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# The impacts of interventions for female economic empowerment at the community level on human development: a systematic review of the evidence in low- and middle-income countries

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## **2. Background**

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### ***1.1 The problem***

In many places of the world, women remain at a disadvantage to men. Women globally earn 24 per cent less than men for doing the same work and 75 per cent of women's work in developing countries is in the informal sector (World Economic Forum, 2015). Gender inequality in access to economic opportunities, a lack of voice and participation as well as limited opportunities to accumulate wealth could perpetuate vulnerability to poverty among women, limit human capital accumulation in the new generation and restrict economic growth.

With this view, the UN Millennium Development Goals (MDGs) and the Sustainable Development Goals (SDGs) have recognized that improving female economic empowerment is not only valuable in its own right but is also a key element to end poverty and boost economic prosperity (UN, 2000; UN, 2015). Based on this premise, international organizations, local governments, non-profit organizations and private companies have engaged in various initiatives that aim to decrease gender inequality and foster female empowerment. For instance, in 2016 the Bill and Melinda Gates Foundation contributed \$80 million US dollars to help accelerate the progress of women and girls around the world.

Empowerment in a broader sense is defined as the expansion of people's (both men and women) ability to make strategic choices in a context where this ability was previously denied to them (Kabeer, 2012). To the extent that freedom of choice depends on economic, social, political and psychological aspects, empowerment is a multidimensional concept. Yet, one aspect that is considered to be crucial in increasing the ability of individuals to control their lives and exert influence in society is economic empowerment – defined as increased access to - and control over - resources and economic lives.

Given the importance of economic freedom to promote development and growth, this systematic review focuses on interventions that aim at fostering female economic empowerment. There is a wide range of interventions that have been developed to foster female economic empowerment. A useful classification is provided by Malhotra and Schuler (2005) who distinguish three dimensions of economic empowerment; namely, at the household level, community and national level. Household economic empowerment is related to the control of household income. Therefore, this dimension considers interventions that foster gender equity in rights to own and inherit land. At the community level, it refers to access to employment, credit, representation in trade associations and access to markets. It considers for example initiatives that give in-kind grants to women to establish an agricultural or micro-entrepreneurial activity, initiatives that give women access to labour markets by providing child or care for the elderly, or by opening short-term employment possibilities for women. At the national level, the focus is on female representation in high-paying jobs, the proportion of female CEOs and the representation of women's economic interests in macroeconomic policies and federal budgets. In this review, we focus on interventions that foster

female economic empowerment at the community level and consider their impact on human development.

Human development is defined as the process of enlarging people's freedoms and opportunities and improving their well-being. Traditionally, this term has been associated with increases in per-capita income or the growth rate. Yet, recognizing that the quality of life not only depends on a monetary dimension, a more recent approach is the capabilities approach that considers the ability that an individual has to freely choose the life they want to live (Nussbaum and Sen, 1993). This approach recognizes that there are certain functional capabilities that allow a decent quality of life (Nussbaum, 2000). Following this conceptualization, and an approach similar to the UN human development reports, we consider two dimensions of human development. First, we consider a dimension of wealth and take into account household income-per-capita, assets and access to basic services. Second, we consider three capabilities: i) the capability to live a life of normal length with good physical and mental health, protected from violence and enjoying recreational activities; ii) the capability to think, reason and engage in critical reflection and iii) the capability to control one's environment by participating in decisions in the household and in the community.

While previous evidence suggests that diverse interventions have been successful in reducing gender inequality and fostering female empowerment (Dekker, 2013; Buvinic, et. al., 2013), there is relatively little evidence of their impact on human development. The evidence on the effects of female economic empowerment on development is relatively scarce (Morrison et al., 2010; Duflo, 2012 and Bandiera and Natraj, 2013). We build on previous work by doing a systematic review of studies from developing countries that consider a variety of interventions that aim at providing women access to income generation alternatives and their impact on human development (i.e. support for agricultural and micro-entrepreneurial activities, access to labour market and formal financial markets).

## **1.2 The Intervention**

Programs that focus on female economic empowerment are very diverse both in terms of the intervention and the dimension of empowerment that they address (Buvinic, et. al., 2013). We adopt the conceptualization of Malhotra and Schuler (2005) and classify interventions according to the context in which they take place. Table 1 presents the indicators of female economic empowerment in each context and classifies the interventions according to whether they are covered or not in the present systematic review.

In this review, we only consider interventions that aim to increase female economic empowerment at the community level by providing alternatives for income generation. We consider interventions that:

1. Foster female productivity in agricultural activities. We focus on interventions that a) give women access to inputs and new technologies (i.e. improved seeds, fertilizer, farmer field schools),

b) support access to final markets (i.e. promote farmer associations, or provide information on prices) and c) provide subsidies to connect to existing infrastructure (i.e. electricity, irrigation).

2. Promote urban or rural micro-enterprises by a) providing subsidies for female entrepreneurs (i.e. soft credit, start-up grants, in-kind grants) and b) promote female business networks.

3. Promote financial access by a) giving access to formal financial markets (i.e. credit, savings and insurance) and b) support access to informal financial markets (i.e. promote micro-savings, microcredit or micro-insurance)

4. Promote female labour force participation. We consider interventions that a) provide job placements through internships, subsidies to employers and changes in the hiring process (i.e. affirmative action, anonymous hiring), b) provide childcare and care for the elderly, c) allow flexible working hours and working from home, d) provide economic incentives for women to work (i.e. tax deductions, subsidized employment) and e) foster equal rights for male and female employees.

In this review, we focus on interventions that attempt to directly reduce or eliminate the challenges that women face, which prevent them from participating in economic activities. Therefore, we do not consider interventions that could indirectly affect female labour force participation as conditional cash transfers (Leroy et al. 2009 and Yoong et al. 2012; Kabeer et al. 2012); education, vocational and financial literacy, entrepreneurship training programs—including field schools (Miller et al. 2014; Tripney and Hombrados, 2013, Woodruff and McKenzie, 2014; Chinen et al. 2016); diverse types of information campaigns (i.e. Aker, 2010); interventions as certification to firms for good practice in hiring and retaining female employees, consulting and mentorship programs for women (Feigenberg, et al., 2013; Field, et al., 2016) or interventions that aim to reduce domestic violence against women (Day, 2009).

Finally, in the analysis, we do not consider interventions that aim to empower women at the national and multinational level by increasing representation among CEOs or decision-making positions in government, through political reservations or within the judiciary system (Dahlerup, 2013; Schmitt, 2015). We also do not consider interventions that aim to give women access to resources in the household. We, therefore, exclude interventions that give men and women equal rights under the law (i.e. land rights and land titling, inheritance laws and law on divorce settlements: marital property, child support, custody and alimony).

### ***1.3 How the intervention might work***

Improving the economic position of women by providing them with access to income generating opportunities at the community level is likely to reduce poverty and generate greater human

development within the household (Morrison et al., 2010). Annex 1 presents the theory of change that provides a base for our analysis.

The main objective of female economic empowerment interventions is to increase the possibility for women to generate income. Income in the hand of women can affect human development by different channels. First, the most direct effect of female economic empowerment is that this will increase household's income allowing higher consumption which will be reflected in increased well-being. Second, it is expected economic opportunities for women will affect female's bargaining power within the household (Allendorf, 2007; Doss, 2013). This is expected to improve health outcomes of women (Beegle et al., 2001; Li and Wu, 2011), reduce intimate partner violence (Panda and Agarwal, 2005 and Rao, 1997) and have positive intergenerational effects. Increase female bargaining power has been shown to be associated with a larger share of budget used on food and on children's education and health (Quisumbing and Maluccio, 2003; Duflo and Udry, 2004; Doss, 2006; Robinson, 2012). Evidence also shows that income in the hands of women is associated with increased intergenerational welfare (Schultz, 2002; Rubalcava et al, 2009). Moreover, income in the hands of women has been shown to increase investment in girls, reducing future gender inequality (Duflo, 2003). The third indirect channel by which female economic empowerment could affect human development is related to fertility decisions. As the opportunity cost of time for women increases, it is expected that fertility rate drops and that income per capita, savings and asset accumulation increase (Schuler and Hashemi, 1994; Dupas and Robinson, 2009).

Interventions that provide financial access are expected to relax credit constraints that households face to borrow capital for their enterprises. This would be reflected in more investments in enterprises, adoption of new technologies and in higher productivity (Morrison et al., 2010). On the other hand, access to credit is expected to reduce the negative effect of unanticipated shocks reducing households' vulnerability to poverty. Interventions that foster saving groups are also expected to lead to an increase in asset accumulation and have a positive impact on children's well-being (Pitt et al., 2003, Cheston, 2006, Dupas and Robinson, 2013).

While female economic empowerment could lead to a decrease in poverty and higher human development, it is not clear if this is the case. There are many contextual factors that may limit the possibility of an impact on human development. Even if women have access to resources this does not necessarily guarantee their control over their use. Social barriers might prevent women from controlling these resources. For example, social norms on the acceptable role of women in society might limit the mobility of women and the possibilities to participate in economic activities. Moreover, low initial bargaining power within the household might imply that men control the resources generated by women. For instance, Goldstein and Udry (2008) show that males with higher status in Ghana were able to exploit this to their advantage using fallowing land. On the other hand, the systematic review by Vasseen et al. (2012) on the impacts of microfinance on a woman's control over spending, shows that the effect is relatively low and not significant, which is partly attributed to the demand of the social network including the husband.

Assuming that it is possible to enforce a woman's control over resources so that they make investment decisions, it is not clear if they would engage in more productive activities than men.

Women might specialize in less profitable crops, such as food crops, foregoing the income generating opportunities stemming from cash crops (Croppenstedt et al. 2013). Alternatively, they could specialize in less productive enterprises that give them more flexibility to combine household responsibilities and working hours (Amin, 2010). Second, women might invest less in high-yield but riskier technologies. Udry (1996) shows that men are more likely to use agricultural inputs than women, which translates to differences in productivity. Similarly, experimental evidence shows that micro-loans directed at women were not associated with larger effects than those given to men (Karlan and Zinman, 2011). Different studies show that the return of in-kind grants is larger for male than female owned business (De Mel, et al., 2008 and Fafchamps et. al, 2011). Therefore, interventions that support female business have been criticized in that they enable less successful enterprises to survive longer (Woodruff and McKenzie, 2013). A critical aspect might be the lack of access to marketing opportunities.

Interventions that foster female labour force participation, through the provision of childcare or childcare subsidies, can also generate positive spill-over effects on children's nutrition and development (Ruel et al., 2006; Attanasio & Vera-Hernandez, 2004; Berlinski & Galiani, 2007). Another problem is that these interventions can increase employment, but at a lower salary (Todd, 2013) or generate negative spill-over effects on the jobs and wages of the nonbeneficiary population (Betcherman et al., 2004). A critical assumption of programs that rely on the promotion of female labour force participation is that they would not generate a negative effect on non-beneficiaries. Hence, it is important to try to capture general equilibrium effects. When available, we will extract information on the change in male employment that can be attributed to the intervention. Finally, the sustainability of these interventions is questioned as discrimination against women might continue to persist once the incentives have been removed (Groh et al 2012).

It is possible that female economic empowerment increases tensions within the household and the community. For example, women could be subject to the triple burden of work as they need to contribute income to the household and still be responsible for housework and childcare. This can lead to more stress and conflict within the household. (Ahmed 2005; Ahmed & Chowdhury 2001). As women gain access to income-generating alternatives, they may reduce their time with their children, resulting in worse performance of their children at school and hence an increased likelihood of their children dropping out of school, involvement in gangs or switching/transferring responsibilities of housework to younger daughters (Ruhm, 2008). As working mothers have less time available, they could switch to processed foods of high caloric value leading to nutrition problems (Cawley and Liu, 2012).

Increased access to labour market opportunities could also lead to an increase in domestic violence (Heath, 2014), though this correlation might disappear once endogeneity is controlled for (Lenze and Klasen, 2016). Participation in economic activities outside of the home could also make women more vulnerable to crime or could expose women to environmental hazards at work (Amaral et al. 2015).

In summary, the interventions for female economic empowerment that we consider in this review are expected to affect human development by the following three main channels. First, these interventions increase the opportunities for women to have economic independence by enabling

them to generate their own income. Second, they generate a direct income effect in the form of higher household income. Third, they reduce the vulnerability of the households by reducing the variability of their income, either by the provision of insurance or by decreasing the covariance of a household's income.

However, various factors may prevent these effects from occurring. While it is difficult to capture these factors, we can use the proxies: region of analysis, religious beliefs and a measure of female participation in a particular sector before the intervention. To capture the effect of female control over resources, we use as an indicator for female bargaining power. Yet, this factor is considered in the analysis only if we have measures of human development.

A second factor that might restrict the success of the support programs for agriculture and entrepreneurship is financial access. Therefore, one needs to consider the financial situation of the beneficiaries before the program began, distance to financial institutions and the perceived financial access.

A third condition for the program to be successful is that the support programs lead to productive investments with good market access under reasonably good economic conditions. Hence, in the case of agricultural support programs, we need to consider if the beneficiaries invested in food or cash crops. Second, if they invested additional resources (i.e. inputs). Third, we need to consider how adverse effects might have affected the program (i.e. weather shocks, price shocks etc.) and lastly, consider if they work in a cooperative group or not because it may facilitate market access.

Finally, programs could have a positive effect reducing a household's vulnerability to poverty by providing more stable income. One channel by which this might occur is by decreasing the impact of negative shocks and the degree of covariance of a household's income. To the extent that this information is available, we would include it in the analysis. An intervention that is expected to last only a couple of months is expected to generate lower effects than long-term interventions. Therefore, we would need to consider the effect of the expected duration of the program in addition to the duration of exposure to an intervention.

#### ***1.4 Why it is important to do the review***

Our motivation to undertake a systematic review is to enhance academic knowledge and provide useful insight for policy makers both at the country and international level. Many studies address the question of what works to promote female empowerment as well as female economic empowerment. For example, Brody et al. (2013) consider the impact of self-help groups; Woodruff and McKenzie (2013) business training programs; Cho and Honorati (2014) entrepreneurship programs; Bandiera et al. (2013) capital, training or a combination of both; Mehra et al (2013) financial services; Rodgers and Menon (2013) land rights; Doss et al (2013) and Knowles (2013) agricultural productivity; Todd (2013) employability and quality of work; Katz (2013) young employment; and Vaessan et al (2014) reviews the effects of microcredit. In our review, we pursue an additional step and assess which interventions of female empowerment have an impact on human development.

Previous studies have addressed the relation between gender equity and development (Duflo, 2012; Morrisson et. al, 2010) However, no study has used a compact measure of outcomes such as a human development indicator. In our analysis, we consider an aggregated measure of human development that has four dimensions: household income and assets, health outcomes, educational outcomes and attitudes towards gender equity. Our measure of outcome considers the aggregated effect at the household level.

Furthermore, we contribute to this line of research by focusing on Randomized Control Trials-RCTs and quasi-experiments that use relevant econometrics to explain the causal impact of an intervention. We pursue the use of a robust methodological approach which other reviews are unable to provide (with a few exceptions such as Brody et al., 2013; and Rodgers and Menon, 2013). For the search of interventions in developing countries, we follow a specific time frame and include studies that have been published between 1990 and 2017. In addition, the risk of selection bias is addressed by including different languages (English, French, German, Spanish), working papers as well as reports from particular programs in our search.

Our focus is to provide feasible policy relevant conclusions of the evaluated interventions. Female empowerment and gender equality is not only an important aim of the UNDP to achieve the Millennium Development goals (UNDP, 2014), but it has also been on the policy agenda of developing nations. Large scale programs, such as the Mahila Samakhiya in India, Business Development Schemes in Kenya, Uganda and Tanzania, are examples of the steps undertaken by various governments to improve female empowerment and development.

Through our review, we attempt to compare the relative impact of interventions across different interventions, studies and contexts. Depending on data availability, we will include information on the cost of an intervention, which could provide a base for comparison on the cost-effectiveness of the different interventions. In the absence of data, we will favour simple interventions that can be easily implemented, taken to scale and sustained even after the implementer has left. We build on the works of Buvinic et al. (2013): “Roadmap for Promoting Women’s Economic Empowerment” and Dekker (2013): “Promoting gender equity and female empowerment.” While these studies consider the effectiveness of interventions on female economic empowerment (measured as increased productivity, wages, income and assets on the hand of women), in this review we consider the impact of these interventions on a very different of dimensions related to economic development.

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### **3. Objectives**

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Our research objective is to provide a systematic review of the impact of the most common interventions used to promote female economic empowerment on human development indicators in low- and middle-income countries. We focus on interventions that give women access to income generating opportunities in the following aspects of human development: agriculture, the support for female entrepreneurship activities, and the promotion of female labour force participation and the ease of financial access.

We address the following questions:

Q1. What is the effect of interventions at the community level that aim to promote female economic empowerment on a household's human development in terms of income, health, education and attitudes?

Q2. What are the pathways through which these interventions affect these dimensions of human development? Is this due to changes in female bargaining power, a change in fertility decisions, changes in expenditure, and a change in the investment in girls?

Q3. How are institutional environments, such as social barriers to women in a society, low initial levels of female bargaining power, lack of productive alternatives, religion, ethnicity, social networks, social norms and culture, associated with the effectiveness of the different interventions?

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## **4. Methodology**

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### ***3.1 Criteria for Including and Excluding Studies***

Following Petticrew and Roberts (2006), we use the PICO model (Population, Intervention, Comparison and Outcome model) to define the inclusion and exclusion criteria.

#### ***3.1.1 Types of Study Designs***

We only consider quantitative studies that aim to evaluate the causal effect of an intervention on the outcome. In particular, we focus on studies that use either experimental or quasi-experimental approaches of impact evaluation. We incorporate quasi-randomized approaches because studies that claim to use randomized assignment of treatment may actually use a non-randomized method. Whether a study uses genuine randomization will be reflected in our risk of bias assessment. In the case of randomized or quasi-randomized controlled trials, the evaluation of the effect is undertaken by comparing the outcome with the control group and by using an appropriate methodology.

In the absence of randomization, the main challenge is that the treatment can be endogenous, i.e. it can be confounded with unobservable factors correlated with both the treatment and the outcome. There is large heterogeneity in the methods used to control for potential endogeneity. We restrict our analysis to methods that are in theory able to address unobservable confounding factors. These methods include regression discontinuity design (RDD), instrumental variable (IV), difference-in-differences (DID) and interrupted time series (ITS). Some of these methods may use estimators that are not comparable with RCTs – this can be assessed at the synthesis stage in the sensitivity analysis. We exclude studies that are unable to address the issue of unobservable confounders in evaluating the causal effect of the intervention.

We will also exclude studies that:

- Do not contain any of the interventions to promote female economic empowerment or do not contain any of the indicators of human development.
- Quantitative studies without any type of observable comparator (for example, time or control group) and credible methods of correcting for selection bias as outlined above.
- Qualitative studies that do not employ the defined methodologies listed above or that do not draw from direct observation or direct reports from program participants. Although some of the outcomes we are interested in can be better captured if qualitative data is considered in addition to quantitative data, analysing qualitative data is beyond the scope of this study. Yet the clear limitation is that we might be unable to capture the adverse effects of the interventions. Future work should focus on this point.
- We only include studies published in the period from 1990 to 2017. Studies that were not published within this time frame are excluded.

### ***3.1.2. Types of participants***

We include interventions where the participants are women and girls (irrespective of age) from low- and middle-income countries as defined by the World Bank categorization at the time the data was collected. Thus, we exclude studies of interventions in high-income countries. We also include studies where men participate and have the potential to promote female economic empowerment and where this effect can be identified.

### ***3.1.3. Types of interventions***

We focus on the following kinds of interventions, which aim to promote female economic empowerment at the community level:

- a. **Labour Force Participation:** Interventions that enhance women's labour market opportunities through programs such as subsidies, vouchers, childcare, care for the elderly, job information, internships and job placements, part-time work and job sharing.
- b. **Agriculture:** Interventions that provide support for income generating opportunities in agriculture, e.g., improved seeds, fertilizer, irrigation, support to self-help groups and farmer associations, subsidies to connect to existing infrastructure, formal financial access.

- c. **Entrepreneurship:** Support for micro-entrepreneurial activities of women e.g. in-kind capital, women's business networks, subsidies, access to formal financial markets.
- d. **Financial access:** Interventions for opening saving accounts, providing credit or insurance and promoting informal financial access through micro loans, micro-savings, micro-insurance and mobile banking.

Level of Intervention:

Programs that aim at addressing female economic empowerment at the community level are eligible. However, household level interventions, such as a change in land use rights and inheritance laws, are not eligible. Interventions that consider a broader base, such as increasing the share of women CEOs or representation of female interests in macroeconomic policies, are not eligible for inclusion.

#### **3.1.4. Comparisons**

We include clearly defined comparison groups, including a control group, which did not receive an intervention, waiting lists, business as usual, paired matching and before and after comparisons. We exclude studies that compare outcomes with an alternative intervention. Comparison observations can be measured contemporaneously among separate groups or non-contemporaneously among the same group over time.

#### **3.1.5 Types of outcome measures**

- a. Direct outcomes on human development indicators

We consider primary outcomes at the household level in four domains of human development: health, education, financial (income, assets) and attitudes towards gender equity. These outcomes are to be observed for the different interventions included in the analysis. Below you will find a list of the different domains captured in the analysis with some examples of the metrics used:

- Health domain (e.g. Anthropometrics of individuals living in the household, diseases/sickness reported after the intervention, dietary information, number of meals per day)
- Education domain (e.g. school enrolment and school attendance, years of schooling, level of education, degree of studies, number of years of experience in the work place)
- Wealth domain (e.g. financial assets, ownership of physical assets and land)

- Income generated by women (e.g. female wages, number of hours worked, type of occupation of the female, sector of occupation: formal or informal, type of productive investments: food vs. cash crops, manufacture, etc.)
- Household income using proxy variables (e.g. yields or productivity, use of innovative marketing strategies, use of registrations and accounting in enterprises, use of credit and savings accounts, investments, membership in associations)
- Attitudes towards gender equity (e.g. household decision-making index and attitudes towards gender equity)
- Studies that measure outcomes at the community level are not eligible. Moreover, we aggregate outcomes at the household level; hence we do not consider the individual outcome on children.

#### b. Secondary outcomes

Studies that consider intermediate outcomes (e.g. change in female bargaining power), but which do not consider the impact on human development indicators are excluded. The intermediate outcomes we consider are:

- Variability in income can be measured by the number of times in which a household did not have sufficient food and the number of unemployed household members.
- Female bargaining power (e.g. proportion of income contributed by the women in the household, access to family resources, decision power of women in consumption decision, control over income).
- Fertility rate (i.e. ideal number of children by women and men, use of family planning)
- Investment in girls (relative number of years of education of girls vs. boys, relative gender indicators of height for age, gender gaps in educational achievements by age)
- Household consumption (e.g. share of expenditure in education, health and food consumption). In addition, to the extent possible we capture the use of preventive healthcare measures such as vaccinations and the consumption of processed food.
- To capture the potential effects on the triple burden of work, we consider time use in different activities (e.g. work, housework, leisure, child rearing).

## **3.2. Search strategy**

### **3.2.1. Electronic searches**

The search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized in this review. In the first stage, studies will be screened for the text in the title and abstract and the keywords in the article description. We will search in the following databases:

- 3ie database of impact evaluations
- Campbell data base of impact evaluations
- Econlit
- SSRN
- EconPapers
- ScholarGoogle
- Proquest - IBSS, ASSIA, Social Sciences Database, Education Collection.
- Ebsco Discovery – Repec & World Bank E-library,
- WHO Global Health Library
- World bank e-library
- Research Gate.

The second phase will consist of backward and forward citations, where reference lists of included studies will be searched and reviewed for additional studies using Google Scholar. We will use citations from the following papers and systematic reviews:

- Alzúa, M. L., Cruces, G., & Ripani, L. (2013). Welfare programs and labor supply in developing countries: experimental evidence from Latin America. *Journal of Population Economics*, 26, 1255-1284.
- Bandiera, O., & Natraj, A. (2013). Does Gender Inequality Hinder Development and Economic Growth? Evidence and Policy Implications. *The World Bank Research Observer*, 28, 2-
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Lastly, in an effort to capture studies that are still unpublished, we will send emails to the leading authors in the field of gender and development requesting unpublished working papers. A record will be maintained describing the databases searched, the keywords used and search results from each search engine.

### **3.2.2. Other searches**

We will also do searches in key development economic journals including:

- Journal of Development Effectiveness
- Journal of Development Economics
- International Journal of Sustainable Development
- Indian Growth and Development Review
- Journal of International Development
- Economic Development and Cultural Change
- Feminist Economics and World Development
- Journal of Development Studies

Multilateral organizations working on development issues would also be consulted. Among these we will focus on:

- United Nations Development Fund for Women
- United Nations Development Programme
- United Nations Children's Fund
- African Development Bank
- Asian Development Bank
- United Kingdom's Department for International Development
- United States Agency for International Development
- World Bank
- International Fund for Agricultural Development
- Inter-American Development Bank
- International Labour Organization

### **3.2.3 Search Terms**

For searching the above databases, our team will decide on search terms for each section of the systematic review and try test-searches before finalizing key-words. An example of the search terms used in Econlit and ERIC are presented in appendix 2. This search will be modified to fit the search format for each database.

### **3.2.4 Search Query**

The following search terms are used to search the selected databases and were modified to fit the search format for each database. For an example see appendix 2.

### **3.3. Data Collection and Analysis**

#### **3.3.1. Selection of Studies**

We will follow the usual procedure of unbiased and systematic data collection and analysis. Identified studies will be entered in a Zotero database that includes the abstract and link to the paper. This database will be exported to JabRef. This will generate a master database that includes all papers, articles and reports. After automatic elimination of duplicates, we will create a database with the remaining studies for title and abstract screening. Title and Abstract screening will be carried out by one researcher. To avoid exclusion of any potentially relevant study, at this stage we shall include a study if there is confusion about its relevance.

Criteria for exclusion will be reported in this stage. We will include studies that:

- Consider the impact of a relevant intervention for female economic empowerment
- Use adequate methods to control for endogeneity and draw causal inference
- Refer to at least one of the relevant outcomes
- Refer to a middle-income or low-income country
- Rely on original empirical analysis on quantitative evidence

Studies that refer to the impact of female empowerment on diverse outcomes but that do not use original data would be classified as Priority 2 and excluded. However, these studies will be revised to identify additional relevant studies. Studies that use macro-economic evidence or focus on theoretical models alone will be classified and excluded from the revision.

The studies that are selected for full text screening will be stored in another database and distributed to two authors to determine eligibility. We will keep records of the reasons for excluding the study from the review. We will solve disagreements on inclusion via discussion or by a third independent reviewer.

#### **3.3.2. Data Extraction and Management**

The documents selected for data extraction will be randomly allocated to two team members who would work independently extracting information from each study. Both team members will use a pre-piloted data extraction form. Disagreements in coding will be resolved through discussion. If no agreement can be reached, a third independent member of the team will be present to resolve the disagreement. In appendix 3, we have included the data extraction form that we plan to use. This form was piloted with five studies to test for the consistency and the objectivity of the form. It includes basic information on the study, intervention type, information about the target groups and its demographics, information on sample sizes, outcome variables, detailed information on

treatment and comparison groups, relevant statistics, information on the size of the effects and moderator variables.

We will collect information on moderators or institutional factors that take into consideration the heterogeneous effects of the interventions for different subgroups. As moderator variables we consider:

- Social barriers to female empowerment. This is captured by the geographical location of the program (country, urban/rural area), religion (other stated identities), and perceptions of the role of women in society from social value surveys (before the intervention).
- Male control over resources is captured by questions related to female bargaining power before the intervention was implemented and, if available, the rate of domestic violence before the program was implemented. Ideally, we would like to consider heterogeneous effects according to male control over resources.
- Credit constraints are captured by the financial situation of the beneficiaries before the program began, distance to financial institutions, perceived financial access, use of formal and informal financial services before the intervention.
- The existence of productive investments and market access is captured by the type of productive investments (food vs. cash crops), membership in groups or associations and the use of modern technologies. For programs in urban areas, we will extract information on the type of work generated (i.e. formal/informal, skill/unskilled, temporary/permanent, health risks).
- Negative shocks. To capture the effect of adverse shocks we will use information on self-reported shocks (i.e. weather shocks, price shocks, etc.) and support from an individual's social network (i.e. receive help/offers help to family and friends).
- We would also consider heterogeneous effects by the wealth level of the household. To do this we want to use information prior to the program on levels of schooling, income group or poverty level.

### **3.3.3. Assessment of risk of bias in included studies**

Two independent authors will assess the quantitative study rigor of eligible studies using a published list of criteria, developed by 3ie, to assess the risk of bias in social experiments and quasi-experiments (Hombrados and Waddington 2012). In appendix 4, we have included a form for assessing the risk of bias. Here we try to make sure that the studies have been conducted in a high-quality manner and that reporting of all details and statistics, as well as any shortcomings, are included in the paper.

The critical appraisal tool will assess the likely risk of the following biases:

- *Confounding*. Was the identification method free from any sources of bias due to confounding or were sources of bias adequately corrected for with an appropriate method of

analysis? Separate evaluation questions would be used for each of the identification methods (Randomization, Regression Discontinuity Design, Instrumental Variable, and Difference in Difference, Propensity Score matching, and before and after comparison).

- *Sample selection bias.* Is there a differential selection of participants in the study groups at the baseline (censored data) or follow-up (attrition)?
- *Spill-overs, cross-overs and contamination.* Was the study adequately protected against spill-overs, cross-overs and contamination?
- *Outcome reporting.* Was the study free from selective outcome reporting?
- *Analysis reporting.* Was the study free from selective analysis reporting?
- *Performance bias.* Was the process of being observed free from motivation bias?
- *Other risks of bias.* Is the study free from other sources of bias?

We will judge whether a study is subject to a high/medium/low risk of bias for each of these bias categories using the following decision rules:

We will follow Brody et al. (2015) and critically appraise the studies according to the likely risk of bias. We will assess the risk of bias among several domains using the decision rules in the IDCG risk of bias tool. For further details, please see section 7.4 in the Appendix. In addition, the following classifications will be made according to their respective definitions.

We will group question/answer combinations into low, high and medium risk of bias. For example, in question 1, an answer “Yes” will be coded L for a low risk of bias, an answer “No” will be coded as H for a high risk of bias and an answer “Unclear” will be coded as “M” for a medium risk of bias. Then we would give values to L, H, and M – 0, 1, and 0.5 respectively. For each study we will calculate the total value and the closer the total number is to 0, the lower the risk of bias is.

Examples of low, high and medium risk of bias are given below:

- *Low risk of bias:* appropriate and clearly described selection of participants, measurement of exposure and outcome variables, use of analytical methods to test for the initial differences between the treatment and control groups; low risks of spill-overs or contamination; low risk of outcome and analysis reporting bias.
- *Medium risk of bias:* inappropriate or unclear use of one of the following: selection of participants, measurement of exposure and outcome variables, use of design or analytical methods to control confounding, assessment of spill-over or contamination risks; medium risk of outcome and analysis reporting bias.
- *High risk of bias:* inappropriate use of two or more of the following: selection of participants, measurement of exposure and outcome variables, use of design or analytical methods to control confounding, assessment of spill-over or contamination risks, high risk of outcome or analysis reporting bias.

- *Unclear risk of bias*: unclear description of any of the following: selection of participants, measurements of exposure and outcome, study design or analytic methods to control for confounding, assessment of spill-over or contamination risks.

We will report the risk of assessment bias for each included study conducting sensitivity analyses by the overall risk of classification bias and, where sufficient studies are available, for each risk of domain bias.

### **3.3.4. Measures of treatment effect**

Here again we will follow standard procedures in systematic reviews (Higgins and Green (2011) and, where possible, we will calculate the standardized mean differences (SMDs) for continuous outcome variables and the odds ratios (ORs) for dichotomous outcome variables. Treatment effects will be calculated as the ratio of, or difference between, treatment and control observations in a consistent way, such that outcome measures are comparable across studies. SMDs and Odds Ratios will be converted to SMD using appropriated formulas. Where it is not possible to calculate SMDs, we will calculate odds ratios, which measure the ratio for the odds of success in the intervention group relative to the odds of success in the comparison group.

### **3.3.5. Methods for handling dependent effect sizes**

During the data extraction process, we will keep records of the paper, data sets and interventions used in the analysis. In case there are multiple papers or studies looking at the same intervention, we plan to include an aggregate effect per category (income, health, education, attitudes). Where studies report multiple effect sizes by sub-group, we will report data in separate analyses or compile estimates prior to meta-analysis by calculating a single sample-weighted average effect size for each study, using the appropriate formulas to recalculate variances and standard errors and making covariance assumptions as necessary (as per Borenstein et al., 2009 and the Cochrane Handbook Chapter 16). We will also differentiate papers from studies and interventions, so that the analysis accounts for multiple papers from the same underlying study/dataset and multiple studies from the same program/intervention.

We will attempt to do a meta-analysis for the studies with comparable variables. A single meta-analysis will include one estimate per study. The unit of analysis will be the study, but if there are multiple studies of the same program, then the unit of analysis will be the program itself. This is because the program level unit of analysis may be a more policy relevant metric. If we have sufficient effect estimates, then we intend to carry out robust meta-regression (using Stata command `robumeta`), rather than synthetic effects which are rather data limiting. If the effects are reported by groups, estimates will be pooled to calculate a single effect size for each study using the appropriate econometric methods. In regards to heterogeneous effects, we will standardize the unit of measure or make use of methods such as stratification, fixed effects and random effects models (Veroniki et al. (2015).

### **3.3.6. Unit of Analysis Issues**

We shall correct the standard errors of the effect sizes by taking into account any clustering in the study design. We shall follow Waddington et al. (2012) to incorporate these methods.

### **3.4. Statistical Procedures and Conventions**

This section describes the methodology that we plan to follow to address the three research questions mentioned earlier. Specifically, for the first question, we aim to conduct meta-analysis and meta-regression to evaluate the effect of female empowerment on human development. The second question is basically to analyze the intermediate outcomes to identify the channels through which the intervention may affect human development. For this mediator analysis related to the second question, we will conduct meta-analysis and meta-regressions wherever possible considering data availability on mediator variables. If sufficient data is not available, then for both the first and second questions we will complement the quantitative synthesis with a narrative analysis of the effects. Our third question will be addressed through moderator analysis, sub-group analysis, and meta-regressions when possible. The following sub-sections elaborate on these methods further.

#### **3.4.1. Quantitative Synthesis**

We will present the synthesis of the evidence from the included studies through narrative and statistical analysis of comparable effect sizes using meta-analysis. Meta-analysis is useful in synthesizing quantitative evidence from multiple studies as it considers the statistical power of the effect estimated in these various studies. We will first categorize the studies based on type, since we consider multiple interventions and outcomes in our systematic review. We can calculate the standardized mean differences, or odds ratios, which are appropriate for comparison across similar types of treatment effects.

However, even within the scope of randomized control trials, different studies may estimate various types of treatment effects, e.g. the average treatment effect, intent to treat effect, local average treatment effect etc. These different types of treatment effects may not be comparable as they are specific to the case and context. Therefore, we will attempt to use similar treatment effects or convert treatment effects into comparable measures (Duvendack et al 2012), or test for the differences across treatment effects using moderator analysis. In bivariate meta-analysis, we will pool across studies where:

- the effect sizes can be computed for comparison
- the outcome measures are sufficiently similar

These results will be presented using conventional tools, such as forest plots, and when possible, will be presented using inverse-variance weighted meta-analysis. We will use STATA for this

purpose. In the case where meta-analysis is not possible due to the reasons mentioned above, we shall use narrative synthesis including discussions on the sample size and magnitude of the effects.

### **3.4.1.1. Assessment of Heterogeneity**

When meta-analysis is possible, we shall test for heterogeneity across studies using the I-squared statistic that measures the percentage of variability across studies that is not due to sampling error but rather to differences in the study population, the intervention and its implementation. As suggested by Borenstein et al (2009), we will follow the rule of thumb that if the I-squared statistic has a threshold of 75 per cent, then there is high heterogeneity, and if it is 50 per cent then the extent of heterogeneity is low. We can also use the Q-statistic for statistical heterogeneity in the outcome variables, and the tau-squared statistic when random effects are used.

If heterogeneity is present, then we shall investigate what factors explain it by conducting moderator analysis, including sub-group meta-analysis and meta-regression if possible. Otherwise we shall discuss potential factors behind the heterogeneity through a narrative method. The moderator variables will include type of intervention (agricultural, financial access, self-entrepreneur, access to labour market and their sub-categories), geographical factors (location: rural/urban, distance to workplace, etc.), identity of the household (e.g. religion), baseline level of education, poverty level, household size, membership in group association, type of work (formal/informal, skilled/unskilled, temporary/permanent) etc.

### **3.4.1.2. Sensitivity Analysis**

To check if the results are sensitive to the quality of the data and approaches to analysis, we shall report sub-group analysis based on the study design, and would carry out a weighted ANOVA and meta-regression according to the overall risk of bias classification, and if possible, risk of bias status for each category. If these methods are not implementable, then we shall analyze studies separately based on their study design and use a narrative method to analyse the methodological factors that might moderate the size of the effect. Also this will involve describing studies based on design and the risk of the different categories of bias.

We shall use funnel plots, qualitative assessment and sub-group analysis comparing published versus unpublished studies to assess potential publication bias.

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## **5. Timeline**

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Title: 02/05/12

Protocol: 30/09/16

Draft Report: 30/09/17

Final Report: 01/12/17

Policy brief and short summary: 01/01/18

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## **6. Acknowledgements**

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## 7. Tables

**Table 1: Female Economic Empowerment**

Context	Indicators	Interventions covered	Other interventions not covered
<b>Household</b>	<p>Control over income</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ownership of assets and land.</li> <li><input type="checkbox"/> Access to and control over family resources.</li> <li><input type="checkbox"/> Relative contribution to family support.</li> <li><input type="checkbox"/></li> </ul>		<p>Conditional cash transfers.</p> <p>Intervention to reduce domestic violence.</p> <p>Information on land rights.</p> <p>Equal rights under the law (Land rights and land titling, inheritance laws and law on divorce settlements: marital property, child support, custody, and alimony).</p>
<b>Community</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Access to employment.</li> <li><input type="checkbox"/> Access to credit.</li> <li><input type="checkbox"/> Representation in trade associations.</li> <li><input type="checkbox"/> Access to markets.</li> </ul>	<ul style="list-style-type: none"> <li>- Access to income generating opportunities in agriculture (improved seeds, fertilizer, irrigation, support to self-help groups and farmer associations, subsidies to connect to existing electricity).</li> <li>- Promote financial access (Formal and informal financial services and networks).</li> <li>- Support for entrepreneurship activities (in-kind capital, women’s business networks, subsidies).</li> <li>- Promotion of female labor force participation (subsidies, vouchers, child care, care for the elderly, job information, internships and job placements, part-time work, job-sharing).</li> </ul>	<ul style="list-style-type: none"> <li>- Training programs on micro-entrepreneurial activities, financial literacy, farmer field schools</li> <li>- Certification of firms for good practice in hiring and retaining female employees. Consulting services</li> <li>Training in leadership</li> <li>- Provision of infrastructure (roads, electrification, mobile phones, water)</li> <li>Information on jobs, prices, or land rights</li> </ul>
<b>Broader Context</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Representation in high paying jobs, women CEO's,</li> <li><input type="checkbox"/> Representation of women economic interests in macroeconomic policies and federal budgets.</li> </ul>		<p>Female quotas in public office or decision positions in the private sector, political reservations for women</p>

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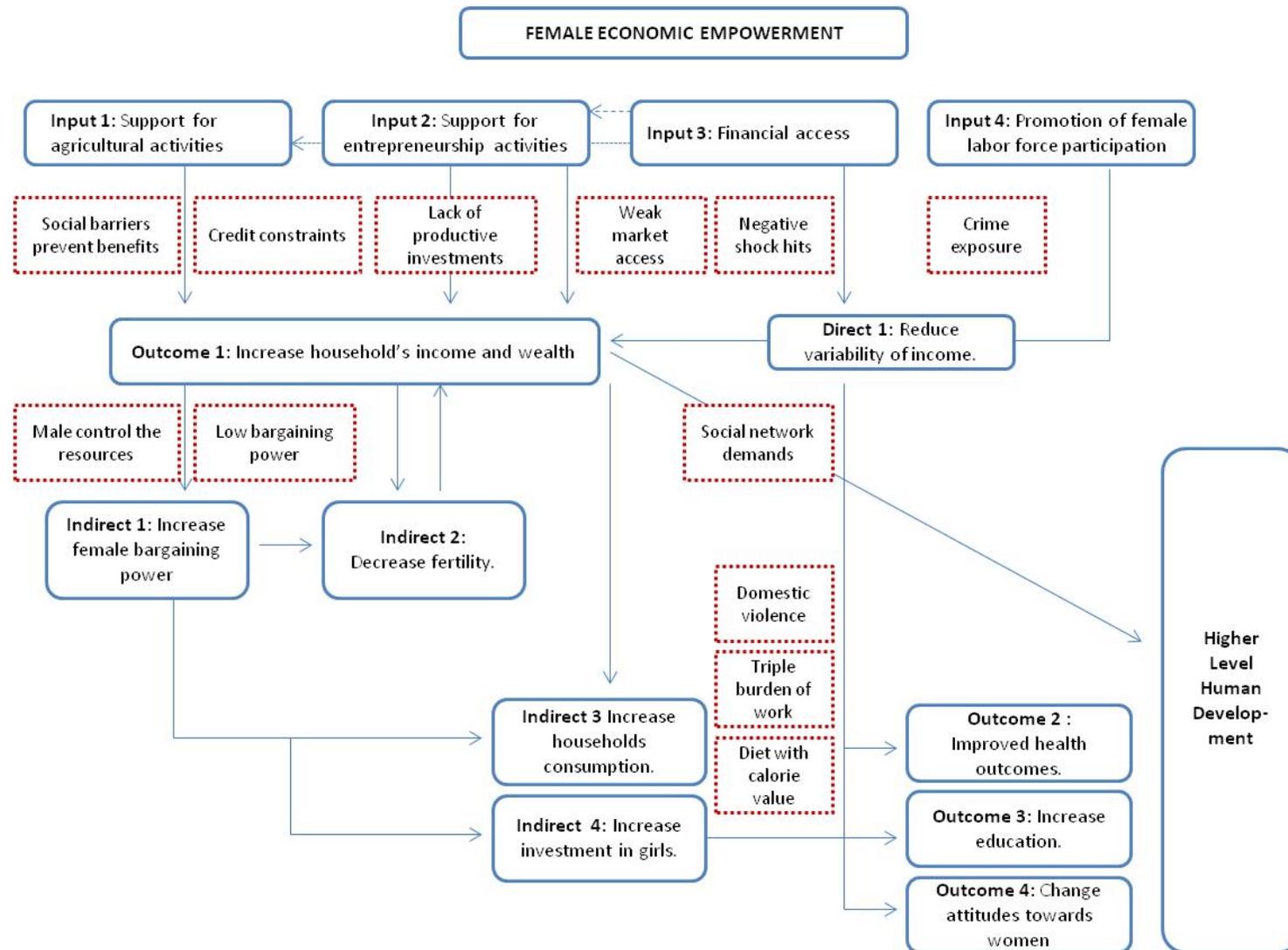
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## 9. Appendix 1: Theory of Change

### Appendix 1: Theory of Change



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## Appendix 2: Full Search Strategy

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### *Econlit:*

1 (woman\* or female\* or girl\*).ti,ab.

2 J16.cc.

Annotation: [J16 - Economics of Gender, Non-Labor Discrimination] (e.g)

3 1 or 2

4 (in-kind capital OR credit OR women's business networks OR subsidies OR formal financial access OR microfinance OR micro finance OR microcredit OR micro credit OR micro cash loan OR grant OR micro insurance OR mobile phones OR credit OR savings OR insurance OR entrepreneur OR micro-entrepreneur OR micro entrepreneur OR business OR role models OR mentors OR networks OR microenterprise OR micro enterprise OR loan OR lending OR financing).ti,ab.

5 (I25 or O15).cc.

Annotation: [I25 - Economics and Economic Development; O15 - Economic Development: Human Resources, Human Development, Income Distribution]

6 4 or 5

7 (labor force participation OR subsidies OR vouchers OR child care OR care for the elderly OR internships OR job placements OR demand driven jobs OR employment OR jobs OR work).ti,ab.

8 J13.cc.

Annotation: [J13 - Fertility, Family Planning, Child Care, Children, Youth]

9 7 or 8

10 (Africa or Asia or Caribbean or West Indies or South America or Latin America or Central America).ti,ab,ct,gr.

11 (Afghanistan or Albania or Algeria or Angola or Argentina or Armenia or Armenian or Azerbaijan or Bangladesh or Benin or Byelarus or Byelorussian or Belarus or Belorussian or Belorussia or Belize or Bhutan or Bolivia or Bosnia or Herzegovina or Hercegovina or Botswana or Brazil or Bulgaria or Burkina Faso or Burkina Fasso or Upper Volta or Burundi or Urundi or Cambodia or Khmer Republic or Kampuchea or Cameroon or Cameroons or Cameron or Camerons or Cape Verde or Central African Republic or Chad or China or Colombia or Comoros or Comoro Islands or Comores or Mayotte or Congo or Zaire or Costa Rica or Cote d'Ivoire or Ivory Coast or Cuba or Djibouti or French Somaliland or Dominica or Dominican Republic or East Timor or East Timur or Timor Leste or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gabonese Republic or Gambia or Gaza or Georgia Republic or Georgian Republic or Ghana or Grenada or Guatemala or Guinea or Guiana or Guyana or Haiti or Honduras or India or Maldives or Indonesia or Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kazakh or Kenya or Kiribati or Korea or Kosovo or Kyrgyzstan or Kirghizia or Kyrgyz Republic or Kirghiz or Kirgizstan or Lao PDR or Laos or Lebanon or Lesotho or Basutoland or Liberia or Libya or Macedonia or Madagascar or Malagasy Republic or Malaysia or Malaya or Malay or Sabah or Sarawak or Malawi or Mali or Marshall Islands or Mauritania or Mauritius or Agalega Islands or Mexico or Micronesia or Middle East or Moldova or Moldovia or Moldovan or Mongolia or Montenegro or Morocco or Ifni or Mozambique or Myanmar or Myanma or Burma or Namibia or Nepal or Netherlands Antilles or Nicaragua or Niger or Nigeria or Muscat or Pakistan or Palau or Palestine or Panama or Paraguay or Peru or Philippines or Philipines or Phillipines or Phillippines or Papua New Guinea or Romania or Rumania or Roumania or Rwanda or Ruanda or Saint Lucia or St Lucia or Saint Vincent or St Vincent or Grenadines or Samoa or Samoan Islands or Navigator Island or Navigator Islands or Sao Tome or Senegal or Serbia or Montenegro or Seychelles or Sierra Leone or Sri Lanka or Solomon Islands or Somalia or Sudan or Suriname or Surinam or Swaziland or South Africa or Syria or Tajikistan or Tadjhikistan or Tadjikistan or Tadjhik or Tanzania or Thailand or Togo or Togolese Republic or Tonga or Tunisia or Turkey or Turkmenistan or Turkmen or Uganda or Ukraine or Uzbekistan or Uzbek or Vanuatu or New Hebrides or Venezuela or Vietnam or Viet Nam or West Bank or Yemen or Zambia or Zimbabwe).ti,ab,ct,gr.

12 ((developing or less\* developed or under developed or underdeveloped or middle income or low\* income or underserved or under served or deprived or poor\*) adj (countr\* or nation? or population? or world or state\*)).ti,ab.

13 ((developing or less\* developed or under developed or underdeveloped or middle income or low\* income) adj (economy or economies)).ti,ab.

14 (low\* adj (gdp or gnp or gross domestic or gross national)).tw.

- 15 (low adj3 middle adj3 countr\*).tw.
- 16 (lmic or lmics or third world or lami countr\*).tw.
- 17 transitional countr\*.tw.
- 18 or/10-17
- 19 ("quasi experiment\*" or quasi-experiment\* or "random\* control\* trial\*" or "random\* trial\*" or RCT or matching or "propensity score" or PSM or "regression discontinuity design" or "discontinuous design" or RDD or "difference in difference\*" or difference-in-difference\* or "diff in diff" or DID or "case control" or "interrupted time series" or "random\* allocation\*" or "research synthesis" or "scoping review" or "rapid evidence assessment" or "systematic literature review" or "Systematic review" or "Meta-analy\*" or Metaanaly\* or "meta analy\*" or "Control\* evaluation" or "Control treatment" or (random\* adj3 allocat\*) or "instrumental variable\*" or heckman or IV or evaluation or assessment or ((quantitative or "comparison group\*" or counterfactual or "counter factual" or counter-factual or experiment\*) adj3 (design or study or analysis)) or QED).ti,ab,sh. (84488)
- 20 3 and 6 and 9 and 18 and 19
- 21 limit 20 to yr="1990 -Current"

---

## Appendix 3: Data Extraction Form

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We use two different forms. The first form: "Extraction form", extracts general information about the paper. The second form: "Outcomes", extracts information for each of the outcomes.

### Extraction Form

Welcome!

There are 45 questions in this survey

#### I. Basic

##### [[Key name

##### [[Study ID (id) \*

Only numbers may be entered in this field.

##### [[Who is entering the data? \*

Choose one of the following answers

Please choose **only one** of the following:

- Sonia
- Jorge
- Juan
- Jennifer
- Ana Maria
- Other

##### [[Date Coded (date)

Please enter a date:

#### II. Information Study

##### [[Funder

Please write your answer here:

##### [[The funder is?

Please choose **all** that apply:

- International organization
- Government
- NGO
- Charity
- Not clear
- Other:

##### [[In how many countries was the intervention done?

Only numbers may be entered in this field.

##### [[Country

**Only answer this question if the following conditions are met:**

Answer was greater than or equal to '1' for question '7 [TotalCountries]' (In how many countries was the intervention conducted?)

Please choose **only one** of the following:

- Afghanistan
- Albania
- Algeria

ETC...

Other

##### [[Country 2

**Only answer this question if the following conditions are met:**

Answer was greater than or equal to '2' for question '7 [TotalCountries]' (In how many countries was the intervention conducted?)

Choose one of the following answers (SAME COUNTRY LIST)

##### [[Which other countries?

**Only answer this question if the following conditions are met:**

Answer was greater than or equal to ' ' for question '7 [TotalCountries]' (In how many countries was the intervention conducted?)

Please write your answer here:

##### [[Region or city

Please write your answer here:

##### [[Start day of the Study

Please enter a date:

##### [[End date of the Study

Please enter a date:

##### [[How many months did the intervention last?

Only numbers may be entered in this field.

##### [[What is the original name of the intervention given by the author(s)?

##### [[Type of Intervention

Please choose **all** that apply:

- Productivity in agricultural activities
- Rural micro-enterprises
- Urban micro-enterprises
- Access to financial markets
- Female Labour force participation
- Other:

##### [[What did it do as an agricultural intervention?

**Only answer this question if the following conditions are met:**

Answer was for question '17 [TInterv]' (Type of Intervention)

Please choose **only one** of the following:

- Access to inputs
- Technology
- Access to final markets
- Subsidies to connect to existing infrastructure
- Networks, self-help groups, producer organizations
- Other

##### [[What did it do as a micro-enterprise intervention?

**Only answer this question if the following conditions are met:**

Answer was for question '17 [TInterv]' (Type of Intervention) *and* Answer was for question '17 [TInterv]' (Type of Intervention)

Please choose **all** that apply:

- Subsidies for female entrepreneurs
- Access to formal financial markets
- Women's business networks
- Other:

**[[What did it do for financial access?**

**Only answer this question if the following conditions are met:**

Answer was for question '17 [TInterv]' (Type of Intervention)

Please choose **all** that apply:

- Access to credit
- Foster savings
- Insurance
- Saving groups and self-help groups
- Other:

**[[What did it do in the labor market?**

**Only answer this question if the following conditions are met:**

Answer was for question '17 [TInterv]' (Type of Intervention)

Please choose **all** that apply:

- Internships
- Subsidies to employers
- Changes in hiring process
- Child care,
- Care for the elderly
- Flexible working hours, work from home
- Tax deductions, subsidized employment
- Foster equal rights for male and females
- Other:

**[[The intervention targeted:**

Please choose **all** that apply:

- Males
- Females
- Both
- Not Clear

**[[The targeted age groups was:**

Please choose **all** that apply:

- Children
- Teenagers
- Youth
- Adults
- Not clear

**[[Number of Intervention Components**

Please choose **only one** of the following:

- 1  2  3  4  5

**[[Type of component 1**

Please write your answer here:

**[[Type of component 2**

**Only answer this question if the following conditions are met:**

Answer was greater than or equal to '2' for question '24 [NumbComponents]' (Number of Intervention Components)

**[[Type of component 3**

**Only answer this question if the following conditions are met:**

Answer was greater than or equal to '3' for question '24 [NumbComponents]' (Number of Intervention Components)

**[[Type of component 4**

**Only answer this question if the following conditions are met:**

Answer was greater than or equal to '4' for question '24 [NumbComponents]' (Number of Intervention Components)

**[[Type of component 5**

**Only answer this question if the following conditions are met:**

Answer was '5' for question '24 [NumbComponents]' (Number of Intervention Components)  
Please write your answer here:

**III. Study Design**

**[[Study Design**

Please choose **only one** of the following:

- RCT
- Regression Discontinuity
- IV
- Diff in Diff
- Interrupted Time Series

Make a comment on your choice here:

**[[Nature of Comparison Group**

**Only answer this question if the following conditions are met:**

Answer was 'RCT' or 'Regression Discontinuity' or 'IV' or 'Diff in Diff' for question '30 [StudyDesign]' (Study Design)

**[[Sample Size**

Only numbers may be entered in this field.

**[[Type of Sampling**

Please choose **only one** of the following:

- Random
- Purposive
- Convenience
- Not clear
- Other

**[[Source of Information**

Please choose all that apply and provide a comment:

- Survey  Records  Experiment  
Other:

**[[Type of Information**

Please choose **all** that apply:

- Quantitative  Qualitative  Other:

**[[How many wealth related indicators were in the paper?**

Only numbers may be entered in this field.

**[[How many education related indicators were in the paper?**

Only numbers may be entered in this field.

**[[How many health-related indicators were in the paper?**

Only numbers may be entered in this field.

**[[How many attitudes related indicators are in this paper?**

Only numbers may be entered in this field.

**[[How many of "other" types of indicators did you find in the paper?**

Only numbers may be entered in this field.

**[[How many outcomes are there in total?**

Only numbers may be entered in this field.

**[[Does it include subgroup analysis?**

Please choose **only one** of the following:

Yes

No

Not Clear

**[[Which one is subgroup1?**

Please write your answer here:

**[[Which one is subgroup2?**

Please write your answer here:

**[[Which one is subgroup3?**

Please write your answer here:

Thank You!

Submit your survey.

Thank you for completing this survey.

---

## Appendix 4: Outcomes Form

---

### Outcomes Form

This form is used to extract information on each of the outcomes. In addition, it collects information on contextual factors.

#### Outcomes

There are 79 questions in this survey

#### I. Basic

##### [[Study ID (id) \*

Only numbers may be entered in this field.

##### [[Key name

Please write your answer here:

##### [[Who is entering the data? \*

Please choose **only one** of the following:

- Sonia
- Jorge
- Juan
- Jennifer
- Ana Maria
- Somebody else
- Other

##### [[Date Coded (date)

Please enter a date:

##### [[Does it refer to heterogeneous effects?

Please choose **only one** of the following:

- Yes
- No

#### II. Characteristics of the Outcome

##### [[This is Outcome number....

Only numbers may be entered in this field.

##### [[Measure / Indicator of Outcome

Please write your answer here:

##### [[Which type of outcome is this?

Please choose **only one** of the following:

- Direct outcomes on Human Development (Health, Education, Wealth, Attitudes)
- Secondary Outcomes (Income generated by woman, household income, variability of income)
- Indirect Outcomes (Bargaining power, fertility, investment in girls, expenditure)

##### [[Which kind of outcome is this?

**Only answer this question if the following conditions are met:**

Answer was 'Direct outcomes on Human Development (Health, Education, Wealth, Attitudes)' for question '8 [TypeOutcome]' (Which type of outcome is this?)

Please choose **only one** of the following:

- Health
- Education
- Wealth
- Attitudes
- Other

##### [[Select the education related indicator

**Only answer this question if the following conditions are met:**

Answer was 'Education' for question '9 [OutcomeHD]' (Which kind of outcome is this?)

Please choose **only one** of the following:

- School Enrollment
- School attendance
- Literacy
- Primary education completed
- Number of years of experience at the work place
- Financial literacy
- Other

##### [[Write the indicator that you found in the paper

**Only answer this question if the following conditions are met:**

Answer was 'Other' for question '9 [OutcomeHD]' (Which kind of outcome is this?)

Please write your answer here:

##### [[Select the attitudes related indicator

**Only answer this question if the following conditions are met:**

Answer was 'Attitudes' for question '9 [OutcomeHD]' (Which kind of outcome is this?)

Please choose **only one** of the following:

- Household decision making index
- Attitudes towards woman
- Representation in trade associations
- Time spent in domestic chores
- Right to complain
- Who should inherit (children, son or daughter)
- Decision should be made by men only
- Other

##### [[Select the type of health related indicator

**Only answer this question if the following conditions are met:**

Answer was 'Health' for question '9 [OutcomeHD]' (Which kind of outcome is this?)

Please choose **only one** of the following:

- Day of sickness
- Health insurance
- Number of meals per day
- How often have missed one meal
- Immunization completed
- No immunization received
- Infant mortality
- Number of vaccines per child
- Height for age
- Age at first child
- Other

##### [[Select the wealth related indicator

**Only answer this question if the following conditions are met:**

Answer was 'Wealth' for question '9 [OutcomeHD]' (Which kind of outcome is this?)

Please choose **only one** of the following:

- Income per capita
- Savings
- Debts
- Capital accumulation
- Access to credit
- Other

**[ ]Which type of secondary outcome is this?**

**Only answer this question if the following conditions are met:**

Answer was 'Secondary Outcomes (Income generated by woman, household income, variability of income)' for question '8 [TypeOutcome]' (Which type of outcome is this?)

Please choose **only one** of the following:

- Income generation opportunities for woman
- Income in the household
- Variability of Income

**[ ]This variable refers to:**

**Only answer this question if the following conditions are met:**

Answer was 'Income generation opportunities for woman' for question '15 [OutcomeSecond]' (Which type of secondary outcome is this?)

Please choose **only one** of the following:

- Sector of employment (Agriculture, manufacture, services)
- Job security (Temporal, fix job)
- Type of employment (Formal, informal)
- Wages
- Type of productive investment (Food crops, cash crops)
- Use of modern technologies (registers, accounting, technological investments)
- Other

**[ ]Which one?**

**Only answer this question if the following conditions are met:**

Answer was 'Other' for question '16 [IncW]' (This variable refers to:)

Please write your answer here:

**[ ]Which type of outcome is this?**

**Only answer this question if the following conditions are met:**

Answer was 'Income in the household' for question '15 [OutcomeSecond]' (Which type of secondary outcome is this?)

Please choose **only one** of the following:

- Yields
- Productivity
- Membership in associations
- Credit access
- Saving accounts
- Use registrars and accounting
- Other

**[ ]Which one?**

**Only answer this question if the following conditions are met:**

Answer was 'Other' for question '18 [IncH]' (Which type of outcome is this?)

Please write your answer here:

**[ ]Which type of outcome is this?**

**Only answer this question if the following conditions are met:**

Answer was 'Variability of Income' for question '15 [OutcomeSecond]' (Which type of secondary outcome is this?)

Please choose **only one** of the following:

- Food security
- Employment/ Unemployment rate
- Support from social networks
- Help provided to social network
- Other

**[ ]Which one?**

**Only answer this question if the following conditions are met:**

Answer was 'Other' for question '20 [VarInc]' (Which type of outcome is this?)

Please write your answer here:

**[ ]Which type of indirect outcome is this?**

**Only answer this question if the following conditions are met:**

Answer was 'Indirect Outcomes (Bargaining power, fertility, investment in girls, expenditure)' for question '8 [TypeOutcome]' (Which type of outcome is this?)

Please choose **only one** of the following:

- Bargaining power
- Fertility
- Expenditure
- Investment in girls

**[ ]Which type of measure is this?**

**Only answer this question if the following conditions are met:**

Answer was 'Bargaining power' for question '22 [OutIndirect]' (Which type of indirect outcome is this?)

Please choose **only one** of the following:

- Proportion of income contributed by the women in household
- Access to family resources,
- Control over consumption decisions
- Control over income
- Decision family planning
- Decision households education
- Other

**[ ]Which one?**

**Only answer this question if the following conditions are met:**

Answer was 'Other' for question '23 [Bargaining]' (Which type of measure is this?)

Please write your answer here:

**[ ]Which type of measure is this?**

**Only answer this question if the following conditions are met:**

Answer was 'Fertility' for question '22 [OutIndirect]' (Which type of indirect outcome is this?)

Please choose **only one** of the following:

- Deal number of children by women
- Deal number of children by men,
- Use of family planning
- Other

**[ ]Which one?**

**Only answer this question if the following conditions are met:**

Answer was 'Other' for question '25 [Fertility]' (Which type of measure is this?)  
Please write your answer here:

**[[Which type of measure is this?  
Only answer this question if the following conditions are met:**

Answer was 'Investment in girls' for question '22 [OutIndirect]' (Which type of indirect outcome is this?)  
Please choose **only one** of the following:

- Gaps in education girls vs. boys
- Gaps health indicators
- Gaps in investment in girls
- Gaps in time use in housework
- Other

**[[Which one?  
Only answer this question if the following conditions are met:**

Answer was 'Other' for question '27 [InvGirl]' (Which type of measure is this?)  
Please write your answer here:

**[[Which type of measure is this?  
Only answer this question if the following conditions are met:**

Answer was 'Expenditure' for question '22 [OutIndirect]' (Which type of indirect outcome is this?)  
Please choose **only one** of the following:

- Share of expenditure in education
- Share of expenditure in health
- Share of expenditure in food consumption
- Preventive health and vaccinations
- Consumption of processed food
- Other

**[[Which one?  
Only answer this question if the following conditions are met:**

Answer was 'Other' for question '29 [Consumption]' (Which type of measure is this?)  
Please write your answer here:

### III. Effect

**[[Outcome: Direction of the Effect  
Please choose only one of the following:**

- Effect favors development / poverty reduction
- Effect favors comparison
- Effect favors neither
- Cannot tell

**[[Outcome: Were any differences in measurement of this outcome between the group participants and the comparison?**

Please choose **only one** of the following:

- Yes
- No
- Cannot tell

**[[Outcome: Effect is statistically significant?  
Please choose only one of the following:**

- Yes
- No
- Cannot tell

**[[Treatment sample size  
Only numbers may be entered in this field.**

**[[Control sample size  
Only numbers may be entered in this field.**

**[[Nature of the measures  
Choose one of the following answers**

Please choose **only one** of the following:

- Continuous
- Dichotomous
- Hand Calculated Data

**[[Treatment group mean  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Comparison group mean  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Are means reported above adjusted?  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Please choose **only one** of the following:

- Yes
- No

**[[Comparison group standard deviation  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Treatment group standard deviation  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Treatment group standard error  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Comparison group standard error  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[t-value from an independent t-test  
Only answer this question if the following conditions are met:**

Answer was 'Continuous' for question '36 [NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Treatment group number of participants who experienced a change**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Comparison group number of participants who experienced a change**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Treatment group proportion of participants who experienced a change**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Comparison group proportion of participants who experienced a change**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Are the proportions above adjusted for pretest variables?**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Please choose **only one** of the following:

- Yes  
 No

**[[Logged odd-ratio**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Standard error of logged odds-ratio**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Logged odds-ratio adjusted? (e.g., from a logistic regression analysis with other independent variables)**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Please choose **only one** of the following:

- Yes  
 No

**[[Chi.square with df=1 (2 by 2 contingency table)**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Please write your answer here:

**[[Correlation Coefficient**

**Only answer this question if the following conditions are met:**

Answer was 'Dichotomous' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Hand calculated d-type effect size**

**Only answer this question if the following conditions are met:**

Answer was 'Hand Calculated Data' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Hand calculated error of the d-type effect size**

**Only answer this question if the following conditions are met:**

Answer was 'Hand Calculated Data' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Hand calculated odds-ratio effect size**

**Only answer this question if the following conditions are met:**

Answer was 'Hand Calculated Data' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Hand calculated odds-ratio standard error**

**Only answer this question if the following conditions are met:**

Answer was 'Hand Calculated Data' for question '36  
[NatureMeas2]' (Nature of the measures)  
Only numbers may be entered in this field.

**[[Are there results coming from regressions?**

Please choose **only one** of the following:

- Yes  
 No

**[[Sample size**

**Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)  
Only numbers may be entered in this field.

**[[Econometric Model:**

**Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)  
Please choose **only one** of the following:

- OLS  
 GLS  
 2SLS  
 Logit  
 Probit  
 Maximum Likelihood  
 Tobit  
 Fixed Effects  
 Random Effects

- Regression discontinuity
- Diff-Diff
- Matching Propensity Score
- Other

**[[Effect (mean)**

**Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)

Only numbers may be entered in this field.

**[[Standard deviation effect  
Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)

Only numbers may be entered in this field.

**[[Controls**

**Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)

**Controls Beta StdErrB StdDevB t-statistic pvalueB**

V1	
V2	
V3	
V4	
V5	
V6	
V7	
V8	
V9	
V10	

**[[Standard deviation: Y**

**Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)

Only numbers may be entered in this field.

- Distance to financial institutions
- Located in urban area
- Perceived financial access
- Female bargaining power
- Proportion affected by domestic violence
- Single mother
- Other8
- Other9

**[[Degrees of freedom**

**Only answer this question if the following conditions are met:**

Answer was 'Yes' for question '59 [Regress2]' (Are there results coming from regressions?)

Only numbers may be entered in this field.

- Other10
- Other11
- Other12
- Other13
- Other14
- Other15
- Other16
- Other17
- Other18
- Other19

**Descriptive Statistics**

For the following variables please add descriptive statistics before the program was implemented.

**[[Please provide the socioeconomic characteristics of the group**

Comment only when you choose an answer.

Please choose all that apply and provide a comment:

- Number of years of Schooling
- Average Income per-capita
- Proportion of households below poverty line
- Proportion affected by a negative income shock (weather shock, price shocks, disease, etc.)
- Proportion that receive help from family and friends
- Proportion that give help to family and friends.
- Membership in groups or associations

**[[What does Other8 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other9 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other10 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)

**[[What does Other11 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other12 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other13 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other14 refer to?**

**Only answer this question if the following conditions are met:**

Please write your answer here:

Submit your survey.

Thank you for completing this survey.

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other15 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other16 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other18 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other19 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)  
Please write your answer here:

**[[What does Other17 refer to?**

**Only answer this question if the following conditions are met:**

Answer was for question '67 [SocEcon]' (Please provide the socioeconomic characteristics of the group)

---

## Appendix 4: Quality Assessment Form

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### Quality Assessment Form

Systematic Review. The impact of female empowerment on development

Welcome!

There are 46 questions in this survey

General Information

ID

Date \*

Please enter a date:

Study ID \*

Please write your answer here:

Reviewer \*

Please write your answer here:

Which type of design is used?

Choose one of the following answers

Please choose only one of the following:

Randomized Control Trial

Regression Discontinuity

Difference in Difference

Instrumental Variable

Interrupted Time Series

Propensity Score Matching

Other

Which other design was used?

Only answer this question if the following conditions are met:

Answer was 'Other' for question '4 [Design]' (Which type of design is used?)

Please write your answer here:

### I. Randomization

Ask questions below only for studies that apply to an RCT or experimental design.

a) Allocation to the treatment and control groups was done exogenously, at random and performed on all units at the start of the study.

Only answer this question if the following conditions are met:

Answer was 'Randomized Control Trial' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

b) Baseline characteristics of the study and control/comparisons are reported and overall similar based on t-test or ANOVA for equality of means across groups.

Only answer this question if the following conditions are met:

Answer was 'Randomized Control Trial' or 'Regression Discontinuity' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Does not apply

c) Authors control for external factors that might confound the impact of the program (rain, infrastructure,

community fixed effects, etc) through regression analysis or other techniques.

Only answer this question if the following conditions are met:

Answer was 'Randomized Control Trial' or 'Regression Discontinuity' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear

Score "Yes" if criteria a), b) and c) are all satisfied. Score "Unclear" if a) or b) not specified in the paper, or if c) scores "No" but the authors controlled for the relevant differences through regression analysis.

### II. Discontinuity Designs

Ask questions below only for studies that apply regression discontinuity designs

a) Is assignment based on a blinded continuous variable? Individuals cannot reasonably affect the assignment variable in response to knowledge of the participation rule?

Only answer this question if the following conditions are met:

Answer was 'Regression Discontinuity' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

b) Is the allocation of the program based on a pre-determined continuity on a continuous variable blinded to the beneficiaries? If not blinded, individuals cannot reasonably affect the assignment variable in response to knowledge of the participation rule?

Answer was 'Regression Discontinuity' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

c) Is the sample size sufficiently large to equate both groups on average? Is the sample size immediately at both sides of the cut-off point sufficiently large to equate groups on average?

Only answer this question if the following conditions are met:

Answer was 'Regression Discontinuity' or 'Difference in Difference' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

d) The mean of the covariates of the individuals immediately at both sides of the cut-off point (selected sample of participants and non-participants) are overall not statistically different based on t test or ANOVA for equality of means OR any differences in covariates are

controlled for.

Only answer this question if the following conditions are met:

Answer was 'Regression Discontinuity' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear

e) The interval for selecting the treatment and control group is reasonably small, or authors have weighted the matches on their distance to the cut-off point.

Only answer this question if the following conditions are met:

Answer was 'Regression Discontinuity' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear

Score "Yes" if criteria a), b), c), d) and e) are all satisfied  
Score "Unclear" if a) or b) is not specified in the paper or d) scores "No" but authors control for covariate differences across participants and control individuals.  
Score "No" otherwise.  
Score "No information" if data not available.

### III. Instrumental Variable Estimation

Ask questions below only for studies that apply instrumental variable estimation.

Quality of IV, two-steps endogenous switching regression approach

a) The instrumenting equation is significant at the level of  $F \geq 10$ ; if an F test is not reported, the author reports and assesses whether the R-squared (goodness of fit) of the participation equation is sufficient for appropriate identification

Only answer this question if the following conditions are met:

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Not applicable

Make a comment on your choice here:

b) Are the instruments individually significant ( $p \leq 0.05$ )? for Heckman models, the identifiers are reported and significant ( $p \leq 0.05$ )?

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

c) If at least two instruments are used, the study includes and reports an over-identifying test (e.g., the Sargan test, sometimes also called the Hansen test, or J-test for over-identifying restriction) does the test fails to reject the null hypothesis that the instruments are exogenous (Only 'score' yes if the  $p$  value  $\geq 0.05$  indicating the instruments are exogenous). Otherwise rate as unclear.

Only answer this question if the following conditions are met:

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

d) Does the study qualitatively assess the exogeneity of the instrument/identifier (both externality as well as why the variable should not enter by itself in the outcome equation)?

Only score 'yes' when the instrument is exogenously generated: e.g. natural experiment or random assignment of participants to the control and treatment groups.

Only answer this question if the following conditions are met:

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

e) The study includes relevant controls for confounding and none of the controls is likely affected by participation. Only answer this question if the following conditions are met:

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Does not apply

Score "Yes" if all the following are true: a), b), c), e)  
Score "Unclear" if d) scores "no" and c) scores "yes".  
Score "No" otherwise  
Score "No information" if data not available.

### IV. Difference in Difference

a) The authors control for a comprehensive set of time-variant characteristics.

Only answer this question if the following conditions are met:

Answer was 'Difference in Difference' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Does not apply

b) Does it assess the parallel trends assumption?

Only answer this question if the following conditions are met:

Answer was 'Difference in Difference' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Score "yes" if a) and b) and true:

Score "unclear" if a or b) unclear:

Score "No" otherwise.

Score "No information" if data not available.

### V. Quality of matching (PSM, covariate matching)

Ask questions below only for studies that apply matching

a) The study matched on baseline measure of the outcome variable.

Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable  
Make a comment on your choice here:

b) The study justifies the selection of variables included in matching, and matched on all relevant characteristics to explain a) participation and b) the outcome and thus there are not evident differences across groups in variables that explain outcomes.

Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable

c) The study matched on either (1) recalled baseline characteristics, (2) time-invariant characteristics or (3) end-line factors not affected by participation in the program.

Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable  
Make a comment on your choice here:

d) Does the study exclude observations outside of the common support or used propensity-weighted analysis?  
Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable  
Make a comment on your choice here:

e) The variables used to match are relevant (e.g. demographic and socio-economic factors) to explain a) participation and b) the outcome.  
Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable  
Make a comment on your choice here:

f) Except for Kernel matching, the means of the individual covariates are equal for both the treatment and the control group after matching based on t-test for equality of means or ANOVA (if Kernel matching please ignore)?

Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable  
Make a comment on your choice here:

Score "Yes" if a), b), and c) are all satisfied  
Score "unclear" if any of criteria e), f), are met or if score in c) is "unclear" or "No"  
Score "no" otherwise  
Score "No information" if data not available.

## VI. Before-after regression

a) The covariates distribution are balanced across groups?  
Only answer this question if the following conditions are met:

Answer was 'Interrupted Time Series' or 'Other' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
Yes No Unclear

b) The authors control for a comprehensive set of confounders that may be correlated with both participation and explanatory outcomes (e.g. demographic and socio-economic factors at the individual and community level) and thus, it is not evident that the existence of unobservable characteristics could be correlated with participation and affect the outcome.  
Only answer this question if the following conditions are met:

Answer was 'Interrupted Time Series' or 'Other' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
Yes No Unclear

c) The authors use proxies to control for the presence of unobservable confounders driving both participation and outcomes.  
Only answer this question if the following conditions are met:

Answer was 'Interrupted Time Series' or 'Other' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
Yes No Unclear

d) Participation does not have a causal impact in any of the controls.  
Only answer this question if the following conditions are met:

Answer was 'Other' or 'Interrupted Time Series' for question '4 [Design]' (Which type of design is used?)  
Choose one of the following answers  
Please choose only one of the following:  
Yes No Unclear Does not apply

Score "Yes" if a) b) c) and d) are satisfied  
Score "Unclear" if all the following are true:  
Score "No" otherwise  
Score "No information" if data not available.

## VI. Attrition

Does it report attrition (drop-out) rates?  
Choose one of the following answers  
Please choose only one of the following:  
yes no unclear not applicable

a) Is the attrition rate below 15% ?

Only answer this question if the following conditions are met:

Answer was 'yes' for question '30 [G3Q00001]' (Does it report attrition (drop-out) rates?) and Answer was

'Randomized Control Trial' for question '4 [Design]'  
(Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear

Make a comment on your choice here:

b) Is the attrition rate below 10%

Only answer this question if the following conditions are met:

Answer was 'yes' for question '30 [G3Q00001]' (Does it report attrition (drop-out) rates?) *and* Answer was NOT 'Randomized Control Trial' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear

c) Attrition is randomly distributed (no correlation with the determinants of the outcomes in the treatment and comparison groups and balance in key characteristics across the treatment and control groups)

Only answer this question if the following conditions are met:

Answer was 'yes' for question '30 [G3Q00001]' (Does it report attrition (drop-out) rates?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear

Make a comment on your choice here:

d) Differential attrition between the treatment and control groups is not expected (i.e. Due to censored data)

Only answer this question if the following conditions are met:

Answer was NOT 'Randomized Control Trial' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear

Score "Yes" if all are false a), b) and if is c) and d) true

Score "Unclear" if unclear

Score "No" if true: a), b)

Score "No information" if data not presented

## VII. Spillovers

a) The intervention is unlikely to spill-over to comparisons (e.g. participants and non-participants are geographically and/or socially separated from one another and general equilibrium effects are not likely)

Choose one of the following answers  
Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

b) Are comparisons isolated from other interventions which might affect changes in outcomes differently in the treatment and control groups including issues of survey effects?

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear  not applicable

Score "Yes" if a) and b) are satisfied.

Score "Unclear" if spill-overs and/or contamination are not addressed clearly.

Score "No" if a) and b) are not satisfied.

## VIII. Analysis and Reporting bias

(ask questions for all quantitative studies)

a) Does the evidence suggest reporting biases (e.g. results for all relevant outcomes in the methods section are reported in results)?

Choose one of the following answers  
Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

b) Do authors used "common" methods of estimation (i.e. credible analysis method to deal with attrition given the data available)?

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear  Does not apply

c) If the design is based on PSM:

Sensitivity analysis is used to re-estimate results using different matching methods (e.g. Kernel, etc.)?

Only answer this question if the following conditions are met:

Answer was 'Other' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear  Does not apply

d) *For matching with replacement, no single observation in the control group is matched with a large number of observations in the treatment group?*

Only answer this question if the following conditions are met:

Answer was 'Propensity Score Matching' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear

e) For IV (including Heckman) models:

The authors test and report the results of a Hausman test for exogeneity ( $p \leq 0.05$  is required to reject the null hypothesis of exogeneity);

Only answer this question if the following conditions are met:

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear

f) The coefficient of the selectivity correction term (Rho) is significantly different from zero ( $P < 0.05$ ).

Only answer this question if the following conditions are met:

Answer was 'Instrumental Variable' for question '4 [Design]' (Which type of design is used?)

Choose one of the following answers  
Please choose only one of the following:

Yes  No  Unclear  not applicable

g) The authors conduct appropriate specification tests (e.g. reporting results of multicollinearity test, testing

robustness of results to the inclusion of additional variables, etc).

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Does not apply (does not conduct multivariate regression analysis)

Score "Yes" if a), b), c), d), e), f), g) are satisfied

Score "No" if a), b), c), d), e), f), g) are false

Score "Unclear" if intended outcomes not specified in the paper.

### **IX. Performance Bias**

a) Outcome measurement is blinded. The authors argue convincingly that monitoring could have not affected the performance of the participants in the treatment and control groups. Are there any concerns of courtesy bias, social acceptability bias, political correctness bias, self-serving bias, self-importance bias, recall bias and biases in reporting of sensitive information from outcomes collected through self-reporting?

Choose one of the following answers

Please choose only one of the following:

yes  no  unclear  not applicable

Make a comment on your choice here:

b) The study is based on data collected in the context of a survey, and not associated with a particular intervention trial, or data are collected from administrative records or in the context of a retrospective (ex post) evaluation, and biases due to self-reporting or recall are not suspected.

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Does not apply (primary data)

Score "Yes" if either criterion a) or b) are satisfied:

Score "Unclear" if it is not clear whether the authors use an appropriate method to prevent Hawthorne and John Henry Effects.

Score "No" otherwise.

Score "No information" if data not available.

### **X. Other risks of bias**

a) No other potential threats to validity are present, (e.g. coherence of results, data on the baseline collected retrospectively, information is collected using an inappropriate survey instrument or a different survey instrument/at different time/after different follow up period in the control and in the treatment group)

Choose one of the following answers

Please choose only one of the following:

Yes  No  Unclear  Does not apply

Score "Yes" if a) is true.

Score "No" if a) is false

Score "Unclear" if there is not clear.

### **Thank you!**

Submit your survey.

Thank you for completing this survey.

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## 10. Review authors

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## 11. Roles and responsibilities

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- **Content:**

Prof. Ibanez will take the lead on the content that will focus on the impact of female economic empowerment on women and households. She is leader of the research group behavioural development economics at University of Göttingen. She has recently conducted research on the impact of affirmative action on female labour force participation and is currently conducting various projects investigating the effectiveness of interventions that aim at empowering women by giving them access to decision making. Prof. Ibanez will provide guidance on the conceptualization of the review question. Her research focuses on segregation of women in labour markets focusing on the role of culture and contextual factors.

- **Systematic review methods:**

Dr. Khan will work on the development of the search strategy for the paper. Dr. Minasyan and Dr. Sahoo will lead the development of statistical methods for the analysis of the data. They are knowledgeable in the development of poverty indicators and in the use of statistical methods of analysis. Their research work focuses on gender inequality in education and employment outcomes such as occupational segregation, labour force transition etc.

- **Statistical analysis:**

Statistical analysis will be carried jointly by Dr. Khan, Dr. Minasyan, Dr. Sahoo, and Pooja Balasubramanian. They have experience with data analysis and familiarity with meta-analysis. Mr. Waddington will serve as a statistical advisor. He is a biostatistician with substantial experience in systematic reviews, meta-analyses and generalized evidence synthesis methods.

- **Information retrieval:**

Dr. Khan will develop the information retrieval strategy to search papers and will coordinate this activity with research assistants. She will be responsible to contact institutions and coordinate the selection of references from selected papers.

Prof. Ibanez will develop the information retrieval forms for title screening, full text screening, data extraction and quality assessment. Dr. Sahoo will be responsible to monitor the progress in the different stages of the process and distribute papers for revision in the different stages of the process. Dr. Miyasan will be responsible to coordinate the research assistants working on data extraction. She will keep an overview on the advances on data entry and distribute papers for data extraction. All team members will contribute to the different stages of the systematic review process. All of them have experience in literature review and good understanding of statistical methods. They have access to University of Göttingen's library.

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## **12. Sources of support**

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### *External Sources*

Funders: the Department for International Development (DFID), the Hewlett Foundation and the International Development Research Centre (IDRC).

### *Internal Sources*

The University of Goettingen, the Research Centre on Poverty, Equity and Growth in Developing and Transition Countries.

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## **13. Declarations of interest**

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We all have participated in research that is related to this research question in some way, but if any publications from our own work are determined to be eligible for inclusion in the study, we will have an independent evaluator assess the quality of the study.

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## **14. Approximate date for submission of the systematic review.**

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- Date you plan to submit a draft protocol: September 1, 2016
  - Date you plan to submit a draft review: December 1, 2017
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## **15. Plans for updating the review**

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The authors agree to update the review once sufficient studies and funding becomes available.

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## 16. AUTHOR DECLARATION

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### ***Authors' responsibilities***

By completing this form, you accept responsibility for preparing, maintaining and updating the review in accordance with Campbell Collaboration policy. The Campbell Collaboration will provide as much support as possible to assist with the preparation of the review.

A draft review must be submitted to the relevant Coordinating Group within two years of protocol publication. If drafts are not submitted before the agreed deadlines, or if we are unable to contact you for an extended period, the relevant Coordinating Group has the right to de-register the title or transfer the title to alternative authors. The Coordinating Group also has the right to de-register or transfer the title if it does not meet the standards of the Coordinating Group and/or the Campbell Collaboration.

You accept responsibility for maintaining the review in light of new evidence, comments and criticisms, and other developments, and updating the review at least once every five years, or, if requested, transferring responsibility for maintaining the review to others as agreed with the Coordinating Group.

### ***Publication in the Campbell Library***

The support of the Coordinating Group in preparing your review is conditional upon your agreement to publish the protocol, finished review, and subsequent updates in the Campbell Library. The Campbell Collaboration places no restrictions on publication of the findings of a Campbell systematic review in a more abbreviated form as a journal article either before or after the publication of the monograph version in Campbell Systematic Reviews. Some journals, however, have restrictions that preclude publication of findings that have been, or will be, reported elsewhere and authors considering publication in such a journal should be aware of possible conflict with publication of the monograph version in Campbell Systematic Reviews. Publication in a journal after publication or in press status in Campbell Systematic Reviews should acknowledge the Campbell version and include a citation to it. Note that systematic reviews published in Campbell Systematic Reviews and co-registered with the Cochrane Collaboration may have additional requirements or restrictions for co-publication. Review authors accept responsibility for meeting any co-publication requirements.

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**Form completed by:**

**Date:**

Marcela Ibanez Diaz

April 4, 2017