

# PAGE

policy analysis on growth and employment



**pep**  
partnership for  
economic  
policy



## **The unintended consequences of the Malawi Farm Input Subsidy Programme (FISP): Women's entrepreneurship and financial inclusion.**

RESEARCH PROPOSAL

Presented to

**Partnership for Economic Policy (PEP)**

By

**Dieter von Fintel**

&

**Anja Smith**

**Martin Limbikani Mwale**

**Joy Omar Karim**

**Catherine Manthalu**

**Tony Kamninga Mwenda**

**Malawi**

10-06-2019

## SECTION I – PROJECT OVERVIEW & OBJECTIVES

### 1.1. Abstract (100 to 250 words)

– 100 to (max) 250 words

“Do general programs aimed at improving overall well-being have positive spillover over effects on specific improvements – particularly on women’s entrepreneurship activity and their financial inclusion? “ This paper answers the question using evidence from the general farm input subsidy of an agro-economy, Malawi. The program provides coupons to poor farmers for purchasing inputs at a reduced price with an aim of enhancing food security (Ricker-Gilbert, Jayne & Chirwa, 2011). In Malawi, women contribute disproportionately to agricultural labour but remain financially excluded. They rely on informal financing, mainly Village Banks. Under these banks members save money weekly and borrow at an agreed interest rate (Ksoll, Lilleør, Lønborg & Rasmussen, 2016). The village banks utilise community relationships and customs to evade transaction costs faced by formal financing. Therefore, the study informs policy on whether generic programs-such as the subsidy, in contrast to gender-specific programs, provide an adequate approach to reducing financial gender gaps. This falls under the PAGE theme of Entrepreneurship and Financial Inclusion, particularly the subtheme of Discrimination and Social Attitudes. We hypothesise that financial exclusion is reduced by increased bargaining power of women in agriculture, whose strengthened positions also allow them to participate in village banking. The wide coverage of the program creates potential for elimination of remote-residence structural discrimination. We employ instrumental variables and fixed effects estimation to address endogeneity. We use data from the World Bank Living standards Measurement Survey. The data is a longitudinal covering three waves with three-year gaps in between the waves from 2010-2013-2016.

### 1.2. Main research questions (max 500 words)

- max 500 words

#### **Main Research questions**

The paper seeks to estimate the effects of the Malawi Farm Input Subsidy Program (FISP) on women's entrepreneurship and financial inclusion. The main research question is “Does a generic program such as FISP lead to specific improvements in

women's entrepreneurship and financial inclusion?" The specific questions include: 1) does FISP receipt increase the autonomy of the many women involved in agriculture? 2) does improved women's bargaining power allow them to participate in village banks savings schemes and increase access to credit through formal channels? 3) does financial inclusion lead to second-round effects that deepen the degree of entrepreneurship among women?

The answers to these questions shall guide policy on whether it is important to encourage generic programs like FISP as a means to reduce gender gaps in entrepreneurship and financial inclusion.

Our main hypothesis is that the FISP, by increasing agricultural productivity and hence household income could make more resources available to households. If women command more of these resources, discrimination could reduce, allowing women to obtain credit and improve their businesses or embark on new ventures.

Our theory of change is as follows: Assume FISP is an exogenous shock to household resources; recipients might experience increased funds for two reasons. The first could be through increased profits resulting from cheaper, subsidised inputs. The second is from increased agricultural productivity resulting from the use of fertiliser. This in turn reduces expenditure on food due to increased consumption from own production. Furthermore, farmers may sell outputs and obtain more income in cases where the FISP contributes to crop production beyond the consumption needs of the household.

The agricultural sector in Malawi, as in most sub-Saharan countries, is dominated by women. Over 70 percent of the agricultural labour force is female (NSO, 2014). Women's engagement in the very activity that the FISP targets, is likely to lead to the FISP having trickle down effects to women. The first possible transmission mechanism is changes in men's attitudes towards women's involvement in economic activity. Because the subsidy increases resources for the entire household, men could become more accepting of their role in production and other forms of entrepreneurship. The second possible means is through increases in income generated by women through increased availability of on-farm casual jobs, "popularly known as ganyu in Malawi" (Ricker-Gilbert, 2014). These jobs are generated by increases in the number of cereal producers after the introduction of subsidies. At the same time, the unit price of ganyu increases as demand for labour increases. Therefore, through these means the bargaining power of women in households could increase through availability of resources to participate in business ownership. The businesses accumulate assets, which enables them to obtain credit and participate in village savings groups.

There are also anticipated feedback effects at every level. For instance, increased ownership of business by women could lead to more resources controlled by women, hence, further increases in women's autonomy through rising bargaining power. On the other hand, as women obtain more loans using the business assets as collateral for the loans, businesses are likely to grow, expanding business managerial and ownership positions for the women.

### 1.3. **Main contributions** (max 500 words)

- max 500 words

The financial exclusion of women and its resultant reduced participation in entrepreneurship has led to the introduction of many women-specific anti-discrimination programs. However, little is known about the contribution of generic programs (that do not directly target women), and which indirectly induce their access to credit. There is currently a large policy focus on the benefits to women of generic vs. gender-specific programs, not only in agriculture, but also in education and employment creation. This paper uses Malawi as a case study to understand the unintended consequences of a general program-the FISP - on women's access to credit and entrepreneurship through their increased household financial decision making autonomy. The paper investigates how a general policy could lead to improved gender-specific outcomes in an effort to reduce discriminatory and negative social attitudes towards women.

In general, literature on financial inclusion has not given adequate attention to the unintended consequences of generic programs and let alone the disaggregation of the analysis of these consequences by gender. Therefore, results from the paper shall spur further scientific research on the topic. The replication and comparability of the study becomes important since the chosen program – FISP - is implemented in most sub-Saharan countries and our choice of the dataset- the LSMS-ISA- is collected in several countries using the same survey instruments. To the best of our knowledge, this paper is a pioneer in the outlined specifications of the literature.

On the policy anterior, the paper contributes by providing reliable estimates that will be useful when formulating gender financial inclusion strategies and initiatives. This is particularly important because most countries have not yet incorporated gender-oriented policies in the financial sector regulation. For instance, the Reserve Bank of Malawi is currently busy with a process of developing its regulatory framework for the

Village Savings and Loans. As such, the results from this study shall be directly applicable and inform this formulation process.

In the second instance, the research will provide insight to the Ministry of Finance and Economic Planning of Malawi as well as similar ministries in other countries in Sub-Saharan Africa on the process of allocating national budgetary resources to agriculture. Positive results in the study shall provide an additional rationale for increased funding to generic programs like FISP. This shall be under an additional aim of a reduction in gender gaps in finance. Should the study find a negative effect on women -an exacerbation of gender inequalities in finance that favours men- then there is need for resource allocation into areas that will yield high results. The areas are particularly those that implement women specific strategies; literature has already shown that they produce positive outcomes, although at a localised low scale. The same argument/approach will also apply to the implementing agent of FISP, the Ministry of Agriculture. A negative result will imply that there is need for restructuring and strengthening a focus on gender in FISP. On the other hand, a positive spillover effect will show that such programmes in their current form produce the desired positive spillover effects in reducing women's discriminatory attitudes in finance.

## SECTION II – CAPACITY BUILDING

### 2.1. Team composition and experience

#### Team leader

Name	Age	Sex (M/F)	Highest degree/diploma
Dieter von Fintel	38	M	PhD (Economics)
<b>Training and experience</b>	Dieter von Fintel is an Associate Professor in Economics at Stellenbosch University. He is a research affiliate of the Institute of Labor Economics (IZA) and the Global Labor Organisation (GLO). He is a development economist who has extensive experience in using micro-data and quasi-experimental econometrics for policy evaluation. His work ranges from studies of health systems, food security, labour markets and agriculture in African development. He has supervised students from across sub-Saharan Africa, contributing to capacity building and the extension of		

	research on the continent. He has consulted widely to UNICEF and World Food Programme. He has also undertaken a number of projects with United Nations University (WIDER). His relevant contributions to this call include work on the role that financial inclusion played in women's autonomy and their propensity to enter the labour market in South Africa (funded by the IDRC/UKAid/Hewlett Foundation's GROW project)
<b>Expected capacity building</b>	Student supervision Project management Policy engagement
<b>Contribution to project</b>	Dieter von Fintel will oversee the project. He will draw the researchers and government stakeholders together to conceptualise the research, to ensure that it is academically rigorous and policy relevant. He will oversee the data analysis and assist in reviewing and writing manuscripts and policy briefs.

## Researcher #2

<b>Name</b>	<b>Age</b>	<b>Sex (M/F)</b>	<b>Highest degree/diploma</b>
Anja Smith	38	F	PhD (Economics)
<b>Training and experience</b>	<p>Anja is an economist and development practitioner. Her work has focused on the provision of research and technical capacity in the areas of financial inclusion and financial sector development, health economics and health systems analysis.</p> <p>Anja is currently a researcher at Research on Socio-Economic Policy (ReSEP: <a href="http://resep.sun.ac.za/">http://resep.sun.ac.za/</a>) at the Economics Department of Stellenbosch University and engaged in independent consulting for Cenfri and Percept. She spent the first eight years of her career consulting in the area of access to financial services and financial inclusion, helping to establish the Centre for Financial Regulation and Inclusion (<a href="http://www.cenfri.org">www.cenfri.org</a>) in 2008. Her time at Cenfri (an NGO) included organisational design and management, conducting research on various financial inclusion topics, as well as programme design and</p>		

	implementation on behalf of FinMark Trust. She returned to Stellenbosch University on a full-time basis in 2013 to pursue a PhD in Economics, graduating in 2016. Her PhD focused on various topics related to the financing, delivery and user acceptability of healthcare in South Africa. Her postdoctoral research examined questions related to the measurement of quality of healthcare and access to contraception and reproductive care for vulnerable women in South Africa.
<b>Expected capacity building</b>	Although Anja has a deep policy understanding of financial inclusion given her time at Cenfri and work for the FinMark Trust, the project will allow her to engage with financial inclusion at micro-econometric and gender levels. The research project will also help to further develop skills in evaluating policy outcomes and in communicating academic knowledge to a policy audience
<b>Contribution to project</b>	Anja will engage deeply with the research design and study questions, guide Martin and Tony in the data analysis and provide contextual knowledge and insights on gender, financial inclusion and the policy implications of all study findings. She will also assist with manuscript writing and review.

### Researcher #3

<b>Name</b>	<b>Age</b>	<b>Sex (M/F)</b>	<b>Highest degree/diploma</b>
Martin Limbikani Mwale	29	M	Mcom Economics
<b>Training and experience</b>	Martin Mwale is a PhD candidate at the Economics Department of Stellenbosch University. He is a development Economist by profession and training. He has served the Malawi Government as a Monitoring and Evaluation Specialist particularly in the Programmes, Projects and Social Economic Policy division since 2013. Martin has mastered quantitative methods of analysis including the usage of statistical software (Stata, R and QGIS). His research interest is in Micro-Econometrics and household welfare analysis		

	within the fields of Development Economics, Agricultural Economics, Labour Economics and Social Policy. Currently, he is working on measuring the effects of welfare policies using daylight satellite images in Malawi.
<b>Expected capacity building</b>	The research project shall assist Martin to further develop skills in evaluating policy outcomes, deepen knowledge in Microeconomics analysis and of most importance communicating academic knowledge to the policy audience. These expected capacity outcome come handy because Martin Has just began his PhD in 2019 that is also evaluating the effects, measurement, and social integration outcomes of the Malawi Farm Input Subsidy Program. Furthermore, the capacity building outcomes prepare him for future research endeavours particularly those under research writing for policy information.
<b>Contribution to project</b>	Martin will work hand in hand with Tony in cleaning the data for the paper, undertaking estimations and conducting an extensive literature review for the topic. He shall also be involved in writing the manuscript for the paper with guidance from the Team leader.

#### Researcher #4

<b>Name</b>	<b>Age</b>	<b>Sex (M/F)</b>	<b>Highest degree/diploma</b>
Tony Kamninga Mwenda	26	M	MA in Economics
<b>Training and experience</b>	Holds a Master of Arts in Economics from the University of Malawi. Having completed a 6 months on job training program with the African Development Bank, he has recently joined Millennium University and he is working as a Lecturer in Economics. He possess strong academic training in quantitative studies and use of statistical training. He has previously worked in areas of health programs that target women and vulnerable children and documented the social		

	injustices that affect women access to various care. He has recently (April 2019) independently published in Migration and Development journal his study on Spillover effects of education and migration. He intends to also publish his MA thesis in the coming months with his University supervisors.
<b>Expected capacity building</b>	<p>This research will help him have a practical understanding of applied micro-econometrics techniques and modelling. He is in his early years of career development as an upcoming junior academician whose benefits from the results of this research will inspire him for more and the skills gained will be used in these future research and dissemination in academia as well.</p> <p>The research will also give him a deepened understating of policy evaluation techniques. This is a new field that interest him and the knowledge gained will allow him to participant in more policy roundtables and further spur research that is relevant to gender inclusive economic development.</p>
<b>Contribution to project</b>	With his skills in quantitative economics, he will get involved in research data cleaning and analysis, as well as preparation of the manuscript while working hand in hand with seasoned and senior research professors.

#### Government official/officer #1

<b>Name</b>	<b>Age</b>	<b>Sex (M/F)</b>	<b>Highest degree/diploma</b>
Catherine Manthalu	28	F	Bsc Social Science (Economics)
<b>Training and experience</b>	Catherine Manthalu is a holder of a Bachelor's Degree of Social Science with a major in Economics from the University of Malawi. She is an Economist by profession and training. She has served the Malawi Government under the Reserve Bank as a Supervisor for Micro Financial Cooperatives since 2015 before		

	<p>being seconded to the Export Development Fund of Malawi where she is currently serving as a Manager for Markets and Research. Catherine has mastered research and analysis skills for Development Finance Institutions as well as supervisory skills for ensuring that financial institutions operate within the regulatory framework of Malawi as mandated by the Reserve Bank of Malawi. Currently, she is applying for a Master's Degree in Development Economics at various Universities.</p>
<b>Expected capacity building</b>	<p>This research will help her have a practical understanding of applied micro-econometrics techniques and modelling as she is preparing to enrol for her Masters Degree in Development Economics. Furthermore, as a Manager for Markets and Research, the research will help strengthen her research and analytical skills for her day to day work. The research will also deepen her understanding of policy framework of Malawi with a bias towards gender mainstreaming initiatives, which will enable her to advocate for women's access to credit offered by the Export Development Fund and micro financial cooperatives.</p>
<b>Contribution to project</b>	<p>With her experience in supervising financial cooperatives, she will be able to provide data on how women have been fairing towards accessing credit and other financial products. Furthermore, she will provide the policy context within which the Government operates with regard to the research topic.</p>

### Government official/officer #2

<b>Name</b>	<b>Age</b>	<b>Sex (M/F)</b>	<b>Highest degree/diploma</b>
Joy Omar Karim	30	F	MA (Policy Economics)
<b>Training and experience</b>	<p>Ms Karim is a holder of an MA in Policy Economics (2016) obtained with the Centre for Development Economics, Williams Collage, USA. She has also gone</p>		

	<p>through a number of trainings related to her line of work that includes Certificate of attendance in Monitoring food Security in the context of Sustainable Development Agenda. ; Certificate of completion, theory and practice for monitoring official statistics for sustainable development goals (SDGs) and Certificate of attendance in food security and vulnerability.</p> <p>She has for the past seven years worked as an economist with the Ministry of Finance Economic Planning and Development in the monitoring and evaluation division. She has also been the focal person for the monitoring of Sustainable Development Goals and desk officer for the Ministry of Agriculture, Ministry of Gender, Ministry of Environmental affairs and Ministry of Education. She has also worked with a number of private institutions as a core member on consultancies on part time basis</p>
<p><b>Expected capacity building</b></p>	<p>Ms. Karim expects to gain capacity in teasing out effects specific to a group of interest in this case Women. This project comes handy in the monitoring of sustainable development goals (her specialty) as it requires disaggregation of data in different aspects that was not in the case with Millennium Development Goals. Through the project, Miss Karim expects to Deepen her knowledge of how to evaluate causal effects of a policy. Furthermore, she expects to gain knowledge on how best generic programs can be implemented to have specific effects on vulnerable groups especially Women. Ms. Karim will also gain knowledge in how research outcomes can feed into policy formulation. In addition, she also expect to enhance her capacity in developing policy briefs.</p>
<p><b>Contribution to project</b></p>	<p>Ms. Karim will be a focal point of engagement with the respective ministries of Malawi Government during stakeholder consultations, workshops and dissemination of results. She will also provide guidance on how to factor in the policies in discussion in order</p>

	to conduct the assessment. She will also facilitate policy engagement, development, and implementation of the communication strategy. Miss Karim shall I also conduct literature review on FISP as well as economic empowerment in relation to gender in conjunction with the researchers. She will also work hand in hand with Martin and Tony in the data analysis.
--	---

**2.2. List of past, current or pending (non-PEP) projects in related areas involving team members, including resulting publications (If any)**

Indicate the funding institution, the title of the project and related publications, and list the team members involved.

<b>Name of funding institutions</b>	<b>Title of projects and related publications (link)</b>	<b>Team member(s) involved</b>
<i>Alliance for Financial Inclusion (AFI)</i>	<i>Title: South African and Kenya's engagement South Africa's engagement with the standard setting bodies and the implications for financial inclusion (2011)</i>	<i>Dr Anja Smith</i>
	<i>Publication (reference): <a href="https://www.gpfi.org/publications/south-africa-s-engagement-standard-setting-bodies-and-implications-financial-inclusion">https://www.gpfi.org/publications/south-africa-s-engagement-standard-setting-bodies-and-implications-financial-inclusion</a> <a href="https://www.gpfi.org/publications/kenya-s-engagement-standard-setting-bodies-and-implications-financial-inclusion">https://www.gpfi.org/publications/kenya-s-engagement-standard-setting-bodies-and-implications-financial-inclusion</a></i>	
<i>International Labour Organization (ILO)</i>	<i>Title: Kenya microinsurance landscape. Market and regulatory analysis (2011)</i>	<i>Dr Anja Smith</i>
	<i>Publication (reference): <a href="https://cenfri.org/wp-content/uploads/2012/07/Kenya-">https://cenfri.org/wp-content/uploads/2012/07/Kenya-</a></i>	

	<a href="#">microinsurance-landscape-report_Cenfri-FSDK-ILO-UNCDF_December-2010.pdf</a>	
World Bank and FIRST Initiative	Title: <i>Implementing FATF standards in developing countries and financial inclusion: Findings and guidelines.</i>	Dr Anja Smith
	Publication (reference): <a href="http://dro.deakin.edu.au/eserv/DU:30016859/dekoker-implementingFATF-2008.pdf">http://dro.deakin.edu.au/eserv/DU:30016859/dekoker-implementingFATF-2008.pdf</a>	
None –academic publication	Title: <i>Gender bias may contribute to missed TB cases in South Africa</i>	Dr Anja Smith
	Publication (reference): Smith, A., Burger, R., Claassens, M., Ayles, H., Godfrey-Fausset, P. & Beyers, N. 2016. Gender bias may contribute to missed TB cases in South Africa. <b>International Journal of Tuberculosis and Lung Disease.</b> 20(3):350–356	
UKAID, IDRC, Hewlett Foundation	Title: <i>Growth and Economic Opportunities for Women (GROW)</i>	Prof Dieter von Fintel
	Publication (reference): <i>Bargaining to Work: the effect of female autonomy on female labour supply</i> ( <a href="https://www.ekon.sun.ac.za/wpapers/2018/wp042018/">https://www.ekon.sun.ac.za/wpapers/2018/wp042018/</a> )	
The DAAD in region Scholarship for sub-Saharan Africa	Title: <i>Farm Input Subsidies in sub-Saharan Africa: Effects, Measurement and Social Integration Patterns (PhD thesis)</i> Publication (reference): Work in progress	Martin Mwale
Canon Collins Trust	Title: <i>Catch up growth for under-five children in a subsistence agro economy (Masters thesis)</i> Publication (reference): Work in progress	Martin Mwale

<i>International Development Research Centre (IDRC), African Migration and Development Policy Centre( AMADPPOC )</i>	<i>Title: The impact of Skill acquisition on choice of destination and occupation among migrant youth in Malawi (Master's Thesis) Publication (Reference): Work in Progress</i>	<i>Tony Mwenda Kamninga</i>
<i>Non funded academic paper</i>	<i>Title: Spillover effects of education on internal migration in Malawi Publication (Reference): Kamninga (2019) Spillover effects of education on internal migration in Malawi, Migration and Development, DOI: 10.1080/21632324.2019.1601831</i>	<i>Tony Mwenda Kamninga</i>

**2.3. List of past or current PEP-supported projects involving team members, including resulting publications**

<b>Project code (e.g. PMMA-12345)</b>	<b>Title of project and related external (non-PEP) publications, if any</b>	<b>Team member(s) involved</b>
	<i>Title:</i>	
	<i>Publication (reference):</i>	
	<i>Publication (reference):</i>	

**SECTION III – RESEARCH, METHOD AND DATA**

**3.1. Literature review (1000 to 1500 words)**

1000 to (max) 1500 words

Evidence from literature (Doss, 2001; Fletschner, 2008, 2009; Fletschner & Kenney, 2011; Gladwin, 1992; Government of Malawi, 2018; Kim & Watts, 2005; World Bank, 2001) unequivocally agrees that women are financially excluded. Amongst others, reasons for this exclusion include limited access to and control of resources due to legal, social and cultural restrictions (Fletschner & Kenney, 2011). The financial exclusion, typically in the form of limited access to credit, results into poor participation in entrepreneur activities among women. This poses negative consequences particularly in low-

income countries like those of sub-Saharan Africa that depend on agriculture- a sector largely driven by female labour in the region (Palacios-lopez, Christaensen & Kilic, 2017). The ill effects of female exclusion include lost revenue from their under participation in business, lost income from under-production in agriculture and forgone reduction in under performing loans, as females are more trustworthy in paying back loans relative to males (Gladwin, 1992; Kim & Watts, 2005; Doss, 2001; Chirwa, 1997)

Realising the negative impacts of women's access to credit, countries embarked on a number of policies and programs that aim at providing women with the much-needed access to credit to spur gender inclusive economic growth. Some of these programs and policies involve technological innovations (Doss, 2001; Zeller, Diagne & Mataya, 1998). Having noticed that one of major hindrances to women's access to credit was distances that women walk to and from financial institutions, technology presents a solution. This is the case because most women live in marginalized areas where agriculture production occurs (NSO, 2017, 2019). An example of this technology is mobile payment systems that reduces travel time and distances (Doss, 2001; Hanning & Jansen, 2010). The Philippines launched the first successful credit payment system in 2004, while Kenya's M-PESA has achieved the most impressive positive outreach for the underbanked (Hanning & Jansen, 2010).

Furthermore, countries have also started women-specific financial institutions aimed at improving gender inclusiveness in access to loans. Institutions such as women groups in Nigeria mobilize and train women farmers on management of information, savings and formulation of community groups (Ogunlela & Mukhtar, 2009). Such programs are also visible in many other countries, including in Kenya where the Women Finance Trust was created to focus on financing women and small medium enterprises (Siringi, 2011). The financing is done through provision of credit, trainings and technical assistance to necessitate mainstreaming women into the broad development agenda (Siringi, 2011).

In addition, other initiatives aim at enticing women to get involved in savings through facilitating the formation and involvement in informal groups that pull financial risk and ease access to credit (Gladwin, 1992). The positive outcomes of these groupings include increased agricultural diversification, creation of new business and providing more income incomes to marginalised women (Sanyang & Huang, 2008). For instance, Quisumbing & Pandolfelli(2010) find that women participate in groupings where an NGO speaker once presented a project speech with content that clearly outlines how women could benefit from the presented credit initiative.

Malawi is one of the countries in sub-Saharan Africa that is also implementing targeted programs and initiatives that aim at increasing women's access to credit. Such

programs include the introduction of Malawi Rural Finance Company (MRFC), Promotion of Micro-enterprise of rural women (PMERW), Malawi Mudzi Fund (MMF) and the Malawi Union of Savings and Credit (MUSCO) (Diagne & Zeller, 2001; Quisumbing & Pandolfelli, 2010). These institutions aim at providing loans to largely underbanked communities. For example, the MRFC has service centers in rural areas that allow access to seasonal agriculture loans for seed, fertilizer as well as short-term loans for farm equipment (Diagne & Zeller, 2001). Some banks also implemented a biometric smart card systems to enable illiterate women have easy access to credit. The initiative led to increased business by women due to security from abusive husbands who snatch their savings when using cash (Quisumbing & Pandolfelli, 2010).

The literature under review reveals women specific initiatives such as technological initiatives and inclusion of strategies that specifically safeguard women's involvement provide them with financial security, which increases incentives to participate in credit programs and results in increased entrepreneurship. The most important implicit outcome is the rise in women's household bargaining power and reduction of financial discrimination and reduced negative social attitudes of lending institutions. Nevertheless, these initiatives are highly localized such that they do not cover the geographically excluded women living in most remote areas whose access to technology is limited. Therefore, there is need for research in general programs with wide coverage beyond geographical and technological limitations. These programs could have potential positive spillover effects to women despite not designed to reduce the gender gap in enterprise and access to credit.

The Malawi Farm Input Subsidy Program is one of the general programs that has the potential to increase the household bargaining power for women due to its positive spillover effects. This is because women could be harnessing the effects of the subsidies due to increased productivity and the resultant increased resources as they dominate Malawian agricultural production (Gladwin, 1992). A special feature of the FISP program is that it targets female-headed households as one of the beneficiary identification criteria (Dorward & Chirwa, 2011). To the best of our knowledge, the subsidy literature in sub-Saharan has not yet covered the unintended consequences of the programs on women's entrepreneurship and financial exclusion. The results of the program likely increased financial autonomy from rising household bargaining power. Our paper intends to fill this research gap. Therefore, the study is relevant.

### **3.2. Methodology** (1200 to 1600 words)

1200 to (max) 1600 words

## Analytical methods

In the paper, we estimate the relationship between FISP and outcome variables using a model adapted from Kalamba (2013). This author evaluates the relationship between the program and gendered farm level productivity. Our model includes individual, household, and community level characteristics that could affect women's entrepreneurship and financial inclusion. The variable of interest is the FISP. FISP captures whether the household is selected into the program and is given farm input subsidy coupons. A selected household receives 4 vouchers. Two of the vouchers are for fertilizer (Top and basal dressing respectively) and the other two for crop seed (maize and legume respectively). In the design, a beneficiary household receives all the 4 coupons. Nevertheless, not all farmers redeem the entire set. Our examination of the data reveals that not all respondents that report to have benefited from the program report having all the 4 vouchers. Moreover, Gilbert & Jayne (2017) reveal that due to egalitarian culture some beneficiaries share the inputs with their neighbours. This variation in the subsidy input usage allows us to estimate the intensity of the program at household level. The FISP is a dummy variable that represents 1 if a household received at least one voucher and zero otherwise. Alternatively, for the sake of robustness the FISP is a count variable, indicating the number of vouchers the household used, ranging from 0 to 4. The coefficient represents an average treatment effect of participation. The model can be expressed as:

$$Y_{it} = \beta_0 + \beta_1 FISP_{it} + \beta_4 Characteristics_{it} + \epsilon_{it} \quad (1)$$

where  $i$  indexes the household head, who receives the FISP coupons – across the waves of the panel this individual may change in non-random ways, as the household composition may change, and the FISP may even effect who is regarded as the head. We will conduct various robustness checks to assess the influence of this problem. However, households and individuals of a large section of our panel remain stable, so that we may choose to work with this sub-section of the data.

$t$  indexes time.

The explained variables, captured by  $Y$  in equation 1 represent financial inclusion and women's entrepreneurship. We study access to credit and participation in village savings cooperatives, as well as business ownership and management beyond agriculture. Female is a dummy variable with 1 representing women and 0 capturing males. Characteristics cover various categories of control variables. The individual level attributes include age, schooling level and land holding; those of the household encompass the dependency ratio, household size, household income and household

asset holding. Community level characteristics include availability of a village development committee, number of savings and credit cooperatives and number of business associations.

In the equation 1 captures the relationship between FISP and the outcomes. We assess whether this coefficient is larger for males than females in separate equations – either by interacting our coefficients with gender or running separate equations. We will partition the sample by gender if tests for structural differences using a chow test support this approach. A positive coefficient on the *female x FISP* interaction (or a larger FISP coefficient in the female than the male equation) entails that FISP helps in reducing the gender gap in access to the outcomes. A negative coefficient shows that FISP exacerbates the gender gap in the access by favoring males over females. If the coefficient is not significantly different from zero then generic programs like FISP have no role to play in reducing gender differentials in access to credit and entrepreneurship and financial inclusion. In equation, 1  $\epsilon$  captures any other factors that left out in the model but could explain our outcomes, assumed independent and identically distributed. Furthermore, estimating this equation by Ordinary Least Squares requires that this error term is not related to FISP receipt. A violation of this assumption leads to endogeneity, which demands an identification strategy to interpret the relationships as causal evidence.

### **Identification**

A notable concern when estimating the relationship between FISP and the outcomes is that the allocation of coupons is not random. The program targets vulnerable households that have land but cannot manage to purchase farm inputs at a market price. These vulnerable households are also unlikely to have assets to participate in entrepreneurship or to acquire credit with as collateral. As such, we cannot obtain causal evidence using ordinary least squares as presented in equation 1 unless we control for this endogeneity. Formally, the FISP coefficient relates to the error term such that the estimated coefficient is becomes inconsistent.

To remove this potential endogeneity we employ instrumental variables. Karamba (2013) establishes that a rainfall shock in the previous season to the one under observation, induces exogenous variations in the number of coupons received in a particular area. This rainfall shock affects the variability of number of coupons only at Extension Planning Area level (Kalamba 2013). Nevertheless, the allocated number of coupons per beneficiary household remains 4. The rainfall shocks can be either positive or negative. Higher rainfall than what is required for suitable crop harvests

results in low yields. On the other hand, droughts also results in poor harvest and hence low yields. The Government of Malawi provides more coupons to areas that previously experience low harvest as a remedial measure for food insecurity. As such, we shall instrument the subsidy coupon with lagged rainfall from its historical mean.

The success of the instrumental variables technique to remove the endogeneity rests on two important assumptions. The first is that the instrument should not directly relate to the outcome variables but only through the regressor. In our case, rainfall should not directly affect entrepreneurship and financial inclusion but only through the FISP. We argue that since rainfall is natural it can only affect the behavior response of the FISP administration. Furthermore, the FISP should not have feedback effects on rainfall. Nevertheless, we cannot test this assumption and discuss an alternative strategy below. The second assumption is that rainfall should induce a significant change in the coupon distribution. In our case, this implies that rainfall deviations should lead to significant change in coupons distribution (formally an f-statistic above a threshold of 10) and uptake of the coupons should be in a positive direction for the entire sample not positive in one part of the sample and negative in another. We shall test this assumption in the empirical analysis of the paper.

In this approach we derive the estimated structural equation as:

$$Y_{it} = \beta_0 + \beta_1 FISP_{it} + \beta_2 Characteristics_{it} + \epsilon_{it} \quad (2)$$

In equation (2) the variable FISP is predicted from a first stage regression of the FISP on the rest of the exogenous explanatory variables that includes rainfall deviations presented as:

$$FISP_{it} = \beta_0 + \beta_1 Characteristics_{it} + \beta_2 Rain_{it-1} + \epsilon_{it} \quad (3)$$

In equation (3), we include the lagged rainfall variable while equation (2) does not include the variable. This entails that the variable FISP in the structural equation (2)-once we instrument the subsidy captures only the increase in coupons due to exogenous changes in lagged rainfall. The FISP, therefore measures the local average treatment effects of coupon participation to entrepreneurship and financial inclusion.

It should, however, be noted that in the event that entrepreneurship is agro-based, the rainfall shock instrument may not adequately remove endogeneity; it could have a direct effect on the outcomes of the enterprise. We therefore shall employ a modified instrumental variable technique - the Lewbel (2012) approach to validate our external IV estimates. The Lewbel approach generates instruments as simple functions of the heteroscedasticity present in the data that is included in the

population regression function (Devkota & Panda, 2016). This is particularly useful if the proposed instrument is included in the equation of interest, having a direct effect. The approach also allows tests to analyse the strength and validity of the instruments, analogous to the standard IV approach assumptions (Brown, Martinez-Gutierrez & Navab, 2014). Lewbel (2018) has shown that this approach is generalizable to the case where the endogenous variable is binary. Furthermore, the first stage regression need not be linear. As a result, we are able to use this approach to analyse the FISP as a binary selection into treatment using a probit specification, and the intensity of treatment using a count specification (such as Poisson or Negative Binomial model).

The instrumental variables approaches remove reverse causality and measurement errors in the FISP. If the nature of the endogeneity is time variant, some permanent unobservables may still bias results. Neither the standard two-stage least squares nor the Lewbel (2012, 2018) approaches necessarily remove individual time constant heterogeneities that affect the relationship of interest, unless explicitly controlled for. We shall therefore include a fixed effects estimation of the equation. The Lewbel (2018) implementation of this model also allows for this panel specification. This approach removes time constant averages as such the estimated equation modifies to:

$$Y_{it} = \alpha_0 + \alpha_1(FISP = Rain_{it-1}) + \alpha_2 Characteristics_{it} + \mu_i + \epsilon_{it} \quad (4)$$

We capture the fixed effects in equation (4) by  $\mu_i$ . Averaging off equation (4) removes the fixed effects from the model and the estimated equation shows the effects of changes of participation in the FISP on women's entrepreneurship and financial inclusion. Equation 4 therefore estimates the relationship between the farm input subsidy program on the outcomes on interest while accounting for potential endogeneity by combining both Fixed Effects and instrumental variables techniques in a single formulation.

### 3.3. Data requirements and sources (1000 to 1300 words)

1000 to (max) 1300 words

This research uses secondary data from the Living Standards Measurement Survey-Integrated Surveys on Agriculture (LSMS-ISA). The World Bank in partnership with National Statistical Offices implements the LSMS classes of surveys in 8 countries of sub-Saharan Africa (Mali, Ethiopia, Burkina-Faso, Niger, Nigeria, Uganda, Tanzania and Malawi). The primary objectives of the surveys are to provide a comprehensive outlook of the

connection between agriculture, socioeconomic position and non-farm income for the purposes of monitoring welfare changes overtime ([surveys.worldbank.org](https://surveys.worldbank.org)).

The paper uses the Malawi Integrated Household Panel Survey (IHPS) an LSMS dataset for the country. Our choice of the data and country follows from the topic of this paper that particularly intends to evaluate the effects of a subsidy program in Malawi on women's entrepreneurship and social integration. The IHSP is a longitudinal dataset of three waves covering the years 2010, 2013 and 2016 with a three-year gap between every wave. The survey traces households across the three waves; in many cases, this design will allow us to trace changes in conditions of the same women and men over time. We already have these data at present.

The Malawi commissioned the IHPS to measure trends in agricultural characteristics, socioeconomic attributes and poverty trends over time. It is a nationally representative survey stratified by region (northern, central and southern), as well as rural and urban locations. The survey uses the 2008 Malawi population and housing census as its sampling distribution frame. Its baseline (2010) wave tracked 3014 households that split over time to come up with a follow up total of 400 households in the last wave (2016 wave). The survey uses a two stage sampling procedure. From a cross-section of 772 enumeration areas (EA), the panel component of the 2010 Integrated Household Survey randomly sampled 204 enumeration areas. The 2013 wave maintained these EAs; however, the last wave of 2016 reduced the sample to 102 EAs containing 1990 households with 12, 266 individuals. At household level the IHPS has an attrition rate of 4 percent and at individual level, it has a 9 percent attrition rate. The survey's rural residents total to 81.3 percent. Because the FISP is granted to the household head, our variable of interest is defined at the household level. As noted above, households and their heads may change in non-random ways across time – even in response to receiving the subsidy. We will test the robustness of our results by limiting our sample to household heads who constantly hold that status; we will compare this to a full sample of household heads to assess the influence of this type of bias. However, the low rates of attrition indicate that our results are likely not to be sensitive to changes in household structure.

The survey has 4 sets of questionnaires that it uses to collect information from households. The first is the household questionnaire that collects data on household characteristics. This part of the survey contains information of the outcomes of this paper. It asks questions on business enterprises for a household. In the enterprises module the surveys asks about the owner and the manager of a particular business in a household. This study intends to study entrepreneurship using these two indicators as proxies. We can disaggregate the ownership and management by gender through

linking unique identifiers of the listed individual to a household roster that contains their gender. In this part of the dataset, we shall be able to identify the business that women manage and own, which tells us about the women entrepreneurship autonomy in the sample. Another part of the household questionnaire contains information on credit. This section provides information on whether a household obtained credit or not and the person who obtained that credit. The credit sections also surveys the source of credit; one of the sources is the village banks. The village is also an indicator of whether an individual is a member of a village savings group. It worthwhile noting that the survey only directly capture the village banks in the last wave of 2016 unlike the rest of the variables in this paper. Therefore, the analysis of the village bank shall use the cross-sectional component of the survey only.

The second questionnaire of the survey contains information on agriculture. This part of the survey collects information on land holding, access to agriculture extension services, wet and dry season crop production and details on coupon use during the rainy season. The coupon use sections contain information on the subsidy in question. It identifies the recipient households of the coupons and information on whether they actually redeemed the inputs after receiving the subsidy coupon. The FISP package for beneficiary household has 4 vouchers. The first two are for fertilizer-basal and top-dressing respectively (Chirwa & Howard, 2011). The other two are for maize and legume seed (Chinsinga & Poulton, 2014). Because the panel only covers a period after the implementation of the FISP, our identification strategy cannot rely on standard difference-in-difference analysis.

Redeemed	Year					
	2010		2013		2016	
Selected, 0 vouchers used	14	1.07%	31	1.99%	40	2.62%
Selected, 1 vouchers used	266	20.40%	139	8.93%	135	8.86%
Selected, 2 vouchers used	229	17.56%	188	12.08%	174	11.42%
Selected, 3 vouchers used	146	11.20%	115	7.39%	81	5.31%
Selected, 4 vouchers used	26	1.99%	130	8.35%	82	5.38%
Selected, 5 vouchers used	3	0.23%	2	0.13%	10	0.66%
Selected, 6 vouchers used	2	0.15%	5	0.32%	7	0.46%
Selected, 7 vouchers used	0	0.00%	0	0.00%	1	0.07%
Selected, 8 vouchers used	0	0.00%	1	0.06%	3	0.20%
Not selected	618	47.39%	945	60.73%	991	65.03%

Total	1304	100.00%	1556	100.00%	1524	100.00%
-------	------	---------	------	---------	------	---------

Table 1 shows the distribution of the coupon recipient households across the three waves. Using the balanced panel, we can make a number of distinctions. Close to half of the panel was selected for the subsidy in 2010, though this proportion reduces over time. There is also significant variation in the number of vouchers used. A large proportion of households does not use all four vouchers allocated to selected recipients. Existing evidence suggests that households sell the vouchers to others. In a few cases, we also capture households who receive more than the usual 4 vouchers. This reflects well-known cases, where some household members contend that they are from separate households when the coupons are distributed; as a result, some households receive more than their allocations. The strong variations in actual use of the coupons will allow us to distinguish between intention to treat and intensity of usage.

We also notice significant changes over time in the transition matrix in Table 2. While most households that were initially not selected stay in that state (74.84%), there are many selected households that subsequently do not receive the coupons (around 41-45%). This reflects a gradual reduction in the spread of subsidies. Our approach therefore lends itself to using fixed effects analysis – especially in understanding what effect the loss of a coupon has on households. Furthermore, we will check whether changes in household formation (especially who the head of the household is, and who the entrepreneur is) plays *within* this balanced panel of households.

	Redeemed										
Redeemed	0	1	2	3	4	5	6	7	8	Not Selected	To
0	0	22.73	11.36	6.82	11.36	0	2.27	0	0	45.45	1
1	4.06	19.29	16.24	9.39	6.09	0.25	0.76	0	0.25	43.65	1
2	3.38	10.63	21.98	10.14	11.35	0.24	0.48	0.24	0	41.55	1
3	0.78	6.61	22.96	10.51	12.06	0.39	0.78	0	0.39	45.53	1
4	3.87	6.45	17.42	7.74	18.71	2.58	1.29	0	0	41.94	1
5	0	20	0	0	60	0	0	0	0	20	1
6	0	0	42.86	0	42.86	0	0	0	14.29	0	1
7	0	0	100	0	0	0	0	0	0	0	1
Not selected	2.1	7.23	7.1	4.27	4.01	0.33	0.07	0	0.07	74.84	1
Total	2.5	9.57	12.79	6.65	7.25	0.43	0.39	0.04	0.14	60.24	1

Table 2 Transition Matrix of coupon recipients from balanced panel

The third questionnaire contains information on community characteristics. This section provides data on community access to basic services, economic activities, resource management and communal organization. We obtain community controls for our study from this module particularly on the number of savings and credit groupings found in the community, number of women groups and availability of a village development committee. The final questionnaire, which our study shall not use, contains information on fisheries.

Therefore, the Malawi Integrated Household Survey contains all information that is required to model the unintended consequences of the Malawi Farm Input Subsidy Program on improvements in women's entrepreneurship and financial inclusion. The usage of the FISP provides insights into how a national wide coverage of a policy can affect gender specific outcomes.

## SECTION IV – INFORMING POLICY

### 4.1. Government affiliation

- a) Name the government institution at which you are employed, and describe its general mandate

max 50 words

#### **Export Development Fund (Reserve Bank of Malawi)**

EDF is a Malawi Government Development Finance institute under the Reserve Bank with a mandate to expand investments in productive capacity and the export base for the country. Besides, the mandate of Reserve Bank of Malawi is to ensure price and financial stability in the country.

- b) What is/are your specific role(s)(as employees) in the institution

#### **Government official/officer #1**

**Name**

Catherine Manthalu

<b>Title/position</b>	Markets and Research Manager, Supervisor of Financial Cooperatives
<b>Role/responsibilities</b>	<ul style="list-style-type: none"> <li>● Assess targeted sectors of the economy that will result into providing innovative financing, specialized schemes, targeted interventions and publishing study reports for use in further research activities</li> <li>● Conduct impact assessment, monitoring and evaluation of EDF's interventions on the economy of Malawi</li> <li>● Conduct surveys/business interviews on the products and services offered by the Fund to ascertain their uptake by the targeted sectors</li> <li>● Conduct market intelligence on local and international trade patterns in order to inform potential investment by the Fund and its stakeholders.</li> <li>● Participate in research activities led by other strategic market players that directly affect EDF's mandate</li> </ul>

max 50 words

**Ministry of Finance, Economic Planning and Development, Monitoring and Evaluation Division**

The Ministry's mandate is to ensure sustainable economic growth and development through macroeconomic stability; coordinating national strategies; policy and manage public finances. The monitoring and Evaluation Division in particular monitors and evaluate the government's agenda whilst informing policy formulation.

<b>Government official/officer #2</b>	
<b>Name</b>	Joy Omar Karim
<b>Title/position</b>	Economist- Monitoring & Evaluation Officer
<b>Role/responsibilities</b>	<ul style="list-style-type: none"> <li>● Analyzing real sector policy, plans and programmes for consistency with the country's growth and development strategies.</li> <li>● Monitoring and evaluating government policies, strategies, programmes and project.</li> </ul>

	<ul style="list-style-type: none"> <li>● Developing M&amp;E tools and frameworks for tracking progress of implementation of strategies for Global and National Frameworks for MDAs, Districts, Programmes and Projects</li> <li>● Track project's output and outcome level results on the periodic basis in close coordination with Sectors on the implementation of National Strategy (MGDS) and SDGs.</li> <li>● Monitoring projects under the Public Sector Investment Programme.</li> <li>● Coordinating implementation, monitoring and evaluation of joint implemented projects.</li> <li>● Designing Programmes and Projects to be included in government interventions</li> <li>● Conducting Research on topical Issues</li> </ul>
--	---

#### 4.2. The policy context and needs

max 300 words

The results from this paper come at a critical time to the Malawi Government. Firstly, the Ministry of Finance is in the final year of implementing the strategy for financial inclusion adopted in 2016 and ending in 2020. Secondly, the Reserve Bank of Malawi is in the design stage of its first policy on financial inclusion targeting micro-credit cooperatives and village saving groups. This study can therefore give inputs into this process.

The Government of Malawi (GoM) has since 2005 implemented the FISP to increase food security. One could hypothesise that the FISP should benefit women the most since they produce 70% of the food that the country consumes (Government of Malawi, 2018). However, more often than not, women's access to land- an important source of credit collateral in Malawi, - is through the household head, who is typically a man (Fisher & Kandiwa, 2014).

In line with Ministry of Finance's mandate of efficient resource allocation for the government through the Medium Term Expenditure framework, the study shall therefore guide provision of funding to programs that yield the most results. This entails using the findings in the Budget processes such as Government Policy review; Project planning and design; Budget consultations; Budgeting modality which the Malawi

Government adopted known as the Program based Budgeting (PBB); implementation of the budget as well as monitoring the implemented budget.

Further, the Ministry is the final year of implementation for its 2016-2020 strategy for financial inclusion. The results from the study shall therefore make a unique contribution to the evaluation process of the strategy by outlining the unintended consequences of the FISP on women's financial inclusion. The study shall also contribute to understanding issues that were highlighted in the Making Access Possible report (MAP 2015), that highlighted areas that are affecting financial inclusion. These areas include high illiteracy rates; under-served regions especially the rural masses; and the need for different types (customised) of interventions/financial products that addresses the needs of SMEs and farmers. Our study will particularly link to understanding financial access in under-served rural areas, where FISP is primarily targeted.

This is handy since the rest of the evaluation strategies provide feedback on intended policy outcomes. In line with the mandate of the Reserve Bank of Malawi of being the financial regulator, the results from this study shall feed into the formulation of financial inclusion finance and micro finance policy that is currently at a design stage. This study will show the likely complementary effects from FISP, which the regulation can leverage on to provide a conducive policy environment to end gendered gaps in finance. We currently have contact with Madalitso Chamba, who is situated in the Department of Financial Sector Regulation at the Bank, and with whom we can communicate continually about the relevance of our findings.

### **Current policy options/scenarios & brief history**

max 400 words

Since 1980s, there have been several efforts by the Government of Malawi (GOM) to improve financial inclusion. In 1987, GOM established a department in the Ministry of Agriculture called Smallholder Agricultural Credit Administration (SACA) and Malawi Mudzi Fund (MMF) in 1988 (Nkuna, Lapukeni, Kaude & Kabango, 2018). The purpose of this institution was to provide seasonal loans to smallholder farmers. However, loan recoveries plummeted later in 1992/93 that led to the collapse of the scheme in 1993/94. Subsequently, SACA converted into the Malawi Rural Finance Company in 1994.

In 2007, GoM with support from the United Nation Development Project (UNDP) and United Nations Capital Development Fund (UNCDF) launched the Financial Inclusion in Malawi (FIMA) project with the objective of tackling poverty by ensuring that the poor and vulnerable populations, especially in the rural areas have access to financial services (loans, savings, payment services, money transfers, and or insurance). This project culminated in the development of the first National Strategy for Financial Inclusion (NSFI) that implemented in the period 2010-2015. The NSFI meant to focus specifically on improving the delivery of quality and diverse financial services to the excluded. However, the strategy did not fully implement due to absence of a coordinating institution. In 2010, government instituted the Financial Sector Development Strategy; the objective was to build a financial sector that supports financial services and stimulates sustainable economic growth (Nkuna *et al.*, 2018).

Thirdly, with the assistance of the World Bank, the Government of Malawi through the Reserve Bank implemented a Financial Sector Technical Assistance Project (FSTAP) (2011–2017) with the aim of increasing access to finance for the currently unbanked, but bankable, population of Malawi. Under this project, there have been a number of activities aimed at improving financial inclusion. These include establishment of a consumer protection unit within the Reserve Bank of Malawi, implementation of baseline surveys, production of financial literacy materials, introduction of financial literacy weeks and other financial education programs on the radio and print press.

### **Evidence usage or assimilation**

max 300 words

The outcomes of this research have potential to provide evidence and recommendations on several aspects of government policy; For instance, evidence produced from this research will inform the financial literacy and financial inclusion programs of the Reserve Bank of Malawi. Furthermore, it shall also inform the economic empowerment strategies of the Export Development Fund to increase the number of population investing in the country's productive capacity and export diversification strategies. This is because more people shall have access to credit and FISP implies more people having access to inputs thereby increasing the country's exports and generating foreign exchange.

In addition, the research will inform improvement of the agriculture policy specifically the FISP program. There have been arguments from different quarters on the

effectiveness of the program; however, empirical evidence supports its continued implementation. Therefore considering the importance of FISP to the national agricultural policy, the evidence from the research will help to point out the salient issues to consider when redesigning the program to incorporate gendered aspects.

The research will further shed light on the effectiveness as well as improvements that can be made to other general and gender specific programmes/projects that have the goal of empowering citizens financially. These programmes include programs that provide agriculture inputs to farmers in exchange for work such as Public Works Programme, General programmes that provide loans in terms of both cash and farm inputs such as the Malawi Rural Development Fund (MADEF), Youth Enterprise Development Fund (YEDEF), Shire Valley Transformation Programme and Agriculture and Infrastructure and Youth Development in Agribusiness. In addition, since the study seeks to shed light on whether general projects contribute to financial empowerment even for the vulnerable groups such as women, the results obtained will contribute towards designing and modification of gender sensitive programmes such as Gender Women and Empowerment.

The research will also help in the mainstreaming of gender policies not only in the agricultural sector, as it will point out general issues that are hindering women empowerment in the country such as discriminatory attitudes in finance.

Finally, the research will contribute towards designing, implementing and tracking progress of the Sustainable development goals that the country adopted in 2016. Specific goals of interest include Goal 1 of ending poverty in all its forms; Goal 2 of Zero hunger; Goal 5 of Gender Equality; Goal 8 Decent work and Economic growth; Goal 10 of reducing inequality and Goal 12 of responsible Consumption and production.

#### 4.3. Stakeholder mapping and dissemination

<b>Name of institution/organization #1</b>	Ministry of Agriculture, irrigation and Water Development
<b>List the key representatives or target research users (policy makers or influencers)</b>	
– Mr Hermes Mauwa- Deputy director of planning	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
– max 100 words	

The Ministry remains the custodian and principal architecture of the FISP program and plans the annual allocation of the coupons. The research shall therefore provide evidence on which the ministry shall use in FISP distribution to attain gendered effects that reduce inequality gaps between men and women. This shall increase the efficiency and effectiveness of the program in conjunction and consultation with the ministry of Gender. Therefore, the ministry will use the evidence to re-strategize on the FISP.

<b>Name of institution/organization #2</b>	Ministry of Gender
<b>List the key representatives or target research users (policy makers or influencers)</b>	
- Dr Mary Shawa- Principal Secretary for the Ministry of Gender	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
- max 100 words	
This ministry remains the primary custodian of policies and that lobbies support for programs aiming at enhancing gender equity. The results from this study shall open a new avenue that the ministry can extend its advocacy to on gendered agriculture policy. This is because FISP has never been considered within the ministry of genders main themes as it is a purely agriculture program. This shall happen from the realisation that the FISP has potential to improve or exacerbate gender inequalities. Evidence on this is what has been lacking and the study comes in to raise this sidelined but crucial area as it is the labour sector having the majority of women. Therefore, the Ministry will use the evidence to advocate for more gender mainstreaming programs.	

<b>Name of institution/organization #3</b>	The Ministry of Finance Economic Planning and Development
<b>List the key representatives or target research users (policy makers or influencers)</b>	
- Mr Kajomba – Chief Economist - Mr Enerst Falinya- Monitoring and Evaluation Specialist	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
- max 100 words	
The Ministry of Finance under its Economic Planning Department provides estimates for both recurrent and development budgets for the Malawi Government. The department makes decisions on programs to increase or reduce funding based on effectiveness through observed outputs from monitoring and evaluation. The results from this study shall therefore, provide tangible evidence on which the department shall use when making its resource allocation decision. For instance, the gendered outputs from the study shall inform the department's decision on the amount of	

funding to allocate to the Ministry of Agriculture with an additional motivation from direction of the FISP-women empowerment research results.

<b>Name of institution/organization #3</b>	The Reserve Bank of Malawi
<b>List the key representatives or target research users (policy makers or influencers)</b>	
<ul style="list-style-type: none"><li>- Dalitso Kabambe PhD – Governor of the Reserve Bank</li><li>- Madalitso Chamba – Manager for the Department of Financial Sector Regulation of Reserve Bank of Malawi</li></ul>	
<b>Describe briefly why and how you believe this institution could use the evidence</b>	
<p>– max 100 words</p> <p>The reserve Bank of Malawi is formulating a policy for regulating Village banks. The Reserve bank shall therefore benefit from the results of this study by understanding the impact of generic wide coverage programs on financial inclusion. The bank shall particularly benefit from an understanding of the potential complementarity of its regulation and positive outcomes from programs such as FISP. The bank shall therefore formulate the village bank encompassing policy to leverage on the target population regulation with evidence from the study. The bank shall therefore tailor its regulations to assist in reducing gender inequality in financing.</p>	

#### 4.4. Outline your engagement/dissemination strategy

– max 150 words

The first step to be taken will be a stakeholder mapping, after which a formal communication will be sent to the different stakeholders introducing them to the study, and how it will benefit the policy development. Stakeholders will be allowed to comment on the modalities of the study and the tool being used to make sure that the study is as effective as possible. This will ensure that the study will have continuous support throughout its progress, and will eventually be absorbed into practice.

Furthermore, our stakeholder's engagement strategy will focus on constant contact with these institutions through stakeholder consultations, workshops and seminars because that will add value for policy impact. Therefore, we shall commit to continuous engagements throughout the project cycle. In the process, the project shall also maintain constant contact, sharing and in-depth discussion of the established results. This engagement shall familiarise the policy makers with the initiatives before even outcomes are published. This necessitates smooth acceptability of the proposed policy conclusions derived by the study. Finally they will be Involved

during dissemination of results and will be asked to draw an action plan based on the findings. The final project result will then be summarised and disseminated among the media and academic journals for further analysis of the research. We will also write policy briefs to ensure that the results are communicated effectively to this audience. The briefs will be disseminated in Malawi, but also in other countries that use input subsidies. Stakeholder consultations shall be an on-going activity at all stages of the project.

## SECTION V – OTHER CONSIDERATIONS

### 5.1. Describe any ethical, social, gender or environmental issues or risks that should be noted in relation to your proposed research project.

*The project uses anonymized, secondary data published by the World Bank and shall not involve any of the described research concerns.*

### 5.2. References:

- Brown, T.T., Martinez-Gutierrez, M.S. & Navab, B. 2014. The impact of changes in county public health expenditures on general health in the population. *Health Economics, Policy and Law*. 9(3):251–269.
- Chinsinga, B. & Poulton, C. 2014. Beyond Technocratic Debates: The Significance and Transience of Political Incentives in the Malawi Farm Input Subsidy Programme (FISP). *Development Policy Review*. 32:s123–s150.
- Devkota, S. & Panda, B. 2016. Socioeconomic gradients in early childhood health: Evidence from Bangladesh and Nepal. *International Journal for Equity in Health*. 15(1).
- Diagne, A. & Zeller, M. 2001. *Access to credit and its impact on welfare in Malawi*. Washington D.C.
- Dorward, A. & Chirwa, E. 2011. The Malawi agricultural input subsidy program: 2005/06 to 2008/09. *International Journal of Agriculture Sustainability*. 9(1):232–247.
- Doss, C.R. 2001. Designing Agricultural Technology for African Women Farmers: Lessons from 25 Years of Experience. *World Development*. 29(12):2075–2092.
- Fletschner, D. 2008. Women's Access to credit: Does it matter for household Efficiency?

*American Journal of Agriculture Economics*. 669–683.

Fletschner, D. 2009. Rural Women ' s Access to Credit : Market Imperfections and Intrahousehold Dynamics. *World Development*. 37(3):618–631.

Fletschner, D. & Kenney, L. 2011. *Rural women ' s access to financial services*. (11-07).

Gladwin, C.H. 1992. Gendered impacts of fertilizer subsidy removal programs in Malawi and Cameroon. *Agricultural Economics*. 7:141–153.

Government of Malawi. 2018. *National Agricultural Investment Plan*. Lilongwe, Malawi.

Hanning, A. & Jansen, S. 2010. *Financial Inclusion and Financial Stability: Current Policy Issues*. Tokyo.

Kalamba, R. 2013. Input subsidies and their effect on cropland allocation, agricultural productivity and child nutrition: Evidence from Malawi.

Karamba, R.W. & Winters, P.C. 2015. Gender and agricultural productivity: Implications of the Farm Input Subsidy Program in Malawi. *Agricultural Economics (United Kingdom)*. 46(3):357–374.

Kim, J.C. & Watts, C.H. 2005. Gaining a foothold : tackling poverty , gender inequality , and HIV in Africa. *BMJ*. 331:769–772.

Ksoll, C., Lilleør, H.B., Lønborg, J.H. & Rasmussen, O.D. 2016. Impact of Village Savings and Loan Associations: Evidence from a cluster randomized trial. *Journal of Development Economics*. 120:70–85.

Nkuna, O., Lapukeni, A.F., Kaude, P. & Kabango, G. 2018. The Role of Commercial Banks on Financial Inclusion in Malawi. *Open Journal of Business and Management*. 06(04):813–832.

Lewbel, A. 2012. Using heteroscedasticity to identify and estimate mismeasured and endogenous regressor models. *Journal of Business and Economic Statistics*. 30(1):67–80.

Lewbel, A. 2018. **Identification and estimation using heteroscedasticity without instruments: The binary endogenous regressor case**. *Economics Letters*. 165(April):10-12.

National Statistical Office (NSO). 2014. Malawi Labour Force Survey 2013. (April):26.

National Statistical Office (NSO). 2017. *The Intergrated Household Survey 2016-2017*. Zomba.

National Statistical Office (NSO). 2019. *2018 Malawi Population and Housing Census Main Report*. Zomba.

Ogunlela, Y.I. & Mukhtar, A.A. 2009. Gender Issues in Agriculture and Rural Development in Nigeria: The Role of Women. *Humanity & Social Sciences Journal*. 4(1):19–30.

Palacios-lopez, A., Christiaensen, L. & Kilic, T. 2017. How much of the labor in African agriculture is provided by women ? q. *Food Policy*. 67:52–63.

Quisumbing, A.R. & Pandolfelli, L. 2010. Promising Approaches to Address the Needs of Poor Female Farmers: Resources , Constraints , and Interventions. *World Development*. 38(4):581–592.

Ricker-Gilbert, J. 2014. Wage and employment effects of Malawi's fertilizer subsidy program. *Agricultural Economics (United Kingdom)*. 45(3):337–353.

Ricker-Gilbert, J., Jayne, T.S. & Chirwa, E. 2011. Subsidies and crowding out: A double-hurdle model of fertilizer demand in Malawi. *American Journal of Agricultural Economics*. 93(1):26–42.

Sanyang, S.E. & Huang, W. 2008. Micro-Financing : Enhancing the Role of Women ' s Group for Poverty Alleviation in Rural Gambia Graduate Institute of Agribusiness Management ,. *World Journal of Agricultural Sciences*. 4(6):665–673.

Siringi, E.M. 2011. Women ' s small and medium enterprises for poverty alleviation in Sub-Saharan Africa Lessons from Kenya. *Management Research Review*. 34(2):186–206.

World Bank. 2001. *World Development Report 2000/2001: Attacking Poverty*. New York: Oxford Press.

Zellera, M., Diagne, A. & Mataya, C. 1998. Market access by smallholder farmers in Malawi : implications for technology adoption , agricultural productivity and crop income. *Agricultural Economics*. 19:219–229.