

# Analyzing the Impact of Interventions to Grow High-Potential Small Businesses in Developing Countries

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This paper examines various interventions that could spur the growth of small businesses in developing countries. The main interventions analyzed are grants, loans, business training, and formalization in the three regions of Sub-Saharan Africa, Asia, and Latin America. This paper first summarizes previous research in a literature review before analyzing original data from 37 published economics papers. Based on this meta-analysis, which standardizes results from previous research, it is concluded that substantial heterogeneity exists in the efficacy of interventions by location and gender. Impacts of small business interventions are typically greater for male-owned businesses than female-owned businesses, although variation exists between the effects of interventions for female-owned businesses, with some interventions having zero or negative impacts and the most impactful interventions having substantial positive impacts. Policymakers in developing countries may thus find it especially high-yield to ensure proper targeting of interventions for female entrepreneurs. The data also shows that in of the regions examined, some interventions had negative impacts, so prioritizing the utilization of evidence from their region given variation in the effectiveness of interventions by geography may also be profitable.

## Introduction

As the economies of the world grow and expand, a key factor that researchers are turning towards is the growth of small businesses. In developing countries, small and often informal businesses account for a great portion of economic activity. Some small businesses also have high potential for growth, so identifying and helping these small businesses can boost economic growth. Especially in developing countries, many small businesses face barriers to growth such as credit constraints, lack of access to finance and infrastructure, high taxes, and informality, which refers to the part of the economy that is not taxed or monitored by the government. Furthermore, research as identified in the literature review shows that gender inequality is present in the development and growth of small businesses, identifying how female-run businesses may face different barriers to growth and may benefit from different interventions. It is crucial to understand these small businesses and how they can grow and develop in the future, in order to promote economic growth in developing countries.

Substantial research exists focusing on the effects of specific interventions including grants, loans, business training, and formalization on the profits of small businesses in various regions of the world. This paper analyzes and compares data regarding these interventions to determine which interventions are the most useful for which types of businesses. More specifically, this paper compiles original data from 37 academic economic studies examining the impact of small business interventions

in low-income to middle-income countries across Sub-Saharan Africa, Asia, and Latin America. These three regions were chosen to include a wider world demographic in the data analysis. Data from these studies was obtained and standardized so as to compare the impacts of these interventions.

The data concludes that there is substantial evidence showing differences in effects of the interventions with variations between locations and genders. This paper also makes recommendations for which interventions are the most effective for men and women in specific regions, as there are clear differences between the effects of interventions on male and female-run businesses in different countries. For example, female-owned businesses in Africa saw extreme negative effects when given loans or training, contrasted with the generally positive effects of all interventions for male-owned businesses in Africa. This paper therefore makes the recommendation to focus on accurate interventions for female-owned businesses in Africa due to the possible negative consequences of loans and training. Similarly, combining types of interventions resulted in positive effects for male-owned businesses but negative effects for female-owned businesses. These variations in results are taken into account in the conclusion, with recommendations according to each result.

## Literature Review

Small businesses in developing countries often have ten or fewer workers, with the average business having only one worker (McKenzie 2017)<sup>1</sup>. These small businesses that have high po-

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tential for growth are essential for spurring the development of an entire economy. From this idea comes the term “constrained gazelles,” which are high-potential small firms that have similar characteristics as top performers but have struggled to reach their potential (Grimm et al. 2012)<sup>2</sup>. Numerous researchers have looked at how to identify these high-potential small firms in developing countries and the barriers that they face.

In an article investigating the key markers of high growth firms (Dwyer and Kotey 2015)<sup>3</sup>, researchers found that certain characteristics distinguish high-potential firms from other firms: entrepreneurship training and experience, management, strategies for innovation, marketing, and employee learning. The article also found that business owners’ personality traits and education in management do not have a significant impact on identifying these firms.

Another study shows that community advice can be critical to identification (Hussam 2022)<sup>4</sup>. The researchers found that although people may be biased, with the right resources and techniques, community members can provide very accurate information about local enterprises.

Furthermore, research shows that holding business competitions can help in identifying high potential firms as well (McKenzie 2017)<sup>1</sup>. By providing a competition for grants, the researchers were able to collect applications from a wide variety of businesses and discover top performing businesses after reviewing the applications with experts in the field.

Finally, researchers have found a distinction between voluntary entrepreneurship and involuntary entrepreneurship. One research paper (Breza et. al 2021)<sup>5</sup> induces hiring shocks in which they employ a large percentage of the labor force, showing that many entrepreneurs in developing countries involuntarily run their businesses and would prefer jobs with steady wages. Another research paper (Donovan et al. 2023)<sup>6</sup> uses panel data to show that transitions from running a business to being an employee happen more frequently in developing countries than in developed countries. This information is helpful when identifying businesses that have a desire to grow versus businesses whose owners would rather be employed in a job.

In addition to identifying constrained gazelles, there is research on what barriers to growth these small firms in developing countries face. There are many different constraints to growth that small businesses face, arguably the greatest one being a lack of access to financial services, including credit and banking systems. A high number of constrained gazelle firms are credit-constrained, meaning that they are unable to borrow money for their businesses, most likely because lenders believe that they cannot pay it back (Jayachandran 2020)<sup>7</sup>. Additionally, research shows that loaners are often wary of a lack of feasible business plans (Fal 2013)<sup>8</sup>. Another study found that small firms face greater barriers to growth related to access to finance, than large firms (Beck et al. 2005)<sup>9</sup>. Furthermore, research conducted on the leather industry in Sri Lanka (Levy 1993)<sup>10</sup>

shows that high taxes are also a big obstacle for small firms.

Another constraint to growth is formalization, or legally registering a company. In a research paper by La Porta and Shleifer (2014)<sup>11</sup> it is found that an estimated 35-40% of the economy is made up of businesses in the informal sector. It is also shown that formalization can provide many benefits such as access to bigger markets and credit. De Soto (2000)<sup>12</sup> discusses how many firms do not formalize because they are deterred by financial costs and the application process or because they lack information about the benefits of formalizing. However, another research paper (Ulyssea 2018)<sup>13</sup> concludes that formalization isn’t actually a significant barrier to growth, suggesting conflicting research outcomes on this topic.

Moreover significant research highlights how business training and experience can actually prevent small firms from growing. In the study involving a business plan competition (McKenzie 2017)<sup>1</sup>, researchers gave the competition winners access to business training and subsequently found that training doesn’t have a significant effect on business expansion.

Furthermore, a research paper that focuses on entrepreneurship in sub-Saharan Africa (Fal 2013)<sup>8</sup> notes that infrastructure is an important factor to small businesses in developing countries. Lack of access to electricity, advanced technology, and road networks negatively impact the costs, market access, and efficiency of businesses across sub-Saharan Africa. Moreover, bigger businesses have more resources to build their own generators for electricity and to use planes, cars, and other forms of transportation, leading to greater inequality between large and small firms.

Researchers have also pointed out how political instability can negatively affect entrepreneurial growth, especially in developing countries or war-stricken countries. Research by Alesina and Perotti (1993)<sup>14</sup> shows how political instability reduces business investment because it raises risks through economic instability.

Finally, there is evidence that gender inequality plays a role in high-potential small firms’ growth. One research paper (Carranza et al. 2018)<sup>15</sup> identifies how female-run businesses look and run differently, facing different economic and non-economic constraints. Another paper investigates how social and gender norms act as barriers to female employment and entrepreneurship, looking into how factors such as safety, monetary control in the household, and societal backlash against female breadwinners can constrain female-run businesses (Jayachandran 2020)<sup>7</sup>. This paper discusses unique barriers that female entrepreneurs face, including statistics on how female businesses tend to be smaller.

To combat these barriers, many researchers have investigated the effects of certain policies and interventions. There is a lot of research on how money grants can spur the growth of small businesses in developing countries. For example, one researcher explored the effect of a business competition in Nigeria

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(McKenzie 2017)<sup>1</sup>. The competition involved many businesses submitting applications for the grant and having a panel of field professionals to judge each application, and the winners were given \$50,000 in cash, while some winners also got training. The results showed that giving grants to high-potential businesses could positively benefit firm survival and growth. This is the same outcome that other researchers have reached as well, although there are varying levels of impact throughout the literature.

Another researcher gave grants to groups of entrepreneurs in Uganda, and the results showed that the grants increased business assets, hired labor, and monthly cash earnings (Blattman et al. 2014)<sup>16</sup>. Fafchamps et. al (2014)<sup>17</sup> investigated the effect of cash and in-kind grants in Ghana, looking specifically at the different effects of cash grants versus in-kind grants on male versus female-owned businesses. Their results showed that both cash grants and in-kind grants positively affected monthly profits and total capital stock for both male and female entrepreneurs, but to varying degrees. McKenzie and Woodruff (2008)<sup>18</sup> researched the difference in effects between grants in cash and grants as equipment and inventories.

Besides grants, researchers have also looked into other ways of helping high potential small businesses. The impact of formalization on small businesses in the informal sector has been explored by many researchers. For instance, de Soto (2000)<sup>12</sup> claims that formalization gives small businesses better access to capital and product markets, while La Porta and Shleifer (2014)<sup>11</sup> argue that informal firms are not held back by their informality.

The impacts of interventions on formalization is also fairly divided, as some papers show that interventions that help businesses with the registration process increase formalization (McKenzie and Sakho 2010)<sup>19</sup>, while other research shows that providing information on formalization and covering fees for registration is ineffective (de Andrade et al. 2013)<sup>20</sup>. Another paper shows that providing help with the registration process in Colombia only has short-term impacts (Galiani et al. 2017)<sup>21</sup>.

Another form of intervention that shows up in literature is business training. Some studies show that business training has no significant impact on the growth of small businesses (Fiala 2015)<sup>22</sup>, while other studies show that business training can increase profits, survival, and growth. For example, Kliner and Schundeln (2011)<sup>23</sup> investigate the effects of the nonprofit Techno Serve's business plan competitions in El Salvador, Guatemala, and Nicaragua, finding that individuals who participated in the competition are more likely to expand their businesses. Business training is also a popular intervention for female businesses, as women often have less access to formal education in developing countries, although some researchers have found that business training might not be enough to spur growth of female small businesses (Jayachandran 2020)<sup>7</sup>.

Another paper researches barriers to hiring for small busi-

nesses (Alfonsi et al. 2020)<sup>24</sup>. This paper shows that sometimes, an employee's productivity is initially low - so their wages exceed their productivity - but has the potential to grow through experience and training. However, small firms might not be able to withstand that period of losses. In this paper, Alfonsi et al.<sup>24</sup> investigate the effects of wage subsidies and vocational training on small businesses in Uganda.

Researchers have also found that credit-constrained small businesses may benefit from improved access to microcredit. Recently, however, researchers have found that expanded access to microcredit is only helpful for certain businesses and not others. For example, Banerjee et al. (2015)<sup>25</sup> studies the impact of a microfinance lender that lends to female entrepreneurs in India, finding that the take-up of loans is fairly low. This shows that the demand for microcredit is not widespread. Other papers have also looked into how different structures of microloans such as having a requirement of high repayment amounts impact their effectiveness (Field et al. 2013)<sup>26</sup>.

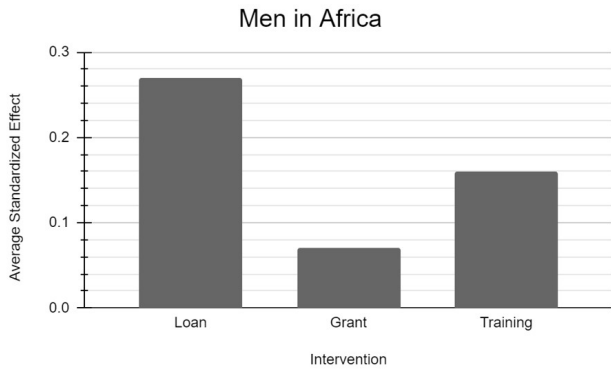
Finally, some research papers give various recommendations for certain barriers of growth instead of describing the effect of a certain intervention. For example, Fal (2013)<sup>8</sup> identifies financing, skills and talent, business support, government programs, and infrastructure to be some barriers that small businesses in Africa face. The paper gives recommendations for each barrier, ranging from upgrading infrastructure in productive areas with business activity to providing tax and other incentives to investors in small businesses.

While there is an abundance of research and literature on different techniques to identify constrained gazelles, there is a lack of information on how diverse high-potential small firms with different circumstances require specific interventions. There is also a lack of systematic analysis on these interventions and barriers. This paper will dive into analysis of certain interventions on certain barriers that small businesses face, comparing these interventions in effectiveness on different types of small businesses.

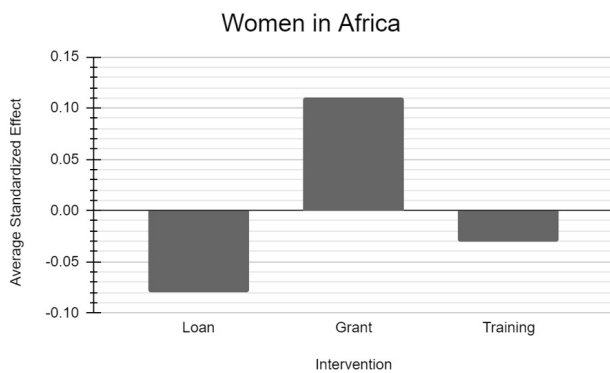
## Results

Appendix 1 depicts the table of data that was analyzed. The columns in the table are organized by region, gender, intervention, average standardized effect, number of studies, and confidence interval. The rows are arranged by the three regions: Sub-Saharan Africa, Asia, and Latin America.

There was a total of six studies analyzed for interventions on male-owned businesses in Africa. One study focuses on the effect of loans, four studies focus on grants, and the last one focuses on business training. The study investigating the effect of loans, Fiala (2015)<sup>22</sup>, shows an ASE of 0.27, with a 95% ACI ranging from -0.02 to 0.56, indicating a significant positive effect on profits. Business training also seems to be an impactful intervention for male-owned businesses in Africa, as Berge et

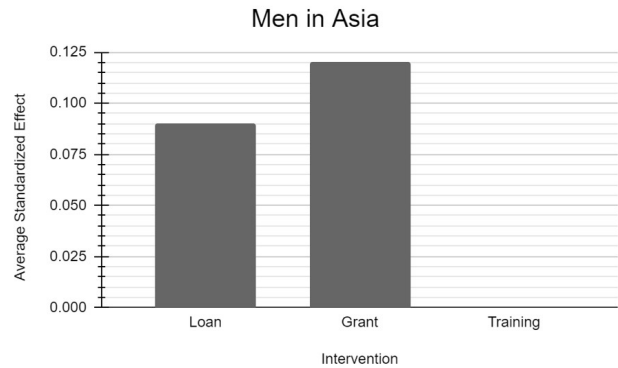


al. (2015)<sup>27</sup> show an ASE of 0.16 with a 95% ACI ranging from -0.03 to 0.36. On the other hand, giving businesses grants seems to be the least effective (Fiala 2015, Fafchamps et al. 2013, Berge et al. 2015)<sup>17,22,27</sup>, with the ASE being 0.07 at an average 95% ACI ranging from -0.12 to 0.26. The confidence intervals for all three interventions also indicate the possibility of no significant effect, with the intervals ranging from negative to positive; however, the most effective intervention for this category of businesses seems to be loans.

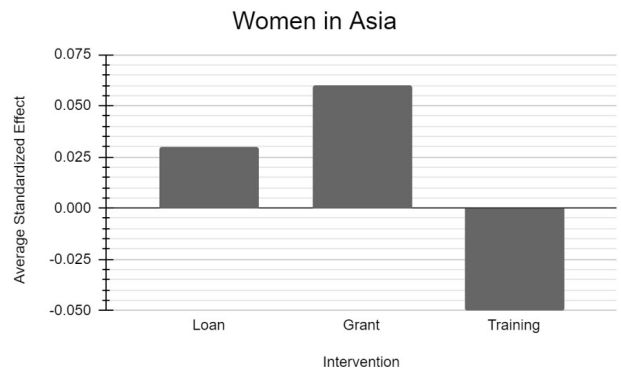


The effects of six studies analyzing the three interventions for female-owned businesses in Africa, as shown above, indicate that grants seem to be the most effective intervention for this category of businesses. As with the studies analyzed for male-owned businesses in Africa, there was one study investigating loans, four for grants, and one for business training. The studies analyzing the effects of grants on businesses (Fiala 2015, Fafchamps et al. 2013)<sup>17,22</sup> show a positive ASE of 0.11, with a 95% ACI ranging from -0.11 to 0.34, indicating effectiveness. The other two interventions conclude with pretty uncertain data: the study investigating the effect of loans (Fiala 2015)<sup>22</sup> shows an ASE of -0.08 with a 95% ACI ranging from -0.31 to 0.15, while the study focusing on business training (Berge et al. 2015)<sup>27</sup> shows an ASE of -0.03 with a 95% ACI ranging from -0.29 to 0.23. Both confidence intervals show very uncertain results. From this sample of studies, it is concluded that

grants may be the most effective intervention for female-run businesses.



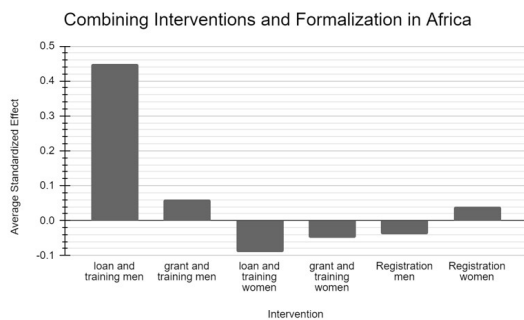
This figure shows the effects of the three interventions on male-owned businesses in Asia. There were a total of three studies analyzed for this category – one study for each intervention. Giving businesses loans (Gine et al. 2014)<sup>28</sup> had an ASE of 0.09, with the 95% ACI ranging from -0.11 to 0.28. Giving businesses grants (de Mel et al. 2008)<sup>29</sup> had a slightly larger ASE of 0.12, with a 95% ACI ranging from 0.01 to 0.22. On the other hand, business training (Gine et al. 2014)<sup>28</sup> seemed to have no effect on business profits at all, and the 95% ACI ranges from -0.13 to 0.12, showing a great level of uncertainty. It can be concluded from these data that grants were the most effective form of intervention and had the most certainty as well.



The effects of the three interventions on female-run businesses in Asia are shown in the graph above. There were a total of six studies analyzed for this category, with three studies focusing on loans, one study on grants, and two studies on business training. The ASE of giving loans to female-owned businesses in Asia (Gine et al. 2014, Attanasio et al. 2011, Banerjee et al. 2015)<sup>25,28,30</sup> is 0.03, with a 95% ACI ranging from -0.18 to 0.24, and the ASE of grants (de Mel et al. 2008)<sup>29</sup> is 0.06, with a 95% ACI of -0.04 to 0.17. In contrast, business training (Gine et al. 2014, de Mel et al. 2014)<sup>28,31</sup> seems to be the least effective for raising business profits, as it has a negative ASE of -0.05, with

a 95% ACI ranging from -0.23 to 0.13. It is shown from this data that grants were the most effective form of intervention, although there is some uncertainty as the confidence interval includes both negative and positive.

Another region analyzed was Latin America. There were a total of three studies, one focusing on the effects of grants on male-owned businesses, while the other studies focused on the effects of business training on female-owned businesses. The ASE of grants for male-owned businesses (McKenzie and Woodruff 2008)<sup>18</sup> was 0.2, with a 95% ACI ranging from -0.02 to 0.43. This shows a pretty large effect on business profits, suggesting that grants are a good choice for raising business profits. The ASE of business training (Karlan and Valdivia 2011, Calderon et al. 2013)<sup>32,33</sup> for women in Latin America was 0.14, with a 95% ACI ranging from -0.04 to 0.32, suggesting that business training can be effective in raising profits for these businesses. This also indicates a difference, in terms of business training, between female-owned businesses in Latin America and female-owned businesses in Asia and Africa, as the effects were negative for those in Asia and Africa.



With a focus on Africa as a region, two more factors were analyzed: the effects of combining certain interventions and the effects of formalization. There were three total studies investigating the effects of combinations of interventions for male-owned and female-owned businesses in Africa, one study focusing on the effects of loans and training and the other two studies focusing on grants and training. When male-owned businesses received loans and business training (Fiala 2015)<sup>22</sup>, the ASE was 0.45, with a 95% ACI ranging from 0.0 to 0.89, showing that combining loans with business training was highly effective in raising profits. On the other hand, the ASE for female-owned businesses that received loans and training (Fiala 2015)<sup>22</sup> was -0.09, with a 95% ACI ranging from -0.32 to 0.15. As for the effects of combining grants with business training (Fiala 2015, McKenzie 2017)<sup>1,22</sup>, male-owned businesses saw an ASE of 0.06, with a 95% ACI ranging from -0.27 to 0.38, while female-owned businesses saw an ASE of -0.05, with a 95% ACI ranging from -0.32 to 0.23, showing that receiving grants combined with business training was not as effective as receiving loans with business training.

Finally, formalization was another intervention that was analyzed, although the studies that were used were only held in Africa. In one study by Campos et al. (2018)<sup>34</sup>, business registration had a -0.04 ASE, with a 95% ACI ranging from -0.13 to 0.04, showing that there is uncertainty in the data and that there may be positive effects. For female-owned businesses, the study shows an ASE of 0.04, with a 95% ACI ranging from -0.07 to 0.16. These confidence intervals both include negative and positive numbers, although the study seems to show that formalization was more effective for female-run businesses than male-run businesses.

## Discussion

A key takeaway from this analysis is that substantial variation exists in the efficacy of small business interventions in the developing world by the location and gender of the entrepreneur. What may work in one place or for one business-owner may flounder in another location or for an entrepreneur with a different identity.

Male-owned businesses in Africa may benefit the most from loans, while male-owned businesses in Asia may see higher growth in profits with grants. Both female-owned businesses in Africa and female-owned businesses in Asia seem to have the highest profits after receiving grants. In Africa specifically, combinations of loans and business training may raise profits even more than just loans or just business training for male-owned businesses. For female-owned businesses in Africa, however, combinations of loans and training or grants and training may not be as effective. Female-owned businesses also often see negative effects when implementing certain interventions while male-owned businesses only have positive or no effects.

This suggests that it may be important for policymakers to focus on implementing correct interventions for female-owned businesses as the effects vary a lot more. When faced with limited resources, it may be more high-yielding to target female-run businesses as most interventions will yield positive effects for male-owned businesses. Another recommendation would be to formalize and move out of the informal sector. In Africa, business registration may be effective for female-owned businesses but may be less effective for male-owned businesses, although when combined with increased access to banking systems, registration may be effective for both male and female-owned businesses. In 2/3 of the regions examined, some interventions yield negative impacts, showing that policymakers also may find targeting regions to be rewarding as there are differences between regions. However, differences between regions may imply that there can be differences within regions, so more research should be conducted, using this paper as a foundation.

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## Methods

This research paper focuses on three main interventions that can help small businesses grow. In this paper, profit is examined as the main indicator of business growth. This paper mainly focuses on profitability because it shows the ability of a business to generate enough revenue to cover expenses and still have money remaining, which also indicates that a business is sustainable and able to grow in the long-term. At the same time, profitability is important in the context of developing countries, where many small businesses lack financial stability and face resource constraints like limited access to capital, infrastructure, and skilled labor (Levy 1993)<sup>10</sup>.

The three main interventions analyzed in this paper are grants, loans, and business training. One of the most critical barriers to growth is lack of access to capital. Therefore, many researchers have investigated the effects that funding in the form of grants and loans have on business growth. Another point of interest for many researchers is formalization, and the difference in performance between businesses in the informal sector and the formal sector. However, few experiments investigate the effects of formalization on businesses owned by men and women, so this intervention is analyzed as an additional intervention outside of the main data.

Another factor investigated in this paper is the difference in the effects of certain interventions between gender. Research shows that female-run businesses often face different constraints to growth than male-run businesses, so it is crucial to find comparisons between the two (Jayachandran 2020)<sup>7</sup>. Similarly, different regions have different economic, social, and financial circumstances, so interventions in three global regions are compared – Latin America, Sub-Saharan Africa, and Asia.

The data used in this paper was collected by reading prominent papers on microentrepreneurship in five leading academic economics journals — The American Economic Review, *Econometrica*, *Journal of Political Economy*, *Quarterly Journal of Economics*, and *Review of Economic Studies* — and following their footnotes to augment the review. A total of 37 papers were collected and assessed for this quantitative meta-analysis. The standardization process of the data included collecting data, and, to make every study comparable, converting the study effects into z-scores, which were used to calculate the standardized error and the average standardized effect. The average standardized effect, or ASE, is the arithmetic mean of the effect size of each category in z-scores.

Some roadblocks in the data collection process were that differences in gender were not always reported and the standard deviation was not usually published. To counter the latter roadblock, the original replication data had to be downloaded to calculate the standard deviation. Other papers were not analyzed in the data collection process due to the lack of relevant information such as gender differences or region. The data for effect

size in profits found in each paper was most often reported in Z-scores or currency. The sample size was also collected, along with the standard error, and the control mean, which then was used with the effect size to calculate the average standardized effect (ASE), average standardized standard error, and average confidence intervals (ACI). This data was then all graphed by region and gender, allowing for a comparison of the interventions' effects.

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**Appendix One: Data Table of Region, Gender, Intervention, Number of Studies, ASE, ACI**

| Region        | Gender | Intervention       | ASE   | Number of Studies | 95% CI Low | 95% CI High |
|---------------|--------|--------------------|-------|-------------------|------------|-------------|
| Africa        | Men    | Loan               | 0.27  | 1                 | -0.02      | 0.56        |
|               | Men    | Grant              | 0.07  | 4                 | -0.12      | 0.26        |
|               | Men    | Training           | 0.16  | 1                 | -0.03      | 0.36        |
|               | Women  | Loan               | -0.08 | 1                 | -0.31      | 0.15        |
|               | Women  | Grant              | 0.11  | 4                 | -0.11      | 0.34        |
|               | Women  | Training           | -0.03 | 1                 | -0.29      | 0.23        |
|               | Men    | Loan and Training  | 0.45  | 1                 | 0.00       | 0.89        |
|               | Men    | Grant and Training | 0.06  | 2                 | -0.27      | 0.38        |
|               | Women  | Loan and Training  | -0.09 | 1                 | -0.32      | 0.15        |
|               | Women  | Grant and Training | -0.05 | 1                 | -0.32      | 0.23        |
|               | Men    | Registration       | -0.04 | 1                 | -0.13      | 0.04        |
|               | Women  | Registration       | 0.04  | 1                 | -0.07      | 0.16        |
| Asia          | Men    | Loan               | 0.09  | 1                 | -0.11      | 0.28        |
|               | Men    | Grant              | 0.12  | 1                 | 0.01       | 0.22        |
|               | Men    | Training           | 0.00  | 1                 | -0.13      | 0.12        |
|               | Women  | Loan               | 0.03  | 3                 | -0.18      | 0.24        |
|               | Women  | Grant              | 0.06  | 1                 | -0.04      | 0.17        |
|               | Women  | Training           | -0.05 | 2                 | -0.23      | 0.13        |
| Latin America | Men    | Grant              | 0.20  | 1                 | -0.02      | 0.43        |
|               | Women  | Training           | 0.14  | 2                 | -0.04      | 0.32        |