relevant to the current investment context and labor market needs.

The objective of our intervention was to inculcate a gradual appreciation of available credit services and expose beneficiaries the common pitfalls to avoid in their credit application processes. Ultimately, the intervention aimed at changing the young entrepreneurs’ mindset in order to realise a desired change in behaviour: improved risk tolerance and increased demand for credit. The clinic’s longer-term goal was to contribute to high impact solutions to accelerate credit uptake for young entrepreneurs.

We collected information at four stages of the experiment to build a panel database that contained individual information from a baseline survey and three follow-up surveys. Immediately following each clinic, we collected post-intervention data from participants. On day one, this was limited to the new loan amount that the participants would wish to obtain; while on day two, the treatment group was requested to fill out a short questionnaire highlighting their immediate reactions to the clinic and things to take-away from the counselling sessions. Then a few months later (3-4), we conducted a follow-up phone interview with all study participants. Figure 2 shows the structure of our experimental design and the timeline of the various data sources used for our evaluation.

**Figure 2: Experimental design and timeline data collection**



### 3.3. The risk game

We measured participants' risk aversion using the experimental design proposed by Holt and Laury (2002). This experiment measured risk aversion on a scale from one to ten with zero being risk lover, four being risk neutral, and 10 being highly risk averse.

To elicit risk preferences, we used a multiple investment choice lottery following a procedure similar to that of Holt and Laury (2002). Each participant was presented with a set of two investment choices: a safe investment and a risky investment as shown in Table 1. To facilitate comprehension, we illustrated each investment option using an urn with 40 black and white balls in varying combinations. The white balls represented low payoffs and the black balls, high payoffs. In the safe investment option there were more black balls than white balls and the two payoffs are close; the white balls pay \$1.60 dollars and the black balls pay \$2.40. In the risky investment option, there are more white balls than black balls with a larger margin between payoffs; the white balls pay \$0.40 and the black ones \$4.00. Appendix 2 contains the detailed experiment instructions.

**Table 1: Investment options and payoffs**

	<b>Safe option (a)</b>	<b>Risky option (b)</b>
<b>white ball: low payoff</b>	\$1.6	\$2.4
<b>black ball: high payoff</b>	\$0.4	\$4.0

For risk elicitation, participants were presented with 10 investment options, all presenting 40 balls but in varying black to white ratio combinations. Individually, they wrote down their ten investment decisions each time choosing between the risky or safe option. The probability of high payoffs, that is, the number of black balls, increased with each lottery as the game moved forward as shown in Table 2. The last column shows the difference in expected values between the two investment choices. In the first four lotteries, the safe investment had a higher expected payoff, but as the probabilities of the high payoffs increased down the table, the expected value of the risky investment also increased. One single lottery was randomly selected for payment.

**Table 2: Decisions and preferences for risk**

Lottery	Probability of high pay off (a)	Expected pay off difference: safe-risky (b)
1	1/10	\$11.7
2	2/10	\$8.3
3	3/10	\$5.0
4	4/10	\$1.6
5	5/10	\$1.8
6	6/10	\$5.1
7	7/10	\$8.5
8	8/10	\$11.8
9	9/10	\$15.2

## IV. Results and application

### 4.1. Characteristics of participants

A total of 555 youths from the 5 regions participated in the study. In terms of socio-demographic characteristics, the eligible youth for this study was aged between 18-35 years and owned a business. The average age for both participants in the control and treatment groups was 26 years with only 38% indicating that they were married. Males represented 82% of those whom participated, underscoring the low participation of women with self-owned businesses. The results also showed that older youth were more willing to borrow.

With respect to education and literacy, 98% of the youths could read and write and about the same percentage attended at least primary education. About 64% of the youths had some formal education related to economics, business or finance prior to the study, and this correlates positively with the ownership of a business. However, the results show a negative relationship between willingness to borrow and the level of education, implying that more educated individuals are likely to borrow lower amounts.

In terms of economic activity and assets, the youth ran businesses ranging from agriculture (22%), manufacturing (7%), trade and services (61%) and others (10%). However, only 24% of these business enterprises were registered. The registration of a business was positively correlated with the level of education, implying that the more highly educated the youth were, the more likely they were to register their businesses compared to their counterparts with a lower education level. The average approximated income for the group was USD 79 although about 77% earned below this average.

Ownership of a bank account is key in the mobilization of savings and also a requirement to access credit from the YVCF. At the time of entry, 75% of the youths had a bank account and 68% of those with an account reported having deposited some money during the past 6 months. However, the consumption of formal bank credit among the youth was low (7%) but more common with those that already had a bank account (positive correlation). The majority of the youth indicated that they borrow money from friends/relatives (55%) and microfinance institutions (30%). Furthermore, the distance to the bank or financial institution was negatively correlated with the willingness to take credit i.e. the longer the distance, the less willing one was to take credit.

## 4.2. The Balancing condition

We analyzed the difference in the key characteristics of those in the control and treatment groups to determine whether the sample assignment was random. In Table 1, we tested the similarity between the two groups by comparing the variables' means prior to the clinic. A test of equality of means tells us if the observed differences in means between the treatment and the control groups prior to the program are due to random chance and not to systematic differences.

On average, we observed no systematic difference between the control and treatment groups. We conclude that randomization created balance between the treatment and control groups. Out of the 14 comparisons made, all the variables were found not to be statistically different for both the control and treatment groups at the 10% significance level. This shows that the characteristics of the participants assigned to the control and treatment groups were similar. Overall, test results provide strong evidence that imbalances do not affect our conclusions. Nonetheless, we report impact estimates with and without the controls listed in this table.

**Table 3: Randomization balance check**

variable	Mean difference <sup>+</sup>	Test statistic	p-value
<b>Age</b>	0.436 (0.289)	T = 1.510	0.192
<b>Marital Status</b>	0.078 (0.055)	T=1.420	0.214
<b>Level of education</b>	-0.253 (0.194)	T = -1.030	0.250
<b>Ownership of a business</b>	0.242 (0.080)	T=-1.160	0.300
<b>Registered business</b>	0.015 (0.032)	T=0.450	0.668
<b>Has a bank account</b>	-0.018 (0.042)	T= -0.410	0.695

<b>Gender</b>	0.035 (0.027)	T=1.290	0.254
<b>Risk aversion</b>	0.000 (0.013)	T=0.030	0.977
<b>Has a current loan or credit</b>	-0.000 (0.000)	T=-1.200	0.283
<b>Uncensored demand for credit (willingness to borrow)</b>	0.000 (0.000)	T=0.210	0.839
<b>Ethnicity</b>		$\chi^2 = 4.488$	0.344
<b>Religion</b>		$\chi^2 = 5.569$	0.350
<b>Main economic activity</b>		$\chi^2 = 9.369$	0.497
<b>Business sector</b>		$\chi^2 = 4.228$	0.517

+ Standard errors clustered by evaluation clinic

In Table 3, we use t-statistics to test differences of means on the continuous variables of age, marital status, level of education, ownership of a business, registered business, the possession of a bank account, gender, having a current loan, willingness to borrow and risk aversion. The calculated p-values clearly indicate that there is no significant difference between both the control and treatment participants. Furthermore, we ran a Pearson's test which uses the chi square statistic to test for the significant balance differences in ethnicity, religion, main economic activity and business sector of the participant (95% level of confidence). The tests generate p-values that help us conclude that these variables were not statistically different for both the participants assigned to the control and treatment groups. This confirms that the random assignment of participants to the control and treatment group was properly conducted, and that our group assignment was unbiased.

### 4.3. Participant attitudes towards risk

Participants were exposed to ten investment decisions or options presented in such a manner that risk increased as one progressed to the higher options. A rational decision maker was expected to switch at most once from the safe investment choice to the risky choice. The switch points are informative about participants' attitudes towards risk. The greater the number at which the first switch from risky to safe option occurs, the more willing the individual is to take risks. We take the midpoint of the decision number before and after the switch as an individual measure of attitude towards risk. For example, if a participant switched over from the safe option to the risky option at decision five, we record 4.5 as his/her risk score.

In our sample, 250 (45%) participants switched back and forth from the safe to the risky option, making their choices inconsistent, although 98% of participants declared to have understood how to play the game. Frequent or multiple switching is typical of experiments conducted in the field (see notably Charness & Viceisza, 2011). One possible explanation for the multiple switching was that some participants tried to

apply their common sports betting principals<sup>2</sup> to this game without internalizing the scenarios at hand. We therefore restrict most of our analysis to consistent participants who switched only once because we are more confident about their understanding of the game.

Table 4 summarizes the distribution of risk preferences in our sample across different groups of participants. Column (a) indicates that 56% of participants can be classified as risk neutral, with risk aversion values between 4 and 5.5. Almost 20% are risk lovers (values between 0 and 3.5), and 24% are risk averse (values over 6). The average risk aversion is 5.1, which corresponds to risk neutrality. Among consistent participants in column (b), 41.7% are risk-neutral, 30.5% are risk averse, and 27.9% are risk lovers. The average risk aversion score in this subgroup is 5.2.

**Table 4: Distribution of the experimental risk aversion measure (%)**

Risk aversion measure	All participants (a)	Consistent participants (b)	Consistent	
			Male (c)	Female (d)
0-0.5	2.2	3.9	2.7	11.6
1-1.5	1.6	3	2.3	7
2-2.5	3.8	5.3	5	7
3-3.5	11.9	15.7	16.8	9.3
4-4.5	23.4	24.6	26	16.3
5-5.5	33	17.1	16.4	20.9
6-6.5	9.2	7.9	7.6	9.3
7-7.5	7.4	9.2	9.2	9.3
8-8.5	2	3.3	3.1	4.7
9-9.5	5.6	10.2	11.1	4.7
<b>Total %</b>	100	100	100	100
<b>average</b>	<b>5.1</b>	<b>5.2</b>	<b>5.3</b>	<b>4.7</b>
<b>no. observations</b>	<b>555</b>	<b>305</b>	<b>262</b>	<b>43</b>

Men in column (c) and women in column (d) had similar preferences for risk. The female average for risk aversion was 4.7, and the male average was 5.3. This difference is not statistically significant at the 10% level ( $p$ -value = 0,139). However, the power of this test could be questioned, since the number of consistent females (43) is much lower compared to that of men (262). We found that 27% of men are risk lovers compared to 35% of women. The proportion of risk neutral males is 42% and 37% for women. While 31% of males are risk averse, 28% of women also fall into this category. Our results are consistent with Mel, McKenzie and Woodruff (2008) who found no gender gap on risk aversion, or entrepreneurial attitudes. While their

<sup>2</sup> In Uganda, sports gambling and betting are common recreational activities among youth and some participants expect the underdog choice to give higher payoffs as in a regular betting setting.

findings are highly suggestive of likely findings of our study, the effect may not be casually inferred in the Ugandan context because of the influences of cultural roles and the business environment.

We further explored how our risk aversion measure from the laboratory game compared to self-reported risk preferences. We address this topic using our survey questions on diverse risk attitudes, which come from the German Socio-Economic Panel (SOEP). Participants use a scale from 0 to 10 to report their “willingness to take risk” in different aspects of their lives: when driving, with financial matters, with recreational activities, with work, with health issues and in general. As in the German survey, no monetary incentives were provided for this question. With regards to the general preference towards risk, 79% of participants were willing to take risks with more than half of them rating above 6 (on a scale of 0 – risk lover to 10 – very risk averse) in their general attitude towards risk.

To measure the correlation between our experimental measure of risk preferences and the survey questions, we estimated an ordered probit model with variances clustered by experiment. Table 5 shows the regression results with and without controlling for demographic characteristics. Like Dohmen, Falk, Huffman, Sunde, Schupp and Wagner (2011), we found that self-reported risk preferences on general risk aversion were good predictors of the observed experimental choices. However, most survey questions were not significant at 10% level. This is particularly surprising for the willingness to take risk in financial matters (p-value = 0.758) and at work (p-value = 0.472). It is only the question on general risk preferences that highly correlated to the experimental risk aversion measure, with p-value of 0.002. Even when controlling for demographic characteristics such as age, sex and ethnic group, the results were similar, that is, not significant at the 10% level. The differences in risk preferences between groups were strongly significant. Preferences of Baganda, Banyakole and Bagisu were statistically different from the Acholi’s preferences.

**Table 5: Ordered probit regression on individual risk aversion**

	Without control	With controls
<b>Preference towards risk</b>		
<b>Self-assessed risk preferences (1-3)</b>	-0.202*** (0.064)	-0.195*** (0.066)
<b>General attitude toward risk (0-10)</b>	-0.007 (0.053)	-0.024 (0.050)
<b>Detailed attitude towards risk (0-10)</b>		
While driving	-0.022 (0.024)	-0.021 (0.027)
In financial matters	0.014 (0.046)	0.022 (0.044)
During leisure and sport	-0.003 (0.029)	-0.003 (0.031)
At work	-0.013 (0.018)	-0.009 (0.017)
With your health	-0.006 (0.019)	0.002 (0.020)
<b>Demographic characteristics</b>		
Age		-0.016 (0.014)

Sex		0.402 (0.253)
<b>Ethnic group</b>		
Baganda		0.218** (0.105)
Banyakole		0.526*** (0.107)
Bagisu		-0.260*** (0.087)
Others		-0.014 (0.201)
<b>No. observations</b>	279	279
<b>Likelihood</b>	-568.5	-557.7
+ Standard errors clustered by evaluation session		***1%; **5%; *10% significance level

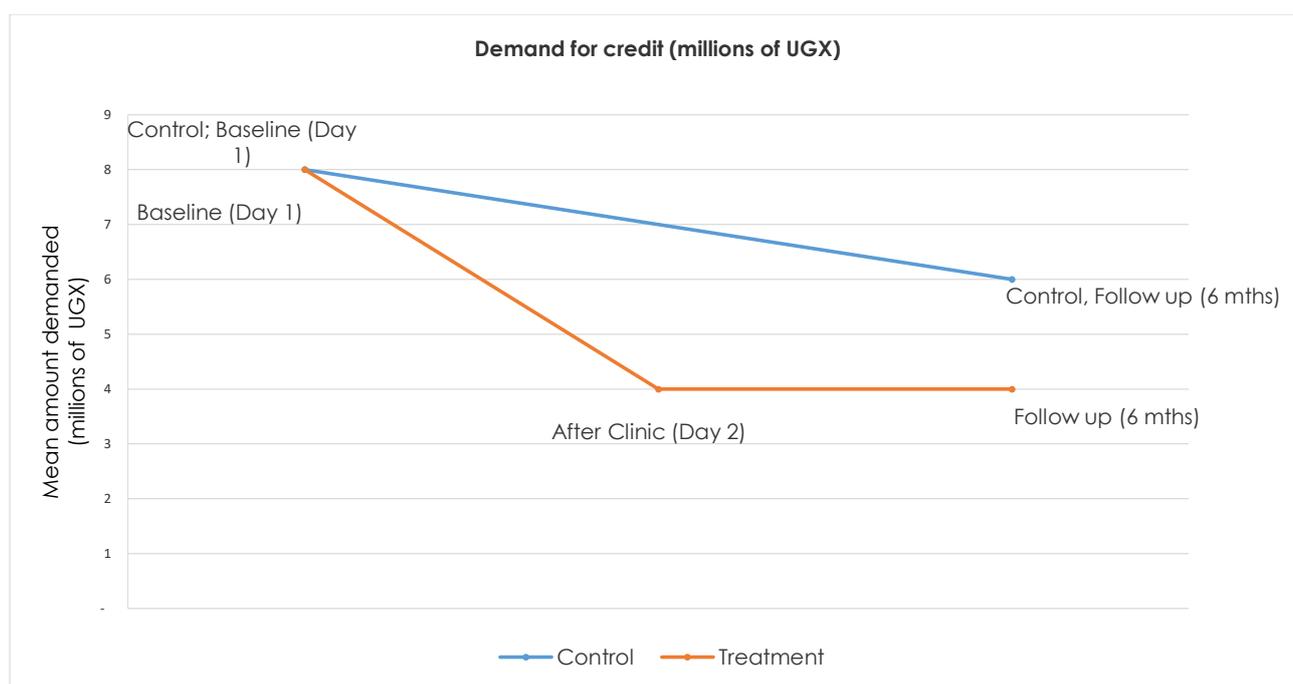
Our results raise concerns about the coherence of self-assessed and experimental measures of risk aversion, an issue that deserves further investigation. We chose to use the experimental results to measure risk aversion in our analysis, because participants had clear incentives to accurately respond to this question and this atypical of the common investment decisions.

#### 4.4. Intervention Impact

This evaluation seeks to measure the impact of credit counselling on demand for credit among young entrepreneurs in Uganda. In our study, we examine the role of risk aversion in the uptake of interventions aimed at providing solutions to accelerate credit uptake for young entrepreneurs. The hypothesis is that youth receiving credit counselling will exhibit greater risk tolerance and will show increased willingness to take business expansion credit compared to those that have not received counselling. An effect size of 20% was assumed during the design of this study.

An analysis of differences between pre-intervention and post-intervention loan amounts in Figure 3, shows a general reduction in loan amounts that study participants wish to borrow in both the control and treatment groups. The trend suggests that counseling did not lead to an increased credit uptake from conventional formal sources. In other words, youth are pre-disposed to take inappropriate credit when less aware of the actual risk associated with taking out credit. Information sharing on alternate financing mechanisms may have negatively affected the control and treatment groups' predisposition to seek credit. This could be attributed to a number of factors: youth being enlightened about the commitments involved when one takes credit, counselling emphasizing alternative sources of business finance, or process and structural bottlenecks such as inaccessibility of financial institutions.

**Figure 3: Average censored demand**



We use the Double-Difference (DD) method to estimate the intervention impact. Our approach is to measure the causal impact of a two-day credit-counseling workshop on applying for credit based on uncensored loan amounts reported by participants. The choice to use DD is based on the need to ensure that unobserved heterogeneity in participation is differenced based on the assumption that responsible factors are time invariant. The estimation results below suggest that, on average, those who benefited from the credit counselling decrease their potential loan amount by approximately 1,440 USD. Moreover, the decrease is statistically significant as shown by the Stata output in Table 6.

**Table 6: Regression estimate of intervention impact**

Linear regression		Number of obs = 337			
		F(1,5)	= 43.79		
		Prob > F	= 0.0012		
		R-squared	= 0.2191		
		Root MSE	= 3.7e+06		
(Std. Err. adjusted for 6 clusters in clinic_code)					
D	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
T	-3982582	601824	-6.62	0.001	-5529620 -2435544
_Cons	345100	371007	0.93	<b>0.395</b>	-608605 1298805

Because the study utilized partial randomization (i.e. participants selected randomly but on the condition of selected observable characteristics, such as the ownership of a business), the probability of participating in the program is dependent on the potential gain from the program. We therefore analyse the average treatment effect, which compares the treatment and control groups conditional on participants satisfying the eligibility criteria for enrolment into the program. Table 7 presents the Treatment of the Treated (TOT) both with and without controls.

**Table 7: Probit regression of treatment outcomes**

<b>Outcome Variables</b>	<b>Coefficient (S.E.)</b>	<b>No. of obs</b>	<b>Coefficient (S.E.) with controls</b>	<b>No. of obs</b>
<b>Amount borrowed (Any source)</b>	-0.194 (0.202)	100	-0.255* (0.107)	99
<b>Amount one is willing to borrow given the chance</b>	-0.171 (0.088)	487	-0.174 (0.098)	484
<b>Amount applied for (Formal bank credit)</b>	-0.211 (0.282)	73	-0.253 (0.319)	72

#### 4.5. Intermediate results

A number of proxy variables were included in the study to assess the intermediate results and the impact of the intervention. At the end of the credit-counseling clinic, participants were asked what skills they gained from the counseling sessions. Sixty six percent mention loan or finance management as the key area in which they gained most insight. An equal proportion mention business plan preparation while 19% recognized business registration.

We use the study data to explore the extent to which the existing policy framework meets the challenges associated with youth unemployment. The study finds that 77 % of businesses are not registered, yet only 10% employ more than 5 persons. The majority of businesses are in the trade or service sector (71%) followed by agriculture (20%). While the agricultural sector is the biggest contributor to the country's GDP, we note a transition to the trade and services sector. However, the informal nature of businesses makes it impossible to expand or employ more persons and this jeopardizes competitiveness.

At follow-up it was established that 56% of youth borrowed money during the preceding 6 months. Six in every ten of these borrowed from family and friends suggesting a preference for informal sources of credit. For those who did not take credit, we further investigated the reasons for not taking credit and found that over 50% claim they did not fulfil the eligibility requirements. This confirms the deterrent factors

associated with the regulatory requirements on credit uptake. We used a t-test to confirm whether there was a significant difference in credit appetite between the treatment and control groups at the time of the baseline. The t-test ( $t=-1.258$ ,  $p=0.210$ ,  $\text{diff}=-0.039$ ) revealed that there was no significant difference between the proportions that had not borrowed before. We therefore focused on those who did not have credit and assessed the marginal effect of the treatment. We found that of all the participants who had not borrowed before they were treated, 15% of them would have actually borrowed after the treatment, as compared to 13% if they had not been treated at all. This marginal difference is significant.

With regard to the ownership of a bank account, we assessed whether the treatment and control groups were the same at the time of the baseline and found no significant difference ( $t=-0.631$ ,  $p=0.53$ ,  $\text{diff}=-0.022$ ). We therefore focused on those who did not have a bank account at the time of the base line to assess the marginal effect of the treatment. If all the participants who did not have a bank account before they were treated, 51% of them would have opened a bank account after the treatment, while this proportion would be 48% if they had not been treated at all. This marginal difference is significant ( $p=0.000$ ).

We also assessed whether the treatment had a significant marginal effect on the ownership of assets. In the study a person is said to have an asset if they had one of the following: a television, livestock, a house, building or kiosk, land, or motorcycle. We found that if we had not treated the entire sample, 39% would currently own at least one asset, while this proportion would be 41% if the entire sample were treated. This marginal difference is significant ( $p=0.000$ ).

## V. Conclusions & policy recommendations

This evaluation provides key lessons to the government and other institutions designing programs targeting young entrepreneurs. The specialized business clinics not only provide a platform for raising young people's awareness about the key elements and requirements to access the YVCF, but also provide vital information about business management. They provide key lessons and guidelines on how to utilize credit resources to expand and improve business, while also ensuring that trainees manage the businesses appropriately to be able to pay back the borrowed funds. The training helped the youth appreciate the importance of undertaking better business practices, such as preparing and following a business plan, book keeping, managing credit and the profits accrued from the business.

We also find that entrepreneurial risk tolerance was associated with the youth's demand for credit. When the youth are made aware of the true probabilities of a risky investment, they exhibit greater caution with their credit choices and an appreciation of the need to effectively use the resources for the intended purposes. Our study shows that young people will ask for relatively small amounts of money if they know the true risks associated with borrowing. This is shown in the adjustment of the proposed amounts of credit they would borrow for their businesses, as well as their making use of alternative sources of funding other than the YVCF.

This study provides evidence that the provision of credit in the absence of adequate awareness of expected risks may not translate into higher uptake, business expansion and reduced unemployment. While previous entrepreneurial training has a significant effect on one's willingness to apply for credit, youth that attended credit counselling aspired for a significantly lower amount of credit than their counterparts who did not receive any counselling. They also exhibited a better understanding of the risks associated with borrowing funds for which there is no definite plan.

The networking opportunity presented by the clinics provides a platform for sharing business ideas and experiences. In this way, the entrepreneurs continuously seek assistance from business mentors on their businesses. Participating youth are more likely to explore other forms of business finance like supplier credit, grants and loans from family and friends. In some cases, they opt to utilize own savings, looking beyond formal sources of credit for businesses.

Generally, credit counselling should be part and parcel of entrepreneurship programs targeting and empowering youth. The government should make the beneficiaries of the credit programs aware about the conditions and requirements for accessing the programs before implementation. The vocational curriculum should incorporate credit counselling as a distinct module to foster appreciation and knowledge of good financial management for business success. This should be coupled with the provision of soft skills that enable the entrepreneur to compete favourably in the market.

Enterprise education is decidedly a welcome strategy in the National Youth Policy and the establishment of information centers is an even better way to get the necessary information to spur on enterprise start-up and development. However, it needs to be emphasized that enterprise education proposed by the policy does not highlight specific aspects of training. Without such a focus, the providers of enterprise education may each design and deliver their own versions of training with varying results and limited attitudinal impact. Such enterprise education should be buttressed with business counseling on a continuous basis so that the youth can stay on top of business ideas and challenges. The information centers proposed by the policy could consider this as a strong entry point.

The study reveals that establishing credit facilities with complementary business counseling would provide a stronger incentive to rope in the youth and would perpetuate the benefits of creating and sustaining such youth loan schemes. There is a need to ensure that implementing institutions comply with the conditions and requirements of the credit programs without suggesting or imposing additional conditions that discourage the intended beneficiaries.

## References

- Ahaibwe G, Kasirye I and Barungi M (2014). Promoting self-employment through entrepreneurship financing: Lessons from the Uganda Youth Venture Capital Fund. *Economic Policy Research Centre, Kampala, EPRC policy brief NO. 47.*
- Antonites A.J. and R. Wordsworth (2009). Risk tolerance: A perspective on entrepreneurship education. *Southern African Business Review Vol. 13 (3) page 82.*
- Bandura, A. (1988). Organizational Application of Social Cognitive Theory. *Australian Journal of Management, 13(2), 275–302.*
- Charness G. and A. Viceisza (2011). Comprehension and Risk Elicitation in the Field: Evidence from Rural Senegal. *IFPRI Discussion Paper 01135.*
- De Mel, Mckenzie and Woodruff (2008). Are Women More Credit Constrained? Experimental Evidence on Gender and Micro-enterprise Returns. *Institute for the Study of Labor, IZA Discussion Paper No. 3743*
- Dohmen T, Falk A, Huffman D, Sunde U, Schupp J and Wagner G (2011). Individual Risk Attitudes: Measurement, Determinants and Behavioral Consequences. *Journal of the European Economic Association, European Economic Association, vol. 9(3)*
- Guiso and Paiella (2005). The Role of Risk Aversion in Predicting Individual Behaviour. *Bank of Italy Economic Working Paper No. 546.*
- Holt A. & Laury S.K. (2002). Risk aversion and incentive effects. *The American Economic Association Vol. 92, No. 5 (Dec., 2002) 1644-1645.*
- Karlan D and Valdivia M (2011). Teaching Entrepreneurship: Impact of Business Training on Microfinance Clients and Institutions. *The Review of Economics and Statistics, May 2011, 93(2): 510–527*
- Ministry of Education and Sports (2011). Tracer study in BTVET sub sector, Kampala, Uganda.
- Mutambi J, Byaruhanga J K, Trojer L, Buhwezi B.K (2011). Research on the State of Business Incubation Systems in Different Countries: Lessons for Uganda. *African Journal of Science, Technology, Innovation & Development, Vol. 2, No. 2, 2010, pp. 190-214.*

## Appendix 1: Correlation matrix for selected characteristics of participants

	Amount willing to borrow	Bank account	Distance to nearest Financial Inst.	Bank Availability	Approx. Income	Land	Livestock	House	Car	Motor cycle	Television	Highest level of education	Marital status	Gender
<b>Amount willing to borrow</b>	1													
<b>Bank account</b>	0.081	1												
<b>Distance to nearest Financial institution</b>	-0.019	0.031	1											
<b>Bank Availability</b>	0.059	0.102	-0.065	1										
<b>Approx. Income</b>	0.045	0.088	0.400	0.060	1									
<b>Land</b>	-0.047	0.036	-0.037	0.008	0.108	1								
<b>Livestock</b>	0.074	0.016	0.063	-0.059	0.068	0.143	1							
<b>House</b>	-0.008	0.005	0.068	-0.066	0.0909	0.396	0.119	1						
<b>Car</b>	0.051	0.114	-0.015	0.113	0.3392	0.252	-0.022	0.169	1					
<b>Moto-cycle</b>	0.082	0.063	-0.023	0.004	0.0074	0.096	0.117	0.172	-	1				
<b>Television</b>	0.164	0.106	0.086	0.063	0.1252	0.034	-0.060	0.074	0.240	-0.025	1			
<b>Highest level of education</b>	-0.004	0.356	0.002	0.095	0.0879	0.007	0.022	0.041	0.237	-0.006	0.117	1		
<b>Marital status</b>	-0.026	0.075	0.058	-0.107	0.070	0.233	0.089	0.172	0.174	0.139	0.023	0.031	1	
<b>Gender</b>	0.076	-0.039	-0.127	-0.028	-0.118	0.078	0.166	0.043	-	0.070	0.001	-0.159	0.014	1
<b>Age</b>	0.019	0.171	-0.063	-0.069	0.075	0.240	0.109	0.180	0.195	0.025	-0.069	0.165	0.498	-0.037

## Appendix 2: Recruitment of participants

In order to ensure ease in convening the clinics, all participants were resident in their respective district and preferably within good proximity of the training center. A recruitment poll in Figure 4 was used to select eligible participants.

**Figure 4: Recruitment Poll for All Districts**

**Hello I am calling on behalf of the Ministry of Gender, Labour and Social Development regarding your response to a poll where you indicated your interest in applying for a loan through the YVCF. I would like to ask you a few questions. Is it agreeable with you?**  
ANSWER YES or NO; [IF NO>> End poll]  
IF YES: **Are you available for a 2-day non-residential workshop at [Venue] from [date] to [Date]?**  
ANSWER YES or NO; [IF NO>> End poll]  
IF YES: **What is your name? What is your gender? What is your current area of residence (Village Name)? What type of business are you involved in?**  
[Enroll respondent for workshop]

Following the poll, the eligibility of potential participants was validated with a phone call to inquire upon the following issues:

1. Availability for a two-day workshop at a specific date
2. Name of participant
3. Gender of participant
4. Current area of residence
5. Type of business

**Figure 5: Recruitment Poll (Follow Up)**

**Dear u-reporter, Good Morning/Afternoon.**

*My name is .....  
I am following up with you on the business clinic held in district/town).....at (venue).....on (date)..... which you attended earlier this year on invitation of the Ministry of Gender Labour and Social Development.*

*We are interested in hearing from you about any changes that have been registered in your business following your participation in the business clinic. If you accept to participate, I request you to allow 15-20 minutes of your time for the interview. At the end of this interview, you will receive a token of appreciation via mobile money.*

*Do you agree to participate? a. Yes b. No*

IF NO: **We would be grateful to know the reason**  
IF YES: **Undertake follow-up interview**

## Appendix 3: Risk aversion game write up (Baseline treatment)

This risk/ambiguity aversion experiment helps us to collect individual measures of risk preferences and study the variation of those preferences at different levels of ambiguity and how they relate to outcome variable (uncensored demand for credit).

Participants have a chance to make money depending on the choices they make (as stated in the pay-outs). The money earned by the participants during the experiment is given to them at the end of the session, after verification with their ID number that appears on their nametag. Those who prefer not to participate are given a chance to write their name at the bottom of the questionnaire and hand it in before the beginning of the game.

In this game, there is no wrong or right answer, just different preferences; decisions are taken individually, and there is no option of consulting anyone on the decision being taken. However, in case a participant has a reason to seek further clarifications, they are offered the chance to ask the available supervisor who responds in private.

The game entails making 9 decisions and marking a personal choice in the questionnaire. Each decision consists of choosing an option in which the participant would like to be paid based on the outcome of the game. He/she is required to make a decision between payments options Safe or Risky. Both payment options are an outcome of a random draw from an urn containing balls of two colors: **Black** and **White**. The only difference between the two options is the payoffs of the balls.

**Safe Option: Black balls pay USD. 2.160 White balls pay USD. 1.440**

**Risky Option: Black balls pay USD. 3.600 White balls pay USD. 0.360**

After the participant has made the nine decisions for the nine different boxes, he/she is requested to choose one box in which he/she would wish to play the game/lotto. The participant then randomly picks a ball from the chosen box and its pay-off from the outcome of this lottery that he/she will be paid. One single decision/box is randomly selected to be effective. Then, one single ball is randomly drawn from the corresponding urn.

### **For example:**

1. If a **black ball** is randomly drawn from the selected box; the participant would receive **USD. 2.160** if they chose **Option A**. If they chose **Option B**, they would receive **USD. 3.600**.

2. If a **white ball** is randomly drawn from the box, the participant received **USD. 1.440** if they chose **Option A** and **0.360** if they chose payment **Option B**.

### **Control treatment**

A similar game is played by the **control group** only that it introduces an element of “uncertainty” in the game – by coloring two of the balls (in the “low uncertainty” game) and by coloring four of the balls (in the “high uncertainty” game). In the low uncertainty game, there are two balls with their color concealed to the participants while in the high uncertainty game, there are 4 balls with their color concealed. The balls are either black or white, but they are covered in a dark polythene, and the participants are not be able to see their real color before the draw. If a ball in the dark polythene is randomly drawn, the team discloses its true color at that point. Again, one out of the nine decisions are randomly selected to be effective. Each decision has an equal chance of being used in the end. After this, we disclose the true color of all covered balls before selecting the winning ball.