
Protocol: The effect of interventions for women's empowerment on children's health and education: A systematic review of evidence from low- and middle-income countries

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Background

The problem, condition or issue

While numerous facts and figures point towards the increasing opportunities for women and their growing participation in economic, political and public decision-making processes, women remain in disadvantaged positions compared to men in many places of the world (World Economic Forum, 2015). Gender bias is deeply embedded in cultures, economies, and political and social institutions around the world, denying women an equal part in society and decision-making. Gender based discrimination in access to economic opportunities, lack of representation and participation in economic and social spheres, and limited opportunities to accumulate resources could perpetuate vulnerability to poverty among women, limit human capital accumulation and restrict economic growth.

Women's economic involvement, their political participation, and their empowerment in the two crucial domains of education and health, are often seen as the four fundamental factors to create just and equitable societies where both women and men have control over their lives and exert similar, if not equal, influence in society. The Global gender gap report of 2015 uses the aforementioned four domains as the supporting pillars of their gender gap index, which they established as a tool to proxy for the status of women's empowerment since 2006. This index utilizes the information on the opportunities to equal economic and political participation, as well as access to health and education facilities and resources, to determine the gap between males and females in each country, within six different geographical regions. They find that in all aspects, school enrolment and attendance rates, political participation and earnings and labour force participation women are lower than men (World Economic Forum, 2015).

Although there has been a large improvement in the overall gender gap, regional trends vary vastly. Where most countries have improved, some have stagnated and a few have even deteriorated. On average, North America seems to have performed the best at reducing the gender gap as shown in the gender gap index, followed by Europe and Central Asia, while the Middle East and North Africa region seems to be the worst performing. Although this overall ranking also seems to persist in economic participation and opportunities gap, but in terms of political empowerment, the Asia and Pacific region performs much better than Europe and Central Asia. Disparities in health and survival have been reduced massively or eliminated entirely in all regions, besides those in the Asia and Pacific region where nonetheless more than 90 per cent of the gap has been closed. Sub Saharan Africa performs the worst in terms of educational attainment, far behind any of the other regions.

There appear to be different forces that drive these gaps and their persistence within each region, and these are not limited to low and middle income countries. For example, compared to the gender gap index of 2006, even within the Nordic countries, which have the smallest gender gaps, Iceland has overtaken Sweden by reducing the gap at the rate of 10 per cent, while Sweden has been moving at a glacial pace of around one per cent. On the other

hand, in Asia, Nepal and in Latin America, Nicaragua and Brazil are all low income countries that have reduced these gender gaps at outstanding rates, comparable to those of Iceland. Simultaneously though, this swift decline in the gap is not observed across all low and middle income countries. Sri Lanka, Jordan, Mali, Croatia and Slovak Republic are all countries that have widened their gender gaps over time, while Iran has not moved from its 58 per cent gender gap since 2006.

When examining each of the four components of the gender gap, there appear variations between the components that have made most progress in terms of reducing this gap. Gender gaps in economic participation and opportunity are the widest, indicating the wide gap in wages and unequal professional, skilled and technical participation between men and women. Despite the improvements in higher education, where female participation is higher than males in 97 of the 109 countries, it is men who make up the majority in skilled workers in over 60 per cent of the countries. Even if women's political participation has been rising the sharpest since 2006, their economic participation has arrested since 2009/10, where women in 2015 finally achieved the same level of earnings as men did nearly in 2005, 10 years ago.

The Global gender gap report is a clear indication of the intention of all international and national entities towards the measurement of gender equal goals and overall women's empowerment. Another convincing indication of its gaining prominence is visible in Goal 5 of the new Sustainable Development Goals (SDGs). This Goal sets out to "achieve gender equality and empower all women and girls" (United Nations, 2015). As a result, there have been many measures that researchers and politicians are following, and critically evaluating, to determine the gaps between females and males. These may be the aforementioned gender gap index, the Gender Development Index (GDI), the Gender Empowerment Measure (GEM), the Gender Inequality Index (GII) (UNDP, 1995, 1996) or the Social Institutions and Gender Index (SIGI) (Branisa, Klasen, & Ziegler, 2009). While the former rely on the gender inequalities within the four (or fewer) domains that comprise the gender gap index (apart from the standard of living component within the GDI and GEM), the SIGI differentiates itself by incorporating the legal and societal norms and practices that are the underlying cause of the self-same inequalities. Therefore, via widespread literature and research on the same, the concept of women's empowerment is not only gaining prominence and relevance in academic articles and growth related debates, but also in the overall international development and policy agenda.

As Malhotra et al. (2002) point out, women's empowerment has certain unique characteristics that distinguish it from the disempowerment of other disadvantaged or socially excluded group. One of these elements is that women are not just any other socially disadvantaged or excluded group among society, but rather a category of individuals that have a large overlap with each of these other disempowered and disadvantaged groups. Secondly, it is often household and interfamilial relations that are what disempower women in the first place and form the crux of the discrimination towards them. Therefore, familial relations are generally one that accentuate the problem, and this domestic disparity is another key point that differentiates this group from the others. Lastly, while most

discriminations are borne of particular institutions prevalent in society, this discrimination is fundamentally driven by those supporting patriarchal structures. This inherently means that any move towards female empowerment would not only require an overhaul of the official institutions, as is important for empowerment of any marginalized group, but particularly those that foster patriarchal structures. These three crucial differences emphasize the nature and magnitude of the problem and the formidable measures that are required for any positive change.

While gender equality is an end in itself, there is also the expectation that empowerment of women in all sectors of life will build stronger economies and propel growth, improve quality of life and help to achieve equality of rights and actions for half of the world's population. One potential channel through which women's empowerment might affect growth, which is a key determinant of economic growth in itself, is child development, particularly child health and education. While both of these are important channels in and as of themselves, to contribute towards a rising growth trajectory, within this review, we intend to link the two. The importance of child development outcomes for economic growth itself has been discussed in several strands of literature, thereby stressing its role in promoting growth. David Barker posited the foetal origins hypothesis in epidemiological studies, which connects chronic, degenerative conditions of adult health, including heart disease and type 2 diabetes, with health circumstances decades earlier, especially in utero nutrition. Economists have expanded on this hypothesis and investigated a broader range of shocks in early life that impact later-life outcomes, including test scores, education attainment, income and health (Almond & Currie, 2011). James Heckman, Paul Gertler and others also published several studies investigating the impact of early learning and development programmes for disadvantaged children. Results suggest a significant impact on skill levels, health outcomes, overall workforce strength and economic growth over a longer time period (Campbell et al., 2014; Conti, Heckman, & Pinto, 2015; Cunha & Heckman, 2009; Doyle, Harmon, Heckman, Logue, & Moon, 2013; Doyle, Harmon, Heckman, & Tremblay, 2009; Gertler et al., 2013). The goal of this review is to systematically assess the evidence that investigates the effect of interventions that empower women on child development outcomes. Therefore, given the prerequisite of women's empowerment, we will assess exactly how child development outcomes are thus affected.

The intervention

For the purpose of this review, the definition of empowerment is one that we adopt from Kabeer (1999). It states empowerment as “the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them; a process that entails thinking outside the system and challenging the status quo, where people can make choices from the vantage point of real alternatives without punishingly high costs.” This inherently includes several measures, such as women's improved access to health and education, their financial, political and economic empowerment and overall legal and institutional amendments.

Programs that address women's economic empowerment are very diverse both in terms of intervention and in terms of the institutional framework in which they are implemented (Buvinic, Furst-Nichols, & Pryor, 2013). For instance, interventions have focused on promoting women's ability to secure decent jobs, improved access to education, provision of health care, support of women as entrepreneurs (i.e. financial assistance, training), promotion of women to participate in the labour market, changing laws that give women access to land, inheritance and property rights and those give women political decision power. Those interventions that empower women and that directly or indirectly have a second-generation impact are those that we are interested in. The latter might be represented by an intervention that increases women's exposure and access to part time work, job sharing and consequently access to childcare options. This intervention would directly affect women but also indirectly have an impact on the next generation.

How the intervention might work

There are several long-term and short-term interventions possible to arrive at better child development outcomes. Increases in economic and livelihood options for women can be a consequence of improvements in labour rights and laws, leading to improvements in women's household income, increased food intake and schooling consumption for children. Access to microcredit or conditional cash transfers and other such governmental subsidies could lead to increasing access to resources and credit, both of which are forms of intervention which have been shown to lead to a higher allocation of resources onto children's health and education (Blumberg, 1988; Duflo, 2003; Haddad & Hoddinott, 1994; Hoddinott & Haddad, 1995; Lundberg, Pollak, & Wales, 1997; Pitt, Khandker, Chowdhury, & Millimet, 2003; Qian, 2008; Quisumbing & Maluccio, 2003; Rangel, 2006). This increased access might also affect women's agency itself, implying increased autonomy, and self-sufficiency, translating the same values onto the girl child, and affecting child development outcomes (Ghuman, 2003; Kabeer, 1999; Shroff, Griffiths, Adair, Suchindran, & Bentley, 2009; Smith, Ramakrishnan, Ndiaye, Haddad, & Martotell, 2003; World Bank, 2014). These, however, are more long terms consequences of an improved political, ideological and economic environment for a girl child to grow in. Increased political opportunities for women could also lead to improvements in infrastructure and capacities related to children, such as more schools, better roads, closer access to water and increased supply of electricity and other such infrastructure and facilities (Chattopadhyay & Duflo, 2004; Duflo, 2005). A lot of these facilities might not only affect women's role and aspirations in rural villages and households, but also young girls, leading to an overhaul in the institutional structure and hierarchies existent within the society (Beaman, Chattopadhyay, Duflo, Pande, & Topalova, 2009; Beaman, Duflo, Pande, & Topalova, 2012). Better health for the mother may swiftly improve child health outcomes already from *in utero* stages (Almond & Currie, 2011; Osmani & Sen, 2003). Although these interventions might be implement over a short or medium term time frame, their impact can even expand over longer time frames by creating an enabling environment on account of sustained improvements in schooling, health and sanitation facilities, improved access to resources and relevant technology and a dissolution of the patriarchal mesh of society.

On the other hand, these improvements in social, economic and political opportunities could result in increased tensions within the households leading to a larger incidence of domestic violence (Eswaran & Malhotra, 2011; Heath, 2014; Macmillan & Gartner, 1999). A number of studies (also meta-analysis) have already examined the impact of child exposure to domestic violence, and its harmful psychological and cognitive effects (Fantuzzo & Mohr, 1999; Kitzmann, Gaylord, Holt, & Kenny, 2003; Osofsky, 2003). Moreover, with more economic or political participation, there might be lesser time allocated towards child rearing and caring activities, which has been shown to affect cognitive abilities of children and child development in the early years after birth (although these are generally studies in high income country context) (Baum II, 2003; Baydar & Brooks-Gunn, 1991; Brooks-Gunn & Duncan, 1997; Desai, Chase-Lansdale, & Michael, 1989; James-Burdumy, 2005; Ruhm, 2004, 2008; Waldfogel, Han, & Brooks-Gunn, 2002). It might also cause changes in the household and community structures, perhaps regressively (Luke & Munshi, 2011). Moreover, taking up work may expose the mother to health hazards (occupational injuries and diseases), which could in turn affect the child adversely, given that women's health is often synonymous with maternal health (Paul-Majumder, 1996; Pick, Ross, & Dada, 2002). Other channels could be via access to credit and financial services, which could result in increased indebtedness of the household, harmfully affecting child development (Mader, 2013; Schicks, 2014; Taylor, 2011). Education and health spending on children might be spread disproportionately, for e.g. female child could receive a smaller share of the investment than a male child. Furthermore, social norms regarding adequate gender roles, as well as the policy and resource environment, might in general limit the impact of the programs.

The theory of change that guides our analysis has been attached within the Appendix. It is based, to some extent, on the UNICEF framework that has been adopted by Ruel (2008), although some modifications have been made to include the education outcomes that are also of interest to us, besides the child health outcomes.

Why it is important to do the review

Despite the large attention that women's economic empowerment has as a policy objective, to date, this research appears largely scattered and the few existing literature reviews have focused on limited number of articles, a limited time span, or a non-systematic assessment of available published and unpublished studies (Bandiera & Natraj, 2013; Burger, 2010; Buvinic & Furst-Nichols, 2014; Duflo, 2012; Yoong, Rabinovich, & Diepeveen, 2012).

We intend to cover the gaps in these studies in three key ways:

To our knowledge, there is very little evidence cataloguing the link between women's empowerment and child development outcomes. So far, the literature examines the deficits that are present within adults, given the differential circumstances during their birth as well as growth period. These studies have also addressed various channels and potential mechanisms where female empowerment would affect child development outcomes.

Reviews so far have focussed on maternal and child nutrition and the relation or co-incidence between the two (Bhutta et al., 2013; Bold, Mara, Quisumbing, & Gillespie, 2013;

Cunningham, Ruel, Ferguson, & Uauy, 2015), and we intend to extend this by including other health as well as education related outcomes for children. Some reviews have added onto the literature via a particular intervention and its impact on child health: participatory learning activities, for instance (Prost et al., 2013). Other reviews have focussed explicitly only on the review of the literature and disregarded any meta-analysis (Laverack, 2006). This review will attempt to examine the relative importance of each channel and how effectively can policy address the issues that inhibit child development outcomes due to particular female empowerment policies.

Another contribution is the methodological approach of a systematic review. This work would entail collection, appraisal and synthesizes of the evidence based on a systemised process. This implies a more rigorous screening of the evidence, more systematic and demanding in terms of the exact conditions surrounding the intervention, the outcomes, the time period and the country coverage.

The Campbell Collaboration has published systematic reviews and meta-analyses of international development interventions which explicitly aim to empower women - for example microcredit (Vaessen et al., 2014) and self-help groups (Brody et al., 2015) - or those which may have consequences for women - for example, land reform (Lawry et al., 2014). However, this review is the first systematic review to examine the comparative effects of programmes aiming to empower women on outcomes for the subsequent generation. The review is being conducted alongside a review by Ibanez et al. (2017) examining the effectiveness of community-level women's empowerment interventions on household wellbeing.

The third point where we intend to contribute to the literature on the particular relation between female empowerment and child development outcomes is that this study will conduct a meta-analysis with the data extracted from the selected quantitative studies. The meta-analysis will comprise a risk of bias assessment and synthesis of the effect sizes to provide a quantitative estimation of the effect.

Objectives

The primary objective of this review is to answer the following three research questions:

1. What is the quantitative impact of interventions aimed at mothers on child development outcomes? Given our outcome variable of child health and education, the intergenerational impact of all interventions, which were specifically targeted at mothers, will be studied.
2. What exact channels are relevant to translate women's empowerment into improved outcomes for child's health and education? This intervention might have been intending to empower women, via changes in women's bargaining power, household decision making, labour force participation, time use, income, education and health status, level of domestic violence incurred etc. Alternatively, it might lead to a lower amount of time spent on child rearing activities, or decreased bargaining power, thereby leading to increasing domestic violence. Therefore, it is important to establish the link between these interventions and women's empowerment, before determining their role on child development outcomes.

3. What are the institutional barriers and facilitators that might prevent or enable a transformation of these increasing opportunities for women into greater improvements for child outcomes? These institutions refer to those which are national, community level and household level. For instance, any legal reforms that affect the politico-economic structure at the national level, or might affect any changes in the community and familial structures, such as paternal involvement in childcare or delayed age of marriage, are all expected to bring changes in child development outcomes.

Methodology

In this section we list the study design inclusion criteria, the search methods and the approach to data collection, critical appraisal and synthesis.

Inclusion criteria

Types of studies

Based on the research design, we categorize the studies into two major groups:

- a. Controlled experimental designs and natural experiments

These type of studies specifically use a random assignment of the intervention to the treatment group, and evaluate the effect by comparing the outcome with the control group and by using an appropriate methodology.

- b. Quasi-experimental designs

In cases whether the assignment of the treatment is not random, various quasi-experimental designs are used to evaluate the treatment effects. These methods include regression discontinuity design (RDD), instrumental variable (IV), difference-in-differences (DID), fixed effects analysis, propensity score matching, and interrupted time series (single country) designs. 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.

We include studies that address this potential endogeneity issue through any of the aforementioned methods. We include natural experiments and quasi-experimental designs to account for instances where it is impossible to randomize (e.g. a country-wide policy change) or unethical (e.g. certain types of outcomes like child mortality), and due to the inclusion of both intended and unintended (including adverse) outcomes. The includable non-randomized studies will use credible methods that take into account confounding.

We exclude studies that do not attempt to evaluate a causal effect of the intervention on the outcome using these study design. Thus, we exclude any qualitative study or any report that has purely descriptive analysis. We also exclude studies that use data on multiple countries for cross-country time series or panel analysis.

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 were collected. Thus, we exclude studies of interventions in high-income countries. Programs where men also participated, but the intervention was aimed at promoting women's economic empowerment, are also included.

Types of interventions

We will include studies on interventions that are either solely aimed towards women's empowerment, or have a gender-differential component that can potentially improve women's empowerment. We provide examples for each kind of interventions. However, this list is not exhaustive and we shall consider any other intervention that is instrumental in enhancing female economic empowerment and falls under the scope of this review.

a. Enhance women's labour market opportunities

This category will include programs like subsidies, vouchers, child care, elderly care, training programs, job placements, etc. which create better opportunity for women's participation in the labour market. This will also include programs that indirectly create an environment conducive for women's participation in the labour market. For instance, a boom in horticulture exports in Senegal created a dramatic increase in female off-farm wage employment, which resulted in greater bargaining power of women in the household and hence children's schooling (Maertens & Verhofstadt, 2012). Another example is India's National Rural Employment Guarantee Act (NREGA), which is primarily a public works program, but has a gender component through targeting of at least one third of its beneficiaries to be women, and equal wage rates for male and female. This program has been found to give women greater labour market opportunities, helping women to have higher decision making power within household, which subsequently improved children's education (Afridi, Mukhopadhyay, & Sahoo, 2016).

b. Reform the law to give women access to land and inheritance rights

These interventions can include giving women equal inheritance rights through a change in the law, or they can be due to land registration/redistribution rights and land titling programs to include women farmers as owners or co-owners along with men. Some of the examples in this type of interventions are Vietnam's 1993 Land Law that gave land titles to women and thus had a positive effect on children's health and education (Menon, van der Meulen Rodgers, & Nguyen, 2014); and in the Indian context, changes in the Hindu Succession Act, which granted daughters equal

coparcenary birth rights in joint family property that were denied to them in the past (Deininger, Goyal, & Nagarajan, 2013).

- c. Increase participation of women in decision making in the household, firms or politics

This type of intervention would aim at promoting participation of women in the decision making process in various socio-economic spheres such as firms, households, or politics. This can include policies such as gender based affirmative action to create more opportunities for women to take up leadership positions.

- d. Give better access to information regarding women's rights

This includes interventions such as providing information about land rights and entitlements to women farmers, generating awareness about any gender based affirmative actions that may be in place, or existing laws related to women's rights such as prevention of domestic violence and other gender issues.

We will not consider studies that might improve children's health or education outcomes but do so through a channel other than women's empowerment. Therefore, we exclude interventions targeted directly on children's education or health outcomes, unless they have an effect on the second generation through the channel of women's empowerment (girls in this case). Thus, interventions such as cash transfers conditional on school enrolment/attendance, school level interventions towards raising effectiveness of teaching or teacher attendance etc. will not be included. Similar restrictions apply for interventions targeting children's health, such as deworming programs, provision of supplementary nutrition etc.

Note that some of these programs may indeed have a gender component; for instance, interventions that target girls' education (e.g. provision of bicycles to girls in secondary schools) may indeed lead to some form of female empowerment. However, unless a study reports the effect of such program on the second generation, it will not be considered for our systematic review.

Some interventions may have unintended effects on women's empowerment even though the design of the program has neither any objective for women's empowerment nor any gender based component. We will exclude such programs, unless the intervention specifies any component which differentially targets men and women beneficiaries, the female empowerment effect will be considered as unintended consequence of the intervention. Hence such intervention will not be eligible for inclusion in our study.

Comparisons

We include studies that have a clearly defined comparison group for evaluation of the treatment effect. When the intervention aimed at female empowerment is targeted towards a

set of households, then the comparison group would consist of households which are not exposed to this treatment. Since the intervention can also be at various other levels, such as individuals, communities, or regions, therefore the comparison will be made with the corresponding group that has not been affected by this specific intervention. The comparison group is considered to be not affected by the intervention, either when there is no intervention, or when they are still in pipeline while the study was conducted, or they are in a business as usual situation. The idea of comparison group is to capture the counterfactual scenario, therefore the comparison group has to be sufficiently similar with the treatment group. This will be reflected through baseline comparison (pre-test differences) of observable characteristics (including the outcome variable) between the treatment and the comparison groups. We shall also include direct comparison of different interventions (active controls), as it constitutes an important part of the comparative systematic review. Where a study includes more than two intervention arms, we will include in the review only the intervention and control/comparison arms that meet the eligibility criteria.

Types of outcome measures

a. Primary outcomes:

We focus on the effect of these interventions on child development, particularly on children's health and education.

Health: The outcomes are some indicator of child health, e.g. mortality, morbidity, stunting, underweight, wasting, immunization, etc. More specifically, we shall consider child level measures such as height-for-age z-score (stunting), weight-for-height z-score (wasting), weight-for-age z-score (underweight/overweight), body mass index, etc. In some cases the child level observations can be aggregated at the household level and the reported measure can reflect the percentage of children who are stunted/wasted/underweight/immunized. We shall also include them as outcome variables.

Education: We include outcomes related to children's human capital, including investment that improve children's human capital (e.g. expenditure related to child's education). Specific outcomes related to children's education to be considered are:

- Schooling outcomes: school enrolment, attendance, grade progression, primary (or other levels) completion rates, dropout, years of schooling etc.
- Cognitive outcomes: test scores (e.g. reading, math, etc.), literacy, cognitive test (e.g. IQ test), performance in board exam etc.

The investment in children's health and education, both in terms of material resources and time, is also considered a primary outcome for the purpose of this review.

It should be noted that the effect of intervention can have both intended (positive) and unintended (negative) effects on the outcomes stated above. For example, an intervention that raises the mother's income can lead to better education and health of children due to greater investment on children. However, in absence of childcare facilities, an intervention that provides labour market opportunity to mothers can actually lead to worse education or health outcomes of children because the mother may not be able to devote enough time for

child rearing activities. Studies that capture unintended consequences reflected through the outcomes described above are also included.

b. Secondary outcomes:

Moreover, it is important to mention that the channels through which the interventions specified above may have an effect on children's human capital comprise of another set of intermediate outcomes (mediators) such as women's intra-household bargaining power and time use. In the context of adverse outcomes, it is especially relevant to consider the change in mother's time use pattern due to her improved economic participation. If the mother is unable to spend time in child rearing, then it can have a negative effect on younger children's health and cognitive development, and older children may have to substitute for mother's time. Such mediator outcomes may include various indicators of women's empowerment, such as decision making within household, labour force participation, income, or education level.

While these intermediate outcomes are important, the objective of this study is to focus on the final outcome variables that reflect child's human capital formation, therefore we will include studies irrespective of whether they report intermediate outcomes. However, we shall also collect these intermediate outcomes from those studies that do report them, and include them in the review.

Duration of follow-up

We will include studies of any follow-up duration.

Other inclusion criteria

We shall include studies that are conducted within the time span of 1990–2016. The main reason for this selection is that the study designs that we considered started to be produced/appearing in this field mostly after 1990. As Cameron et al. (2016) points out, beginning mid-1990s, impact evaluation evidence was being published at a steady rate. They find that after the year 2000, experimental and quasi-experimental studies became even more popular and were frequently published in social science journals, and outlets of international agencies, governments, universities, and other institutions. Therefore, given our objective of focusing on experimental and quasi-experimental evidence, it is plausible to restrict inclusion to studies conducted during 1990–2016.

We will include studies irrespective of whether they are published in journals/books, or available as working papers, reports or other.

Search strategy

Electronic search

The search strategy used here is adopted from Hammerstrøm, Wade, & Jørgensen, 2010 and it aims to find both journal publications as well as other publications including working papers. 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. The following databases will be searched:

- 3ie database of impact evaluations
- Econlit
- SSRN (<http://papers.ssrn.com/sol3/displayabstractsearch.cfm>)
- EconPapers (<http://econpapers.repec.org/scripts/search.pl>)
- Scopus, ASSIA, IBSS
- MEDLINE, PUBMED
- Global Health
- EBSCO Gender Studies Database
- World Bank - enGENDER IMPACT
- ERIC
- Google Scholar (Only for forward and backward citations)

The second stage will consist of searching backward and forward citations, where reference lists of included studies will be searched and reviewed for additional studies. The reference lists of relevant systematic reviews will also be searched, along with important non-systematic literature reviews such as in Handbook of Development Economics. A record will be maintained, describing the databases searched, the keywords used, and search results from each search engine. The search results will be presented using the standard PRISMA (Preferred Reporting Standard for Systematic Reviews and Meta-Analysis) flow diagram, including the reasons for exclusion at full-text stage.

Search terms

For searching the above databases, our team will use search terms based on inclusion criteria, developed through test-searches. The search terms used to search the selected databases are presented in the appendix. These will be modified to fit the search format for each database.

Selection of studies

Titles and abstracts will be reviewed by a team member using the specific inclusion/exclusion criteria to determine whether the study should be included in the analysis. The selection will be done independently by one team member. An assessment of a random sample of studies by each assessor will be carried out as quality assurance.

Description of methods used in primary research

The selection of studies will be done in accordance with the types of interventions and outcomes discussed in the objectives section. For instance, we will include the following studies: “Old-age pension and intrahousehold allocation in South Africa” (Duflo, 2003) and

“The Impact of Mother Literacy and Participation Programs: Evidence from a Randomized Evaluation in India” (Banerji, R., Berry, J., and Shotland, M., 2015). Duflo (2013) and Banerji et al. (2015) focus on middle income (South Africa) and low income countries (India) respectively, which are a part of our regions of interest. Second, these two studies estimate the quantitative impact of interventions aimed at mothers on child health and education outcomes.

We will exclude studies which do not meet the criteria discussed in the objectives. For instance, “Comparative Study: Impact of Family, School, and Students Factors on Students Achievements in Reading in Developed (Estonia) and Developing (Azerbaijan) Countries” (Shukakidze, 2013). This study is excluded, as it firstly focuses on a high income country, which would not be eligible for inclusion. Second, even for the middle income country, there is no direct intervention for mothers’ empowerment.

Criteria for determination of independent findings

There are a variety of different issues that give rise to issues of dependent effect sizes. For example, there are several publications from one study, or several studies based on the same data set, or studies with multiple treatment arms with only one control group, or studies may report outcome measurements from several time points, or use multiple outcome measures to assess related outcome constructs. In such cases, we cannot treat all outcome estimates as independent of each other (Borenstein, 2009).

Where studies report different outcomes, these will be pooled in separate meta-analyses. Else we will use synthetic effects (weighted mean and standard error) to calculate a single effect size for studies reporting multiple outcomes measuring the same construct or multiple follow-ups. Some more details on this issue are described below.

If there are several publications reporting on the same study we will use effect sizes from the most recent publication. And if there are several studies using the same data set or multiple outcomes are reported within the same study, we will select the study or specification which provides the lowest risk of bias in attributing impact.

Where studies include multiple outcome measures to assess related outcome constructs, we will select the outcome that appears to most accurately reflect the outcome construct of interest, following Macdonald et al. (2012).

For studies with outcome measures at different time points we will separate and synthesize outcomes measured in different time points, following De La Rue et al. (2014). If multiple time points exist within these time periods, we will use the most recent measure.

If the interventions are ongoing programmes, the follow-up will reflect duration spent/being part of in a program, rather than time since intervention. Outcome measures from such

studies are reported at different time points, then we will identify the most common follow up period and include the follow up measures that match most to the meta-analysis. For studies having multiple treatments with only one control group, where the treatments might represent separate treatment constructs, we will calculate the effect size for each pair of treatment versus control separately, and use sub-sample meta-analyses depending on the treatment construct. For different treatments representing the same treatment construct we will follow the procedures outlined in Borenstein et al. (2013, chapter 25) to calculate the weighted mean and standard error for treatments before calculating the effect size for the merged group versus control group.

Details of study coding categories

Data extraction and management

Two team members working independently will extract information from each study included in the review. In this step, data will be extracted and summarized using a pre-piloted extraction form (see appendix), by two team members. The coding sheet would collect information on the types of interventions, targeted population, moderator variables, study design, and outcome variables. Again, disagreements in coding will be resolved through discussion and third-member involvement. The full list of coding categories is provided in Appendix 3 in the Data Extraction Form.

Assessment of risk of bias in included studies

Using a published list of criteria developed by Jie, the quality of the studies will be assessed by two independent team members. Jie has developed a tool to assess risk of bias in social experiments and quasi-experiments, which are widely used in systematic reviews (Hombrados and Waddington 2012). The ROB tool is presented in the appendix.

Statistical procedures and conventions

Measurement of treatment effect

We will calculate standardized mean difference (SMD) for continuous outcome variables, and odds ratios for dichotomous outcome variables. We will report these treatment effects along with standard error or 95 per cent confidence intervals. Treatment effects will be calculated as the difference between, or the ratio of, treated and control observations in a consistent way, such that outcome measures are comparable across studies. We shall also explicitly state and clarify how the effect size measure is defined and interpreted both in terms of sign and magnitude, in order to ensure that the sign of the effect size consistently measures an improvement or deterioration in outcomes across studies.

Unit of analysis

If the unit of treatment assignment is different from the unit of analysis, then we will assess whether the study has taken into account the issue of clustering and adjusted the standard errors accordingly (e.g. whether cluster-robust standard errors are provided). For studies

that pose a risk of unit of analysis error, the standard errors will be adjusted according the formula provided in (Waddington et al., 2012):

$$SE_{corrected} = SE_{uncorrected} * \sqrt{(1 + (m - 1) * ICC)}$$

Where m is the number of observations per cluster and ICC is the intra-cluster correlation coefficient. If information on the cluster size is not reported, then we will estimate m by dividing the total number of participants (or number of participants in each analysis, if data are available) by the number of clusters. If the data for estimating the ICC are not available, then we shall approximate ICC based on studies that have the same or a similar subject, if such studies are found.

We will also consider the unit of analysis issue in our own calculation of effect sizes (SMD or Odds Ratio) and their standard errors. This will be either based on a cluster-adjusted measure of the effective sample size or we will inflate the standard error using the design effect formula presented in Waddington et a. (2012).

Data synthesis

Synthesis of the evidence from the included studies will be presented through narrative and statistical analysis of comparable effect sizes using meta-analysis. Meta-analysis is useful in synthesizing quantitative evidence as it considers statistical power of the estimated effect. However, since we are considering a number of interventions and outcomes, we will first categorize the studies based on their type. Secondly, the scope of the meta-analysis will also depend on the nature of study design. Calculation of standardized mean difference, or the risk ratios are appropriate for similar type of treatment effects, hence they can be widely used for studies that use randomized control trials. However, in case of quasi-experimental studies, the treatment effects may not be strictly comparable. For instance, studies that use a regression discontinuity design or an instrumental variable method typically estimate local average treatment effect (LATE), while those using propensity score matching would estimate the average treatment effect on treated (ATT). For instance, it is usually not possible to make a conversion between the local average treatment effect (LATE) and the intent to treat effect (ITT). Although, if information on compliance rates are available, then one can make comparable conversions between the intent to treat effect (ITT) and the average treatment effect on the treated (ATT). This will depend on whether these information are available in the included studies. Therefore, we will present findings pooled across study designs or treatment effect estimates where evidence does not suggest effects are statistically different. We shall conduct meta-analysis where it is possible to convert the treatment effects into comparable measures (Duvendack, Hombrados, Palmer-Jones, & Waddington, 2012). Specifically, we shall carry out meta-analysis if the effect sizes can be computed for comparison, and the outcome measures are sufficiently similar. We shall conduct subgroup or moderator analysis, and meta-regression where possible, to determine empirical differences for outcome groups. Initially we will conduct separate analyses of randomized control trials (RCT) and quasi-experimental studies due to the differences in treatment effects estimated in these studies. However, we can include them in the same meta-regression analysis where a dummy explanatory variable will be included to control for the

differences in study types. We will analyse effects sizes from studies with active controls separately from those with zero or business-as-usual controls.

These results will be presented using conventional methods such as forest plots. We will use Stata software for this purpose. When meta-analysis is not possible, we shall use narrative synthesis where we shall also discuss about the sample size and magnitude of effects.

Assessment of heterogeneity

When meta-analysis is possible, we shall test for heterogeneity across studies using the I-squared statistic along with the Tau-squared statistic. If heterogeneity is present, then we shall investigate what factors explain it by conducting moderator analysis, including subgroup meta-analysis and meta-regression if possible. Otherwise we shall discuss potential factors behind the heterogeneity through a narrative method. The moderator variables to be considered are race, ethnicity, socio-economic status, region, and number of intervention components. We shall collect data on these variables depending on their availability from the included studies.

Sensitivity analysis

To check if the results are sensitive to quality of data and approaches to analysis, we shall report sub group analysis particularly based on 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 analyse studies separately based on their study design and use narrative to analyse the methodological factors that might moderate the effect size. This will also involve describing studies based on design and risk of bias categories.

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

Treatment of qualitative research

We do not plan to include qualitative research.

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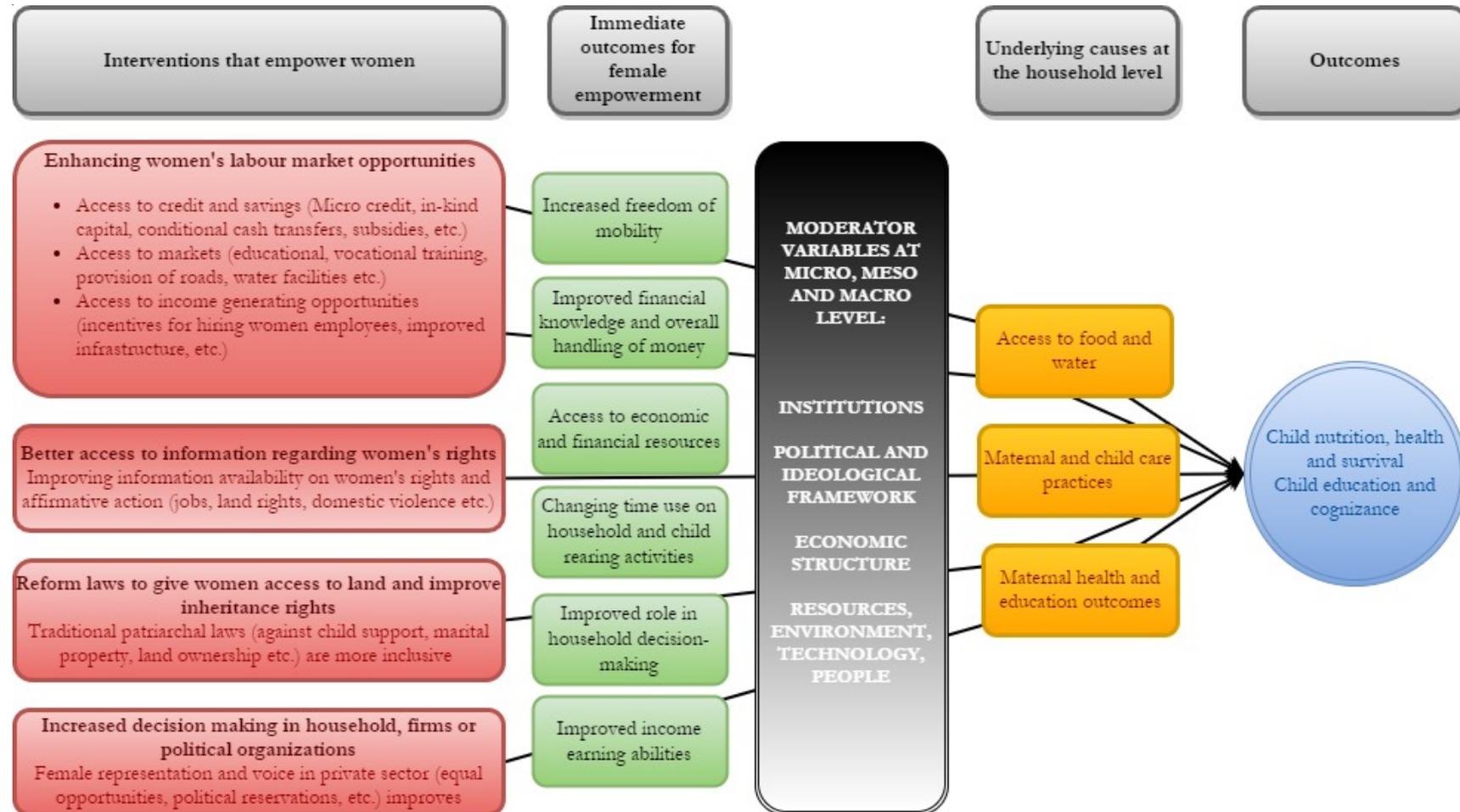
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Appendices

Appendix 1. Theory of change



Appendix 2. Search terms

Children's health outcome

Medline:

- 1 women/ or women, working/ (18223)
- 2 (woman* or women* or mother* or maternal or female* or wife* or wives* or gender*).ti,ab. (1934526)
- 3 1 or 2 (1938542)
- 4 employment/ or career mobility/ or employment, supported/ or return to work/ or unemployment/ (56907)
- 5 "power (psychology)"/ or "Personal Autonomy"/ (25630)
- 6 education/ or vocational education/ or educational status/ (65865)
- 7 work/ or return to work/ (20373)
- 8 decision making/ or choice behavior/ (102091)
- 9 Entrepreneurship/ (2036)
- 10 (education* or employ* or unemployment or work or working or empower* or (decision* adj3 (making or made or make)) or entrepreneur* or labor or labour or right or rights or "choice behavior" or "choice behaviour" or "career mobility").ti,ab. (2210625)
- 11 4 or 5 or 6 or 7 or 8 or 9 or 10 (2340007)
- 12 adolescent/ or child/ or child, preschool/ or infant/ or exp infant, newborn/ (3178440)
- 13 (child* or preschool or daughter* or son or sons or boy or boys or girl or girls or schoolboy* or schoolgirl* or schoolchild* or infant* or newborn* or neonat* or adolescen* or teen* or youth or youths).ti,ab. (1854258)
- 14 12 or 13 (3658029)
- 15 Developing Countries.sh,kf. (78103)
- 16 Africa/ or Asia/ or Caribbean/ or West Indies/ or South America/ or Latin America/ or Central America/ (67251)
- 17 (Africa or Asia or Caribbean or West Indies or South America or Latin America or Central America).tw. (140533)
- 18 (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 Moldovian 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 Tadzhikistan or Tadjikistan or Tadzhih 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).tw. (787174)

19 exp africa/ or exp africa, northern/ or algeria/ or egypt/ or libya/ or morocco/ or tunisia/ or exp "africa south of the sahara"/ or africa, central/ or cameroon/ or central african republic/ or chad/ or congo/ or "democratic republic of the congo"/ or equatorial guinea/ or gabon/ or africa, eastern/ or burundi/ or djibouti/ or eritrea/ or ethiopia/ or kenya/ or rwanda/ or somalia/ or south sudan/ or sudan/ or tanzania/ or uganda/ or africa, southern/ or angola/ or botswana/ or lesotho/ or malawi/ or mozambique/ or namibia/ or south africa/ or swaziland/ or zambia/ or zimbabwe/ or africa, western/ or benin/ or burkina faso/ or cape verde/ or cote d'ivoire/ or gambia/ or ghana/ or guinea/ or guinea-bissau/ or liberia/ or mali/ or mauritania/ or niger/ or nigeria/ or senegal/ or sierra leone/ or togo/ or americas/ or exp caribbean region/ or exp west indies/ or exp central america/ or belize/ or costa rica/ or el salvador/ or guatemala/ or honduras/ or nicaragua/ or panama/ or panama canal zone/ or latin america/ or mexico/ or exp south america/ or argentina/ or bolivia/ or brazil/ or chile/ or colombia/ or ecuador/ or french guiana/ or guyana/ or paraguay/ or peru/ or suriname/ or uruguay/ or venezuela/ or asia/ or asia, central/ or kazakhstan/ or kyrgyzstan/ or tajikistan/ or turkmenistan/ or uzbekistan/ or exp asia, southeastern/ or borneo/ or brunei/ or cambodia/ or timor-leste/ or indonesia/ or laos/ or malaysia/ or mekong valley/ or myanmar/ or philippines/ or singapore/ or thailand/ or vietnam/ or asia, western/ or bangladesh/ or bhutan/ or india/ or sikkim/ or middle east/ or afghanistan/ or bahrain/ or iran/ or iraq/ or israel/ or jordan/ or kuwait/ or lebanon/ or oman/ or qatar/ or saudi arabia/ or syria/ or turkey/ or united arab emirates/ or yemen/ or nepal/ or pakistan/ or sri lanka/ or far east/ or china/ or beijing/ or macau/ or tibet/ or korea/ or mongolia/ or taiwan/ or indian ocean islands/ or comoros/ or madagascar/ or mauritius/ or reunion/ or seychelles/ or pacific islands/ or exp melanesia/ or exp micronesia/ or polynesia/ or pitcairn island/ or exp samoa/ or tonga/ or prince edward island/ or west indies/ or "antigua and barbuda"/ or bahamas/ or barbados/ or cuba/ or dominica/ or dominican republic/ or grenada/ or guadeloupe/ or haiti/ or jamaica/ or martinique/ or netherlands antilles/ or puerto rico/ or "saint kitts and nevis"/ or saint lucia/ or "saint vincent and the grenadines"/ or "trinidad and tobago"/ or united states virgin islands/ or oceania/ (884274)

- 20 ((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. (72954)
- 21 ((developing or less* developed or under developed or underdeveloped or middle income or low* income) adj (economy or economies)).ti,ab. (370)
- 22 (low* adj (gdp or gnp or gross domestic or gross national)).tw. (197)
- 23 (low adj3 middle adj3 countr*).tw. (7067)
- 24 (lmic or lmics or third world or lami countr*).tw. (4397)
- 25 transitional countr*.tw. (132)
- 26 or/15-25 (1316542)
- 27 ("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 ((quantitative or "comparison group*" or counterfactual or "counter factual" or counter-factual or experiment*) adj3 (design or study or analysis)) or QED).ti,ab. (2416011)
- 28 non-randomized controlled trials as topic/ or randomized controlled trials as topic/ (111296)
- 29 propensity score/ (3464)
- 30 Case control study/ (227752)
- 31 Interrupted Time Series Analysis/ (229)
- 32 Random Allocation/ (89435)
- 33 meta analysis/ (74899)
- 34 Controlled Clinical Trial/ (91862)
- 35 (controlled clinical trial or meta analysis or randomized controlled trial).pt. (595539)
- 36 randomized controlled trial/ (434179)
- 37 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 (2988514)
- 38 3 and 11 and 14 and 26 and 37 (7188)
- 39 limit 38 to yr="1990 -Current" (**6695**)

Google Scholar:

Using advanced search, studies that include all of these words: woman mother female girl child health,

AND at least any of these words: educate employ empower access labour information right decision entrepreneur intervention policy program immunize fertility mortality weight stunt wasting nutrition

Econlit:

S18 S1 AND S2 AND S11 AND S12 AND S17
20161231

Limiters - Published Date: 19900101-

Database - EconLit with Full Text **512 – Final result**

S17 TI (woman* or women* or mother* or maternal or female* or wife* or wives* or gender*) OR AB (woman* or women* or mother* or maternal or female* or wife* or wives* or gender*) OR SU (woman* or women* or mother* or maternal or female* or wife* or wives* or gender*) Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 45,797

S16 S1 AND S2 AND S11 AND S12 AND S15 – **Result with Health outcomes filter applied but not Women filter**
Database - EconLit with Full Text 899

S15 S13 OR S14
Database - EconLit with Full Text 646,856

S14 CC I12 OR J13 OR I14 OR I18 OR I15 OR I10 I10 [**Econlit Subject Headings/Concept Codes - Health Behavior (I12); Health: Government Policy; Regulation; Public Health (I18); Fertility; Family Planning; Child Care; Children; Youth (J13); Health and Inequality (I14); Health: Government Policy, Regulation, Public Health (I18); Health and Economic Development (I15); Health: General (I10)**]
Database - EconLit with Full Text 49,860

S13 health OR growth OR invest* OR immunis* OR immuniz* OR vaccin* OR fertil* OR mortality OR death* OR weight OR underweight OR stunt* OR nutrition OR malnutrition OR malnourished OR wasting OR food OR morbidity Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 646,850 [**Searching all fields and within fulltext**]

S12 TI (("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* N3 allocat*) OR "instrumental variable*" OR heckman OR iv OR evaluation OR assessment OR ((quantitative OR "comparison group*" OR counterfactual OR "counterfactual" OR counter-factual OR experiment*) N3 (design OR study OR analysis)) OR qed)) OR AB (("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* N3 allocat*) OR "instrumental variable*" OR heckman OR iv OR evaluation

OR assessment OR ((quantitative OR "comparison group*" OR counterfactual OR "counterfactual" OR counter-factual OR experiment*) N3 (design OR study OR analysis)) OR qed)) OR SU (("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* N3 allocat*) OR "instrumental variable*" OR heckman OR iv OR evaluation OR assessment OR ((quantitative OR "comparison group*" OR counterfactual OR "counterfactual" OR counter-factual OR experiment*) N3 (design OR study OR analysis)) OR qed)) Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 99,911

S11 S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10
Database - EconLit with Full Text 285,626

S10 TI "transitional countr*" OR AB "transitional countr*" OR GE "transitional countr*" Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 196

S9 TI (lmic OR lmics OR "third world" OR "lami countr*") OR AB (lmic OR lmics OR "third world" OR "lami countr*") OR GE (lmic OR lmics OR "third world" OR "lami countr*") Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 1,251

S8 TI (low N3 middle N3 countr*) OR AB (low N3 middle N3 countr*) OR GE (low N3 middle N3 countr*) Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 564

S7 TI ((low* N1 (gdp OR gnp OR "gross domestic" OR "gross national"))) OR AB ((low* N1 (gdp OR gnp OR "gross domestic" OR "gross national"))) OR GE ((low* N1 (gdp OR gnp OR "gross domestic" OR "gross national"))) Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 219

S6 TI (((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) N1 (economy OR economies))) OR AB (((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) N1 (economy OR economies))) OR GE (((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) N1 (economy OR economies))) Limiters - Published Date: 19900101-20161231

S5 TI (((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) N1 (countr* OR nation* OR population* OR world OR state*))) OR AB (((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) N1 (countr* OR nation* OR population* OR world OR state*))) OR GE (((developing OR "less* developed" OR "under developed" OR underdeveloped OR "middle income" OR "low* income" OR underserved OR "under served" OR deprived OR poor*) N1 (countr* OR nation* OR population* OR world OR state*))) Limiters - Published Date: 19900101-20161231

S4 TI (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 camérons 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 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 moldovian 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 phillippines 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 "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) OR AB (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 camérons 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 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 moldovian 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 philippines OR phillippines OR "Papua New Guinea" OR romania OR rumania OR roumania OR rrwanda OR ruanda OR "Saint Lucia" OR "St Lucia" OR "Saint Vincent" OR "St Vincent" OR grenadines OR samoa OR "Samoa Islands" OR "Navigator Island*" 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) OR GE (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 camérons 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 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 moldovian 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 "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 tadjikistan OR tadjik 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) Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 190,938

S3 TI (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR AB (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") OR GE (Africa or Asia or Caribbean or "West Indies" or "South America" or "Latin America" or "Central America") Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 216,288

S2 TI (child* or preschool or daughter* or son or sons or boy or boys or girl or girls or schoolboy* or schoolgirl* or schoolchild* or infant* or newborn* or neonat* or adolescen* or teen* or youth or youths) OR AB (child* or preschool or daughter* or son or sons or boy or boys or girl or girls or schoolboy* or schoolgirl* or schoolchild* or infant* or newborn* or neonat* or adolescen* or teen* or youth or youths) OR SU (child* or preschool or daughter* or son or sons or boy or boys or girl or girls or schoolboy* or schoolgirl* or schoolchild* or infant* or newborn* or neonat* or adolescen* or teen* or youth or youths) Limiters - Published Date: 19900101-20161231
Database - EconLit with Full Text 35,651

S1 TI (employ* or "career mobility" or unemployment or empower* or education or work or (decision* N3 (making or made or make)) or "choice behavior" or "choice behaviour" or entrepreneur* or education* or labor or labour or right or rights) OR AB (employ* or "career mobility" or unemployment or empower* or education or work or (decision* N3 (making or made or make)) or "choice behavior" or "choice behaviour" or entrepreneur* or

education* or labor or labour or right or rights) Limiters - Published Date: 19900101-20161231

Database - EconLit with Full Text 279,147

Children's education outcome

Google Scholar:

Using advanced search, studies that include all of these words: Econ* *child* educat*, AND any of these words: school* *litera* enrol* attend* dropout* grade* cognit* test* perform* exam* boy* girl* *son* *daughter* *mother* female* women autonom* bargain* decision transfer*

Econlit:

1 (mother* or maternal or grandmother* or aunt* or sibling* or sister or sisters or stepmother* or daughter*).ti,ab. (6538)

2 J16.cc. (24218)

Annotation: [J16 - Economics of Gender, Non-Labor Discrimination]

3 1 or 2 (28460)

4 (educat* or school* or illitera* or literacy or enrol* or attend* or dropout* or drop-out* or grade* or read* or math* or numera* or cogniti* or perform* or exam or exams or examination*).ti,ab. (185278)

5 (I21 or I24 or I25 or O15).cc. (62857)

Annotation: [I21 - Analysis of Education; I24 - Education and Inequality; I25 - Economics and Economic Development; O15 - Economic Development: Human Resources, Human Development, Income Distribution]

6 4 or 5 (224609)

7 (child* or grandchild* or boy* or girl* or son* or grandson* or daughter* or granddaughter* or offspring* or sibling*).ti,ab. (26452)

8 J13.cc. (18310)

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

9 7 or 8 (34647)

10 (Africa or Asia or Caribbean or West Indies or South America or Latin America or Central America).ti,ab,ct,gr. (217075)

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 Moldavia 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 Tadzhiestan or Tadjikistan or Tadhik 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. (205492)

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. (35569)

13 ((developing or less* developed or under developed or underdeveloped or middle income or low* income) adj (economy or economies)).ti,ab. (3745)

14 (low* adj (gdp or gnp or gross domestic or gross national)).tw. (126)

15 (low adj3 middle adj3 countr*).tw. (511)

16 (lmic or lmic3 or third world or lami countr*).tw. (1770)

17 transitional countr*.tw. (196)

18 or/10-17 (313494)

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 (394)

21 limit 20 to yr="1990 -Current" (394)

Eric:

1 (mother* or maternal or grandmother* or aunt* or sibling* or sister or sisters or stepmother* or daughter*).ti,ab. (29456)

- 2 "Parent Child Relationship"/ or "Parent Attitudes"/ or "Family Environment"/ or "Parenting Styles"/ or "Family School Relationship"/ or "Parent Role"/ or "Parent Participation"/ (63643)
- 3 Mothers/ or Grandmothers/ or Siblings/ or Daughters/ or Sisters/ (16442)
- 4 1 or 2 or 3 (81311)
- 5 (Africa or Asia or Caribbean or West Indies or South America or Latin America or Central America).ti,ab,sh,id. (18410)
- 6 (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 Camerouns 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 Moldovian 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 Tadzhikistan or Tadjikistan or Tadhik 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,sh,id. (72988)
- 7 ((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. (7462)
- 8 "Developing Nations"/ (14191)
- 9 ((developing or less* developed or under developed or underdeveloped or middle income or low* income) adj (economy or economies)).ti,ab. (93)
- 10 (low* adj (gdp or gnp or gross domestic or gross national)).tw. (2)
- 11 (low adj3 middle adj3 countr*).tw. (70)

12 (lmic or lmics or third world or lami countr*).tw. (1502)
13 transitional countr*.tw. (8)
14 or/5-13 (87146)
15 ("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. (292082)
16 4 and 14 and 15 (840)
17 limit 16 to yr="1990 -Current" (668)

Appendix 3. Data Extraction Form

Add the basic information of the papers

- | | |
|---|--|
| <input type="checkbox"/> Study ID (id) * | <input type="checkbox"/> Coders Initials (coderid) |
| <input type="checkbox"/> Date Coded (date) | |
| <input type="checkbox"/> Funder | |
| <input type="checkbox"/> Country | |
| <input type="checkbox"/> Start day of Study | <input type="checkbox"/> End date of the Study |

Type of Intervention

Please choose only one of the following:

- Property Rights
- Labour Markets
- Political Participation
- Inheritance Rights
- Entrepreneurship
- Financial markets
- Agricultural productivity

Description of Intervention

Program (If applicable)

Region and city (if applicable)

Gender Target Population

- Men
- Women
- Women & men

Age Target Population

- Children
- Teenager
- Adults
- Not specified

Income Target Population

- Low
- Middle
- High
- Diverse
- Not specified

Number of Intervention Components

- 1 2 3 4 5

Type of component 1 (to 5)

Origin Intervention

Please choose only one of the following:

- Community-based
- NGO
- Local/National Government
- Foreign Government

Moderator variables

Please choose only one of the following:

- Race
- Ethnicity
- Socio-economic status
- Region
- Other

Study Design

Please choose only one of the following:

- RCT
- Regression Discontinuity
- Matching
- IV
- Difference in Difference
- Heckman
- Panel Data

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 'Matching' or 'IV' at question '20 [p00121]' (Study Design)

Sample Size

Type of Sampling

Please choose only one of the following:

- Random
- Purposive
- Convenience
- Cannot Tell

Outcome Category

Please choose any of the following:

- Health
- Education

Number of Health/Education Outcomes

- 1
- 2
- 3
- 4
- 5

Direction of the Effect

- Effect favours treatment
- Effect favours comparison
- Effect favours neither
- Cannot tell

Were any differences in measurement of this outcome between the group participants and the comparison?

- Yes
- No
- Cannot tell

Effect is statistically significant?

- Yes
- No
- Cannot tell

Treatment sample size

Control sample size

Nature of the measures

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' at question '49 [p00150]' (Nature of the measures)

Comparison group mean

Only answer this question if the following conditions are met:

Answer was 'Continuous' at question '49 [p00150]' (Nature of the measures)

Are means reported above adjusted?

Only answer this question if the following conditions are met:

Answer was 'Continuous' at question '49 [p00150]' (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' at question '49 [p00150]' (Nature of the measures)

Treatment group standard deviation

Only answer this question if the following conditions are met:

Answer was 'Continuous' at question '49 [p00150]' (Nature of the measures)

Treatment group standard error

Only answer this question if the following conditions are met:

Answer was 'Continuous' at question '49 [p00150]' (Nature of the measures)

Comparison group standard error

Only answer this question if the following conditions are met:

Answer was 'Continuous' at question '49 [p00150]' (Nature of the measures)

t-value from an independent t-test

Only answer this question if the following conditions are met:

Answer was 'Continuous' at question '49 [p00150]' (Nature of the measures)

Treatment group number of participants who experienced a change

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Comparison group number of participants who experienced a change

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Treatment group proportion of participants who experienced a change

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Comparison group proportion of participants who experienced a change

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Are the proportions above adjusted for pretest variables?

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Yes

No

Logged odd-ratio

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Standard error of logged odds-ratio

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

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' at question '49 [p00150]' (Nature of the measures)

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' at question '49 [p00150]' (Nature of the measures)

Correlation Coefficient

Only answer this question if the following conditions are met:

Answer was 'Dichotomous' at question '49 [p00150]' (Nature of the measures)

Hand calculated d-type effect size

Only answer this question if the following conditions are met:

Answer was 'Hand Calculated Data' at question '49 [p00150]' (Nature of the measures)

Hand calculated error of the d-type effect size

Only answer this question if the following conditions are met:

Answer was 'Hand Calculated Data' at question '49 [p00150]' (Nature of the measures)

Hand calculated odds-ratio effect size

Only answer this question if the following conditions are met:

Answer was 'Hand Calculated Data' at question '49 [p00150]' (Nature of the measures)

Hand calculated odds-ratio standard error

Only answer this question if the following conditions are met:

Answer was 'Hand Calculated Data' at question '49 [p00150]' (Nature of the measures)

Intermediate outcomes or themes (knowledge, skills)

Only answer this question if the following conditions are met:

Answer was 'Hand Calculated Data' at question '49 [p00150]' (Nature of the measures)

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' at question '73 [p00175]' (Are there results coming from regressions?)

Method: Econometric model?

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Outcome

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Effect (mean)

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Standard Deviation Effect

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Controls

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Standard Deviation: Y

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Standard deviation: X

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

B (beta)

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Standard error B (beta)

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Degrees of Freedom

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

Data Type

Only answer this question if the following conditions are met:

Answer was 'Yes' at question '73 [p00175]' (Are there results coming from regressions?)

- Panel
- Cross-section
- Time series

Quality assessment form

General Information

ID

Date * _____ Study ID * _____ Reviewer * _____

Which type of design is used?

- Randomized Control Trial
- Regression Discontinuity
- Matching Estimator
- Instrumental Variable
- Other

Baseline Characteristics

Contain baseline characteristics?

- Yes
- No
- Unclear
- Not applicable

Are the mean values or the distributions of the covariates at baseline statistically different for beneficiaries and non-beneficiaries ($p < 0.05$)

- Yes
- No
- Unclear
- Not applicable

If there are statistically significant differences in plausibly exogenous characteristics between beneficiaries and non-beneficiaries are these differences controlled for using covariate analysis in the impact evaluation?

- Yes
- No
- Unclear
- Not applicable

Does the study use a comparison/control group of students/households without access to the program?

- Yes
- No
- Unclear

Not applicable

Is difference in differences estimation used?

Yes

No

Unclear

Not applicable

Does it assess the parallel trends assumption?

Yes

No

Unclear

Not applicable

If the study does not use difference in difference, does the study control for baseline values of the outcome of interest

Does it control for other covariates at baseline?

Yes

No

Unclear

Not applicable

If the study does not use difference in differences estimation, is there any assessment of likely risk of bias from time invariant characteristics driving both participation and outcome?

Yes

No

Unclear

Not applicable

If estimation does not use a statistical technique to control for selection bias, are all relevant observable covariates (confounding variables) included in the outcome equation which might explain outcomes (RCT, PSM or covariate matching, IV or switching regression)? This might, for example, include control for ability, and/or social capital.

Yes

No

Unclear

Not applicable

Attrition

Does it report attrition (drop-out) rates?

Yes

No

Unclear

Not applicable

Spillovers: Are comparisons sufficiently isolated from the intervention (e.g., participants and non-participants are sufficiently geographically or socially separated)?

Yes

No

Unclear

Not applicable

Contamination: does the study assess whether the control group receives the intervention?

Yes

No

Unclear

Not applicable

Other threats to validity

Does the evidence suggest analysis reporting biases are a serious concern?

Yes

No

Unclear

Not applicable

Are there concerns about courtesy bias, social acceptability bias, political correctness bias, self-serving bias, self-importance bias and biases in reporting of sensitive information from outcomes collected through self-reporting?

Yes

No

Unclear

Not applicable

Construct Validity

Was the survey suitable for the local context?

- Yes
- No
- Unclear
- Not applicable

Make a comment on your choice here:

Does the study describe the implementation of the program in sufficient detail?

- Yes
- No
- Unclear
- Not applicable

Does the study take into consideration potential implementation failures?

- Yes
- No
- Unclear
- Not applicable

Does the study use a proper theory of change, log frame and/or other proper conceptual or theoretical framework?

- Yes
- No
- Unclear
- Not applicable

Do the authors highlight the intention-to-treat effect?

- Yes
- No
- Unclear
- Not applicable

External Validity

Is the study sample representative of the population of interest?

- Yes
- No
- Unclear
- Not applicable

Does the study assess the replicability of the intervention?

- Yes
- No
- Unclear
- Not applicable

Is the intervention replicable?

- Yes
- No
- Unclear
- Not applicable

Does the study assess the scalability of the intervention?

- Yes
- Not
- Unclear
- Not applicable

Is the intervention scalable?

- Yes
- No
- Unclear
- Not applicable

Do the authors clearly distinguish between the intention-to-treat effect and the treatment effect on the treated?

- Yes
- No
- Unclear
- Not applicable

Confidence Intervals

Does the study account for lack of independence between observations within assignment clusters if the outcome variables are clustered?

- Yes
- No
- Unclear
- Not applicable

Is the sample size likely to be sufficient to find significant effects of the intervention?

- Yes
- No
- Unclear
- Not applicable

Do the authors control for heteroscedasticity and/or use robust standard errors?

- Yes
- No
- Unclear
- Not applicable

Randomization

Does the study apply randomized assignment?

- Yes
- No
- Unclear
- Not applicable

Does the study use a unit of allocation with a sufficiently large sample size to ensure equivalence between the treatment and the control group?

- Yes
- No
- Unclear
- Not applicable

Discontinuity Designs

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

- Yes
- No
- Unclear
- Not applicable

Make a comment on your choice here:

PSM, covariate matching

Are beneficiaries and non-beneficiaries matched on all relevant characteristics?

- Yes
- No
- Unclear
- Not applicable

Does the study report the results of the matching function (e.g. for PSM the logit function)?

- Yes
- No
- Unclear
- Not applicable

Does the study report the matching method?

- Yes
- No
- Unclear
- Not applicable

Does the study exclude observations outside the common support?

- Yes
- No
- Unclear
- Not applicable

For nearest-neighbour PSM, does the study report the mean or distribution of the propensity scores in the treatment and control groups after matching?

- Yes
- No
- Unclear
- Not applicable

Instrumental Variable Estimation

Does the study describe clearly the instrumental variable(s)/identifier used?

- Yes
- No
- Unclear
- Not applicable

Are the results of the participation equation reported?

- Yes
- No
- Unclear
- Not applicable

Are the instruments jointly significant at the level of $F \geq 10$? If an F test is not reported, does the author report and assess whether the R-squared of the instrumenting equation is large enough for appropriate identification (R-sq. > 0.5 ?)

- Yes
- No
- Unclear
- Not applicable

Are the instruments individually significant ($p \leq 0.05$)?

- Yes
- No
- Unclear
- Not applicable

For IV, if more than one instrument is used in the procedure, does the study include and report an over identifying test ($p > 0.10$ is required to reject the null hypothesis)?

- Yes
- No
- Unclear
- Not applicable

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)?

- Yes

- No
- Unclear
- Not applicable

Censored outcome variables

[] Do the authors use appropriate methods (e.g. Heckman selection models, obit models, duration models) to account for the censoring of the data?

- Yes
- No
- Unclear
- Not applicable

[] For Heckman models; is there is a variable that is statistically significant in the first stage of the selection equation and excluded from the second stage?

- Yes
- No
- Unclear
- Not applicable

Risk of Bias tool

CODER INITIALS	STUDY DESIGN	OTHER COMMENTS	Primary Outcomes	Outcome Type	Any subgroup analysis
Question 1: 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? Coding decision (yes=1, no=2, 8= unclear, 9=no data)					
Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)					
Question 2: Sample selection bias: is there differential selection of participants into study groups at baseline (censored data) or follow-up (attrition)? Coding decision (yes=1, no=2, 8= unclear, 9=no data)					
Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)					
Question 3: Spill-overs, cross-overs and contamination: was the study adequately protected against spill-overs, cross-overs and contamination? Coding decision (yes=1, no=2, 8= unclear, 9= no data)					
Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)					
Question 4: Outcome reporting: was the study free from selective outcome reporting? Coding decision (yes=1, no=2, 8= unclear, 9= no data)					

Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)	
Question 5: Analysis reporting: was the study free from selective analysis reporting? Coding decision (yes=1, no=2, 8= unclear, 9= no data)	
Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)	
Question 5: Performance bias: was the process of being observed free from motivation bias? Coding decision (yes=1, no=2, 8= unclear)	
Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)	
Question 6: Other risks of bias: Is the study free from other sources of bias?	
Justification for coding decision (Include a brief summary of justification for rating, mentioning your response to all sub questions, cite relevant pages)	

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Roles and responsibilities

Please give a brief description of content and methodological expertise within the review team. It is recommended to have at least one person on the review team who has content expertise, at least one person who has methodological expertise and at least one person who has statistical expertise. It is also recommended to have one person with information retrieval expertise. Please note that this is the *recommended optimal* review team composition.

- **Content:**

Prof. Vollmer will take the lead on the content of the focus on the impact of female economic empowerment on the next generation. The chapter will particularly focus on child health and overall development. Prof. Vollmer leads a research group in development economics with a focus on maternal and child health at the University of Göttingen and is Adjunct Assistant Professor of Global Health at the Harvard T.H. Chan School of Public Health. He is the lead PI of various randomized field experiments, particularly of an impact evaluation of a female self-help group program to empower women in the state of Bihar in India. His field experience as well as grasp on the literature surrounding child development will provide guidance on the conceptualization of the review question.
- **Systematic review methods:**

Sarah Khan and Soham Sahoo will provide guidance on questions of systematic review methodology. They both have previous experience in conducting systematic reviews and have knowledge on the statistical methods required to conduct meta-analyses. Their research work on gender inequality and its impact on education would form a good basis for developing a research strategy for the review.
- **Statistical analysis:**

Statistical analysis in the first chapter will be carried out jointly by Sarah Khan, Le Thi Ngoc Tu, Atika Pasha and Soham Sahoo. They have experience with data analysis and familiarity with statistical analysis in meta-analysis. Mr Waddington will serve as a statistical advisor. He has substantial experience in systematic reviews, meta-analyses and generalized evidence synthesis methods.
- **Information retrieval:**

Sarah Khan, Le Thi Ngoc Tu , Atika Pasha and Soham Sahoo and will jointly develop the information retrieval for the review, starting with the title and abstract screening. Data extraction will be conducted by research assistants, under the guidance of Le Thi Ngoc Tu and Atika Pasha, who will also ensure that the data entry will be accurate and as expansive as required for the meta analysis. All

of them have experience in literature reviews and good understanding of statistical methods. They have access to University of Göttingen library that will be the main source of information retrieval.

Sources of support

Describe the source(s) of financial and other support for the proposed review. The systematic review will be a part of the 'GrOW' (Growth and Economic Opportunities of Women) Program which has received funding from IDRC, the Hewlett Foundation, and DFID. The final review is due by the end of 2017, before we have to submit progress reports. Moreover, the resources at the University of Göttingen will be the source of all data extraction and information retrieval.

Declarations of interest

Please declare any potential conflicts of interest. For example, have any of the authors been involved in the development of relevant interventions, primary research, or prior published reviews on the topic?

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 into the study, we will have an independent evaluator assess the quality of the study.

Preliminary timeframe

Approximate date for submission of the systematic review.

Please note this should be no longer than two years after protocol approval. If the review is not submitted by then, the review area may be opened up for other authors.

- Date you plan to submit a draft protocol: November 11, 2016
- Date you plan to submit a draft review: December 11, 2017

Plans for updating the review

Reviews should include in the protocol specifications for how the review, once completed, will be updated. This should include, at a minimum, information on who will be responsible and the frequency with which updates can be expected.

The authors agree to update the review if sufficient new studies and adequate funding to undertake this venture become available.

AUTHOR DECLARATION

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.

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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.

I understand the commitment required to undertake a Campbell review, and agree to publish in the Campbell Library. Signed on behalf of the authors:

Form completed by: Sebastian Vollmer

Date: 31.05.2017