Does receiving a cash grant improve individual earnings in a war-torn country? Evidence from a randomized experiment in Afghanistan [version 2; peer review: 2 approved]

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Abstract

Background: In this study, the effect of receiving a non-trivial cash grant and mentorship for business practice on individual earnings in Afghanistan was assessed.

Methods: This randomized control trial (RCT) included 2177 individuals (n=2177), with the age range of 18-35 years. The amount of cash grant (500 USD) was approximately equal to the gross domestic product (GDP) per capita in the country. By a process of lottery, eligible applicants were equally divided into the group that received the grant (treatment group) and the group that did not (control group).

Results: Almost two years after this study, the percentage of increased annual income to the size of this cash grant was approximately 173 % and 69 % for males and females, respectively. This result was much higher than the estimated percentage reported in previous literature assessing the effect of microfinance loans and cash grants in other countries. The treatment group had 7% higher probability of having an officially registered business than the control group. The treatment group also increased labor supply and employed additional workers, compared to the control group. The male treatment group bought more capital equipment (e.g., trike and commercial carts) than the male control group, while the female treatment group bought more domestic animals.

Conclusion: A non-trivial cash grant has a strong positive effect on the earnings of the recipient of the cash grant in Afghanistan. If the state of increased income continues for the next few years, the sum of increased income will be more than the sum of the administration cost, the interest cost and the amount of cash grant given. This implies that the project passes the standard criteria to determine the appropriateness of government program. Additionally, we did not find
any economically and statistically significant positive effect of mentorship on income.

**Keywords**
Cash Grant; Income; Poverty; RCT; Afghanistan; microenterprise

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Introduction
Lack of adequately paying jobs has become a major challenge in Afghanistan. In 2016–2017, according to Afghanistan Living Conditions Survey, 25% of the population were unemployed and 54% lived below the poverty line (Islamic Republic of Afghanistan Central Statistics Organization, 2018). Even among those employed, their employment is mainly informal and through microenterprises. World bank (2019) reports that 80% of those employed have unstable jobs by being self- or family-employed, or having short-term (daily) employment in informal microenterprises.

However, the prevalence of informal microenterprise is not unique to Afghanistan but common among the majority of developing countries (La Porta & Shleifer, 2014). Thus, the main question would be how the prevalence of informal microenterprises can be transformed into an opportunity for income growth and stable employment.

In the last decade, through randomized experiments, a growing number of studies have indicated the strong and positive effect of cash grants on income growth and microenterprise activities in developing countries (Blattman et al., 2014; Blattman & Ralston, 2015; Blattman et al., 2020; De Mel et al., 2008; De Mel et al., 2012; Fafchamps et al., 2014; Haushofer & Shapiro, 2016; McKenzie, 2017). In Afghanistan, however, there are several reasons as to why such cash grants might not be effective in increasing microenterprise activities and income. First, the lack of security is still a major issue in this country. According to the United Nations Assistance Mission to Afghanistan, the number of civilian death due to conflicts and explosives was over 3000 yearly, from 2014 till 2017 (United Nations Assistance Mission in Afghanistan, 2018). Second, the female unemployment rate (41%) is higher than the male unemployment (18%), which is mainly due to the negative attitude and lack of social acceptance and support for women in business (Allen et al., 2007; Beath et al., 2013). Third, it is widely recognized corruption is prevalent in Afghanistan (United Nations Office on Drugs and Crime, 2012). In the corruption perception index constructed by experts, Afghanistan was ranked fourth from the bottom among 180 countries in 2017 (Transparency International, 2017). Several official documents report that the corruption in Afghanistan hinders the effectiveness of aid programs from enhancing enterprise activities (Special Inspector General for Afghanistan Reconstruction, 2018; Special Inspector General for Afghanistan Reconstruction, 2021). As such if weak microenterprise activities are mainly due to these three factors, then providing cash grants in Afghanistan might not be as effective as in other countries.

In this paper, we have analyzed the effects of receiving a non-trivial amount of cash grant in Afghanistan for individuals aged 18–35 on their income growth.

Our study has several unique aspects. First, most previous studies with the same topic were conducted in relatively peaceful countries, except for post-conflict studies in Uganda by Blattman et al. (2014) and Blattman et al. (2020). However, Afghanistan has been at war for the past 20 years, which ended just recently [Wall Street Journal, 2021]. Thus, knowledge on how to improve people’s income in such a country will be useful for other fragile war-torn countries that need reconstruction. Second, Afghanistan is an Islamic country where Islamic religion, with a strong norm, is practiced. In the strictest interpretation of the religion, lending money with interest is strictly prohibited (Nagaoka, 2012). Therefore, it is important to evaluate whether receiving a cash grant, which does not involve the repayment of the principal and interest, would be effective in this country. Third, in this study, the Experiment provides a large amount of cash grant, which is almost equal to the gross domestic product (GDP) per capita. Fourth, most importantly, Islamic Republic of Afghanistan ended on August 15, 2021 without much resistance to Taliban (Wall Street Journal, 2021). The fact that Taliban captured the country quite easily may indicate that people had already lost the trust to the government even before 2021 because the aid programs were not working well due to bad designs and bad implementation of those programs (Special Inspector General for Afghanistan Reconstruction, 2018). Thus, it is important to evaluate to what degree this specific government program was working well or not working well.

Methods
Study Environment
With the high population growth rate of Afghanistan and the security situation, providing reasonable jobs to people becomes challenging because lower security condition makes it difficult to conduct businesses and decreases the incentive to start a new business and to purchase equipment. According to Afghanistan Living Conditions Survey 2016–2017 (Islamic Republic of Afghanistan Central Statistics Organization, 2018), unemployment rate, the ratio of people who are seeking a job but do not have a job in the labor force, is 25%. In particular, the male’s unemployment rate is 18%, whereas the female’s unemployment rate is 41%. Even among those who have a job, 19.7% of males stated that they want additional work, and 23.7% of females stated that they want additional work. Among those employed, the salaried worker is 17.2% (including public sector). Specifically, unpaid male family workers are 24.5%,
and daily labor is 15.7%. The ratio of people who are working for their own business is 40.1%.

The security condition in Afghanistan is getting worse. According to the Special Inspector General for Afghanistan Reconstruction, in 2017, the middle year in the experiment, approximately 59.7% of the country’s 407 districts were under Afghanistan government control or influence; 11.1% of total districts were under insurgent control or influence; 29.2% of all districts were contested districts. (Special Inspector General for Afghanistan Reconstruction, 2017). According to the United Nations Assistance Mission to Afghanistan, the number of civilian death due to conflicts and explosives was 3701, 3565, 3510, and 3428, from 2014, 2015, 2016, and 2017, respectively (United Nations Assistance Mission in Afghanistan, 2018). Meanwhile, the number of injuries caused by these activities for the same years was 6384, 7419, 7924, and 7015, respectively.

In terms of education, there is a substantial disparity between males and females, depending on the area. For example, in urban areas, 66.9% of males and 40.8% of females are literate, whereas in rural areas these values decrease to 45.6% and 13.1% for males and females, respectively. The poverty rate is also severe in Afghanistan. In 2016, it was reported that 54% of households had expenditure less than the poverty threshold.

Gender roles in both intra-household and business in Afghanistan are influenced by socio-political aspects (Abirafeh, 2009). Moreover, Afghanistan has suffered from a power vacuum driven by the absence of a decisive central government, which prepared the ground for the influence of alternative socio-political and religious elements. These circumstances primarily applied to the rural areas, which comprise the majority of the country’s social class (Abirafeh, 2009; Barfield, 2010). In the following, two influential social and religious factors affecting Afghan women’s access and control over resources within the household and social spheres that are widely practiced are presented: (i) the principle of the Purda (derived from Pashtunwali principles) and the (ii) Rigid interpretation of the Salafi sect.

The “Purda” principle restricts women’s mobility outside the house. This principle is derived from the Pashtunwali; a quasi-legal system practiced among the Pashto ethnic in Afghanistan and Pakistan (particularly in the so-called Tribal Areas of the Northwest Frontier Province). (Abirafeh, 2009; Barfield, 2010; Beath et al., 2013; Ginsburg, 2011; Hawkins, 2009). According to Ginsburg (2011) and Hawkins (2009), although women are among the fundamental elements of the Pashtunwali system (Purda Principle), women are inferior beings who are subordinate to men and must be strictly protected for males’ honor (Ginsburg, 2011; Hawkins, 2009).

The implementation of the Salafi (a branch of Sunni Islam) religious sect has negatively impacted women’s access and control over resources at both domestic and community levels. Therefore, this interpretation emphasizes restoring the lifestyle and tradition of the Prophet Muhammad (from the 7th century AD) and fighting against any religious innovation (so-called bidah) in terms of interpretation (Barfield, 2010) (Abirafeh, 2009), including women’s engagement in various socio-economic activities that requires presence in the mixed environments with other men.

Due to those two aspects, there were no changes in individuals’ attitudes about women’s role in the intra-household decision-making and the general status of women in society in the past two decades. Meanwhile, increasing insecurity exacerbated restrictions on women’s mobility. Furthermore, no positive effect was found concerning the positive attitude toward women’s participation in the village governance in Pashto-majority areas, and this attitude difference was significant compared with other ethnolinguistic districts. (Beath et al., 2013)

Literature on the effect of cash grant
Randomized controlled trial experiments have been conducted to examine the effect of receiving a non-trivial amount of cash grant to relieve the capital constraint. In the Ultra Poor (TUP) project in Bangladesh from 2007 to 2011, Bandiera et al. (2013) examined the effect of giving a non-trivial amount of cash grant. The recipient group were females living in chronic poverty and either chosen to receive a one-time cash grant of 140 USD (= 9500 TK) or, the equivalent, two cows (or sometimes one cow and five goats). The authors found that the recipient group’s profit increased by 38 percent compared to the control group and was sustained even after the support was stopped.

In a randomized trial control conducted in Tanzania, Berge et al. (2015) examined the effect of an experiment combining two programs: the support to access financial resources and giving business training for small-scale male entrepreneurs. The authors compared the effect of combining two programs with the effect of implementing one of the above two programs. They find that the effect of combining two programs is stronger than the effect of implementing only one program. However, this stronger effect is not observed among female microentrepreneurs. As a potential reason, the authors suggest the importance of non-cognitive abilities and family constraints.

In connection to alleviating capital constraints, Banerjee et al. (2015) conducted a similar field experiment to an experiment conducted by Bandiera et al. (2013) in six countries on three continents (Ethiopia, Ghana, Honduras, India, Pakistan, and Peru), enabling access to capital among 10,495 male and female living in chronic poverty. The study showed the positive effect of access to capital on self-employment activities, particularly in terms of increasing productive assets, income, and revenue. The results were consistent in nearly all countries.

In an experiment conducted by Blattman et al. (2014) in Uganda from 2007–2012, the authors examined the effect of cash grants on youth employment among illiterate young males and females aged 13–35. The target groups had to form new groups at the time of application, 265 groups were formed to receive the grant, and 270 groups were also formed as control groups. The treatment groups were given an amount of 382 USD per group member in a lump sum. The authors observed that the workload,
income, and working hours of the treatment group significantly increased; however, there was no evidence of changing social cohesion in the study.

Haushofer and Shapiro (2016) studied the effect of unconditional cash transfer among impoverished households in rural areas of western Kenya. They found a positive effect of the unconditional cash transfer on self-employment, asset holdings, consumption, food security, and psychological well-being. However, they also found that the monthly and lump-sum transfers yielded different effects. The author found that smaller transfers positively affected food security more than larger transfers. Regarding the gender differences in the initiative’s impact, the author observed an increased spillover effect among female recipient groups over the control group | treatment group where they received a cash grant, did not receive a cash grant. The lottery and the baseline interview were conducted in August 2015. Due to the potential lack of sufficient numbers of mentors who could give mentorship on businesses, mentorship on businesses was randomly given to the half of individuals who received the cash grant and lived in Kabul (Figure 1).

In summary, those studies demonstrate the positive impact of unconditional cash transfers on self-employment and promoting small-scale entrepreneurship in developing countries. However, the positive effects alter depending on additional elements such as gender, frequency and amount of cash transfers, and the inclusion of other initiatives such as business training. Furthermore, based on the obtained results, despite all the conditions being the same, the outcome among female recipients was more positive and stronger than male recipients’, suggesting the more significant influence of gender differences impacting the return of unconditional cash transfers.

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Study design

The program “Promoting Entrepreneurship among the Youth in Afghanistan” (PEYA) was an RCT-based project funded by the Afghan Reconstruction Trust Fund. It was launched in August 2015 and closed in July 2018. The PEYA program was implemented by the Ministry of Labor and Social Affairs of Afghanistan in Balkh, Kabul, and Nangarhar provinces. The program’s objective was to help establish new micro-enterprises or expand existing businesses by providing a cash grant of USD 500 (approximately 33,500 Afghan (Afs)), which is equivalent to 2017 GDP per capita in the country to zero or low education individuals. In this study, 3490 eligible applicants were chosen depending on their business proposals. Based on a lottery process, half of the study participants (1745) were assigned to the treatment group where they received a cash grant, whilst the other half who were assigned to the control group...
was also shared with local authorities, such as the governor’s office staff, provincial councils, and community leaders.

The application form was a three-page questioner containing 19 questions that covered six sections (skills, support, and investment; product/services; price; place; promotion; customers) (Kashefi & Naito, 2021a). The answers to most questions were closed-ended; however, there were several questions that had open-ended options to provide space for detailed answers. Each question and option had equivalent marks. Completion of the questioner on average took 15–20 minutes. Quality assurance was made by the training and moderating committee at the local level. Collectedly, the project had 8238 applications from the three provinces.

Considering the low level of literacy within the communities, application forms printed on large banners were also provided in addition to conventional brochures and posters. Subsequently, the applicants were selected based on an evaluation of their initial submitted business plan, which included information, such as education, age, demographic characteristics, income, work experience, business type, and their plans on how they would spend the grant. In many cases, the applicants were assisted by other family members, neighbors, etc., who had a higher level of education and were able to convey the information in the application form. The applications with a higher score than the threshold level of the score become qualified for the lottery process. After the qualified applicants were selected, scheduled meetings for baseline interviews and lottery were announced to be held in each province. At the meetings, professionally trained interviewers conducted the baseline interviews. After which each qualified applicant draws a lottery number that determines the receipt of the cash grant.

Given the amount of the cash grant and concern about corruption in the process of choosing the recipients, it was important that all applicants understood that the recipients of cash grants were chosen fairly. Thus, the process of lottery took place in the presence of representatives from provincial councils, provincial governors, the Implementing Partner Agency (IPA), ESCs, and representatives of provincial directorates of labor and social affairs. After determining the recipients of the grant, a three-member panel verified the information provided, and the grant agreement was signed. Finally, the full grant was transferred in one transaction to the grantees’ submitted bank account.

Regarding the endline, the evaluation teams started to interview individuals among those who participated at the baseline in June 2018 and closed in July 2018. The teams interviewed 3005 individuals. However, due to miscommunication between the Ministry of Labor and Social Affairs and the external teams, the external team did not record the ID numbers for some surveyed individuals in the endline which could match individuals of the endline with those in the baseline. To ensure that correct matching was implemented, we included only individuals whose ID number and national identity number were matched in the baseline and the endline data in the final analysis sample.

As a result, the final sample size was 2177 individuals (n=2177) in this study, with the number of the individuals in the treatment group (1146) slightly higher than that of the control group (1031) at the endline (Table 2), implying 38 % attrition rate.

**Table 2. The Number of Observations in Baseline and Endline.**

| Survey                      | (1) All | (2) Control | (3) Treatment |
|-----------------------------|--------|------------|--------------|
| Baseline data set (August 2016) (percent of the sample) | 3490   | 1745 50%   | 1745 50%     |
| Endline data set (June-July 2018) (percent of the sample) | 3005   | 1340 44.59%| 1665 55.41%  |
| Cleaned Data set (percent of the sample) | 2177   | 1031 47.38%| 1146 52.62%  |

Notes: For the endline data, due to administrative errors, the matching id that matches the endline data with the baseline data were lost due to miscommunication between the ministry of labor and social affairs and the data collecting company. As a result, the sample size of the cleaned data set, which matches the baseline data set with the endline data set is much smaller than the endline data set surveyed.

**Statistical Model**

As the PEYA program is a Randomized Control Trial (RCT)-Experiment, we estimate the effect of the policy by estimating the intent to treat (ITT) with the following analysis of covariates specification:

\[ Y_{i,A} = \beta_0 + \beta_1 Grant_i + \beta_2 Y_{i,B} + \alpha_i X_{i,B} + \epsilon_i \]  

where \( Y_{i,A} \) is the index of an individual, \( Y_{i,B} \) is the outcome variable in the endline period (e.g., monthly earnings in the last month) for individual i, \( Y_{i,B} \) is the outcome variable at the baseline of individual i, and \( Grant_i \) is the dummy variable which is equal to one if individual i received the grant and zero if not.

As discussed in the Experiment’s setting, the grant is randomized at each individual level. Thus, to calculate the standard error, we use the robust standard error. \( \beta_1 \) captures the impact of the cash grant; \( X_{i,B} \) is a set of control variables at baseline, which includes age group dummy, province dummy, years of schooling, and zero education dummy; and \( \epsilon_i \) refers to the individual error term. We estimate the above equation using ordinary least squares (OLS). In order to address the potential bias that can occur due to the high attrition rate, several robust bounding methods are applied in this study (Lee, 2009; Manski, 1990). Stata, a statistical software, is used for our analysis.

**Results**

**Balance test at baseline**

Table 3 shows the summary statistics of baseline variables and the balancing test of the sample used in the study analysis. Panel A shows that 72% of the individuals are male and approximately half of the sample are between age 18 and age 23. Of the 2177 participants, 42% were in 18-23 age group. Moreover, 54% of the participants were married at baseline. Approximately 47% of them were heads of the household at baseline.
Panel B shows the geographic distribution of the three provinces and their native language. The geographic distribution is evenly apportioned between the treatment and control groups. This panel shows that approximately 51% of the participants have stated Dari language as their mother tongue, 46% of them were Pashto native speakers, and 3% were minority language speakers (i.e., Turkemni, Uzbeki, and Pashai).

Panel C shows income-related information at the baseline. The results indicate that 92% of the individuals in our study were new to business, implying that they had not started their businesses yet at the baseline. Specifically, the average income in the last month at the baseline was approximately 4,000 Afs. The P-value of the joint significant test, which is 0.412, shows that our analysis sample was balanced.

Figure 2 shows the histogram of monthly income for those who had received cash grants and those who had not at baseline. According to estimates by the National Statistical Office in a 2016–2017 study, the poverty line threshold was 2,064 Afs per person per month (Islamic Republic of Afghanistan Central Statistics Organization, 2018). Thus, the average income in our study sample was two times higher than the income at the poverty line. However, as shown in Figure 2, a substantial percentage of the population had zero income. Figure 2 also shows that the distribution of income was quite similar between those who received cash grants and those who did not.

### Table 3. Summary Statistics of Baseline Variables and Balancing Tests.

| Variable | (1) No Grant | (2) Receiving Grant | (3) Difference | (4) p-value |
|----------|--------------|---------------------|----------------|-------------|
| Years of schooling | 2.501 | 2.588 | -0.087 | 0.440 |
| No Education | 0.445 | 0.426 | 0.019 | 0.363 |
| Male | 0.724 | 0.712 | 0.012 | 0.551 |
| Married | 0.555 | 0.531 | 0.023 | 0.274 |
| Household size | 7.474 | 7.727 | -0.253** | 0.049** |
| Head of Household | 0.462 | 0.470 | -0.009 | 0.687 |
| Aged 18–23 | 0.427 | 0.471 | -0.044** | 0.037** |
| Aged 24–29 | 0.308 | 0.281 | 0.027 | 0.161 |
| Aged 30–35 | 0.265 | 0.248 | 0.017 | 0.366 |
| Balkh (Dummy) | 0.317 | 0.340 | -0.023 | 0.251 |
| Kabul (Dummy) | 0.372 | 0.352 | 0.021 | 0.314 |
| Nangarhar (Dummy) | 0.310 | 0.308 | 0.002 | 0.906 |
| Pashu Speaker | 0.465 | 0.456 | 0.008 | 0.701 |
| Dari/Persian Speaker | 0.502 | 0.513 | -0.011 | 0.619 |
| Other Language | 0.032 | 0.029 | 0.003 | 0.664 |
| New to business | 0.919 | 0.922 | -0.004 | 0.743 |
| Monthly Earning in Afs. | 4015.2 | 3925.1 | 90.1 | 0.606 |
| No earning in last month | 0.339 | 0.341 | -0.003 | 0.895 |
| Main Occupation is agricultural | 0.017 | 0.022 | -0.004 | 0.463 |
| Number of plots | 0.581 | 0.717 | -0.136 | 0.224 |
| Own the House | 0.725 | 0.754 | -0.029 | 0.119 |
| Main Occupation is non-agricultural | 0.983 | 0.978 | 0.004 | 0.463 |
| Livestock and animals | 0.325 | 0.344 | -0.019 | 0.351 |

Notes. The total sample size is 2177. The sample size of the male sample is 1562 and the sample size of the female sample is 615. All variables are from the baseline survey. The joint significant test regressing the treatment dummy on baseline covariates and then testing the estimated coefficients are all equal to zero. For regressing the treatment dummy on baseline covariates, we eliminated age 30–35 dummy, Nanghar dummy, and other language dummy due to multi-collinearity. *** p<0.01, ** p<0.05, * p<0.1.

Figure 3 (a) and 3(b) display the histogram of monthly earnings for the male and the female groups, respectively. Figure 3(a) and 3(b) show that the distributions of earnings for the male sample and the female sample are quite different. For example, for males, less than 20% of the male sample have zero earnings. However, for females, more than 70% of the female sample have zero earnings.
Table 4 shows the mean and balancing test of the key variables in the male group. About 42% of this group were without education, and 57% were married. The average monthly income for this group was 5130 Afs, although 17% were without income.

Table 5 shows the mean and balancing test of the key variables in the female group. About 47% of this group were without education, and 48% were married. The average monthly earnings of this group was 5130 Afs; however, 76% were without income.
Table 7 displays the index of different types of assets between the control and treatment groups. These assets were divided into Group 1: productive durable, including animal ownership, and local transportation equipment (e.g., a cart, three-wheel/truck,
and bike), and Group 2: consumer durable, including household goods (e.g., home appliances and mobile phones. To construct household asset-related indices, the values of each variable were standardized to ensure that the value of each variable represents its difference from the mean. Then, the variables are compiled into indices using factor analysis.

In our analysis sample, according to Table 7, the p-value of the joint significant test is 0.49, and it shows that the mean was balanced between the control and treatment groups.

Despite the high attrition rate, overall, the balancing tests of Table 3–Table 7 show that the balance between the treatment and control groups was maintained in the analysis sample.

The Effect of Receiving Grant and Mentorship

In Table 8, column 1 shows the effectiveness of receiving cash grants on monthly earnings on the entire group. These results show that receiving cash grants increased the treatment group’s monthly earnings by approximately 4000 Afs. As such, the increased annual income will be 48,000 Afs, which is more than the amount of the grant that an individual in the treatment group received. Considering the 33,500 Afs cash grant, the percentage of the increased annual income to the amount of the cash grant would therefore be:

\[(48000/33500) \times 100 = 143\%\].

Table 7. Summary Statistics of Assets at Baseline and Balancing Tests.

| Variables                        | (1) No Grant | (2) Receiving Grant | (3) Difference | (4) p-value |
|----------------------------------|--------------|---------------------|----------------|-------------|
| Number of plots                  | -0.027       | 0.024               | -0.052         | 0.230       |
| Bicycles                         | -0.012       | 0.011               | -0.023         | 0.592       |
| Carts                            | 0.006        | -0.005              | 0.011          | 0.800       |
| Motor bikes                      | 0.009        | -0.008              | 0.017          | 0.687       |
| Cars                             | 0.031        | -0.028              | 0.059          | 0.169       |
| Trucks/3wheels                   | 0.004        | -0.004              | 0.008          | 0.851       |
| Tractors                         | 0.013        | -0.011              | 0.024          | 0.573       |
| Simple mobiles                   | -0.013       | 0.012               | -0.025         | 0.562       |
| Simple mobiles of the respondent | -0.019       | 0.017               | -0.037         | 0.391       |
| Smart phones/android              | 0.018        | -0.016              | 0.035          | 0.421       |
| Smart phones/android of the respondent | 0.012      | -0.011              | 0.023          | 0.587       |
| Radio                            | -0.026       | 0.023               | -0.049         | 0.253       |
| TVs                              | 0.018        | -0.017              | 0.035          | 0.414       |
| Dish Antennas/Satellite          | 0.007        | -0.006              | 0.012          | 0.773       |
| Fridges                          | -0.026       | 0.024               | -0.050         | 0.246       |
| Computers                        | -0.023       | 0.021               | -0.044         | 0.311       |
| Computers with internet access   | -0.010       | 0.009               | -0.018         | 0.672       |
| Cows                             | 0.016        | -0.014              | 0.030          | 0.489       |
| Oxen/buffalos                    | -0.009       | 0.008               | -0.017         | 0.693       |
| Sheep                            | -0.002       | 0.001               | -0.003         | 0.941       |
| Goats                            | -0.035       | 0.032               | -0.067         | 0.121       |
| Donkeys                          | 0.021        | -0.019              | 0.040          | 0.349       |
| Horses                           | -0.014       | 0.013               | -0.027         | 0.532       |
| Chickens/Turkeys                 | 0.006        | -0.005              | 0.011          | 0.792       |
| p-value of the joint significant test | 0.49        |                     |                |             |

Table 8. The Effect of Receiving Cash Grant on Monthly Earnings.

| Dependent Variable | (1) (2) (3) (4) (5) (6) |
|--------------------|------------------------|
| Sample Variable    | All Male Female All Male Female |
| Cash Grant         | 3,950*** (567.5) 4,839*** (766.6) 1,939*** (289.7) 4,155*** (593.4) 5,005*** (820.5) 2,075*** (335.8) |
| Mentorship         | -394.3 (944.7) -225.9 (1,302) -918.0 (607.6) |
| Control Variables  | Yes Yes Yes |
| N                  | 2,177 1,562 615 2,177 1,562 615 |
| R-squared          | 0.020 0.023 0.064 0.105 0.080 0.125 |

Notes: Robust standard errors in parentheses. OLS estimation is applied.Control variables are: the receipt of mentorship dummy, monthly earnings at the baseline, years of schooling, no education dummy, gender dummy (full sample), marital status, household size, head of household dummy, age group dummies, province dummies, language dummies, new to business dummies, zero earnings dummy, number of plots, the house ownership dummy, non-agricultural business dummy, having animal livestock dummy. All control variables are from the baseline information. The estimated coefficients of control variables are shown in Table S1 of Extended Data. ***(p<0.01), **(p<0.05), *(p<0.1)
Thus, in either of three cases, if the state of increased income continues for the next few years, the sum of increased income will be more than the sum of the administration cost, the interest cost and the amount of cash grant given. It implies that the project passes the standard criteria to determine the appropriateness of government program.

In columns 4 – 6, we added several important covariates and checked whether our estimated coefficients were sensitive to the inclusion of those control variables. These columns indicate that the estimated coefficients of the grant variable reported in columns 1 – 3 are not sensitive to the inclusion of various control variables (Extended data) (Kashefi & Naito, 2021b). Additionally, the results in Table 8 show that providing mentorship did not have an effect on increasing the monthly earnings.

As mentioned previously, the endline study sample size was much smaller than that of the baseline due to the administrative error during the data collection. One concern was whether such attrition of the sample affects the estimated coefficients. Therefore, we controlled for the attrition by applying the inverse probability weighted (IPW) estimation (Wooldridge, 2002; Wooldridge, 2010) (Table 9, Panel A). To calculate the standard error correctly, we use the Generalized Moment Method estimation (GMM) with IPW.

In Table 9, column 1 of Panel A shows the estimation results of applying IPW to the full sample. It shows that the effect of receiving the cash grant on monthly earnings was 3984 Af's, which was quite similar to the estimated coefficient in column 4 of Table 8 (i.e., 4036 Af's). Column 2 displays the estimated coefficient using IPW for the male group. The estimated coefficient was 4876 Af's, similar to the estimated coefficient displayed in column 5 of Table 8 (i.e., 4984 Af's). Column 3 of Panel A presents the estimated coefficient for the female group by using IPW. The estimated coefficient is 2062, which is close to the estimated coefficient in column 6 of Table 8 (i.e., 2070 Af's). Panel A shows that, when attrition is controlled by IPW estimation, the estimated coefficients of the cash grant were similar to the estimated coefficients obtained in the OLS estimation presented in Table 8.

In Table 9, Panel B, we estimated bounding treatment effects. As demonstrated by Manski (1990), Karlan and Valdivia (2011), and Blattman et al. (2014), we first imputed the outcome variable for the unfound sample by assuming that the monthly earnings of unfound treatment group members were equal to the average monthly earnings of the found treatment group minus 0.25 standard deviation of the monthly earnings of the found members. We also assumed that the monthly earnings of the unfound control group was the average monthly earnings of the found control group plus 0.25 standard deviation of the found members. After this imputation, we estimated the effects of the cash grant and other covariates using both the found and unfound samples. With this assumption, we found that receiving the cash grant increased the monthly income by 2000 Af's and 1200 Af's for the male and female groups, respectively. Thus, the cash grant is likely to have increased the monthly earnings.

To further correct for attrition bias, Lee’s treatment effect bounds for receiving the cash grant on monthly earnings was estimated (Table 9, Panel C) (Lee, 2009). The lower bound of the effect of receiving the cash grant was 2328 Af's and 1637 Af's for the male and female groups, respectively. The OLS estimates were between the lower and upper bounds for each specification and the lower bounds, 2328 Af's and 1637 Af's for the male and female groups were statistically different from zero. Thus, even at the conservative estimates, the percentage of the increased annual income to the amount of the cash grant would be 83 % for the male group and 58 % for the female group.

Overall, analysis based on several estimation methods demonstrates that the effect of receiving the cash grant on monthly earnings was economically and statistically significant.

Table 10 shows the effect of the cash grant on having an officially registered business, labor supply and asset levels. In this table, Panel A displays the effect of the cash grant on the probability of having an officially registered business. Column 1 of Panel A shows that an individual who received the cash grant had an 8 percentage point higher probability of having an officially registered business on average. Column 2 and column 3 show that a male individual and a female individual who received the cash grant have a 7 percentage point and a

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**Table 9. Robustness Checks by Controlling Attrition. The Effect of Receiving Cash Grant on Monthly Income.**

| Dependent Variable | (1) | (2) | (3) |
|--------------------|-----|-----|-----|
| Monthly Earnings in Af's |     |     |     |
| **Sample** | All | Male | Female |
| A. Inverse Probability Weighted Estimation with Sample Selection |     |     |     |
| Cash Grant | 3.984*** (589.6) | 4.876*** (798.4) | 2.962*** (327.3) |
| Mentorship | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes |
| N | 3,490 | 2,450 | 1,040 |
| B. Bounds based on Imputation |     |     |     |
| Cash Grant | 1.366*** (394.7) | 2.016*** (551.5) | 1.230*** (213.5) |
| Mentorship | Yes | Yes | Yes |
| Control Variables | Yes | Yes | Yes |
| N | 3,490 | 2,450 | 1,040 |
| C. Lee Bounds |     |     |     |
| Lower bound | 2.137* (1,186) | 2.328* (1,407) | 1.637* (934.9) |
| Upper bound | 4.891*** (1,168) | 5.761*** (1,233) | 2.614*** (679.1) |
| N | 3,490 | 2,450 | 1,040 |

Notes: Robust standard errors in parentheses. Control variables are the same as the ones used in Table 8. *** p<0.01, ** p<0.05, * p<0.1.
9 percentage point higher probability of having an officially registered business, respectively. As shown in columns 4–6, we added several important covariates as control variables. The columns also show that the estimated coefficients of the treatment dummy were similar to the estimated coefficient in columns 1–3.

Table 10. Effect of Cash Grant on Business, Employment and Asset Levels.

| Sample | (1) All | (2) Male | (3) Female | (4) All | (5) Male | (6) Female |
|--------|--------|---------|----------|--------|---------|----------|
| **Panel A.** | | | | | | |
| Dependent Variable | Having an Officially Registered Business (Endline) | | | | | |
| Cash Grant | 0.0769*** (0.0169) | 0.0702*** (0.0206) | 0.0943*** (0.0284) | 0.0768*** (0.0180) | 0.0695*** (0.0220) | 0.0972*** (0.0313) |
| Mentorship | 0.00435 (0.0369) | 0.00925 (0.0445) | -0.00760 (0.0674) | | | |
| R-squared | 0.012 | 0.012 | 0.018 | 0.034 | 0.036 | 0.054 |
| **Panel B.** | | | | | | |
| Dependent Variable | Number of Household Members Working for the Enterprise (Endline) | | | | | |
| Cash Grant | 0.201*** (0.0278) | 0.180*** (0.0311) | 0.254*** (0.0582) | 0.194*** (0.0308) | 0.191*** (0.0356) | 0.193*** (0.0600) |
| Mentorship | 0.0113 (0.0726) | -0.0640 (0.0639) | 0.185 (0.193) | | | |
| R-squared | 0.022 | 0.020 | 0.028 | 0.040 | 0.039 | 0.091 |
| **Panel C.** | | | | | | |
| Dependent Variable | Number of Non-household Members Working for the Enterprise (Endline) | | | | | |
| Cash Grant | 0.232*** (0.0519) | 0.232*** (0.0504) | 0.229* (0.132) | 0.224*** (0.0551) | 0.248*** (0.0533) | 0.202 (0.131) |
| Mentorship | 0.0450 (0.0913) | -0.0242 (0.0993) | 0.175 (0.198) | | | |
| R-squared | 0.009 | 0.013 | 0.005 | 0.037 | 0.062 | 0.039 |
| **Panel D.** | | | | | | |
| Dependent Variable | Index of Household Assets for Production (Endline) | | | | | |
| Cash Grant | 0.142*** (0.0427) | 0.176*** (0.0558) | 0.0626 (0.0522) | 0.143*** (0.0425) | 0.167*** (0.0555) | 0.0735 (0.0490) |
| Mentorship | -0.0763 (0.0578) | -0.0778 (0.0744) | -0.0923 (0.0810) | | | |
| R-squared | 0.005 | 0.006 | 0.003 | 0.166 | 0.182 | 0.056 |
| **Panel E.** | | | | | | |
| Dependent Variable | Index of Household Assets for Consumption (Endline) | | | | | |
| Cash Grant | 0.0686 (0.0426) | 0.100** (0.0490) | -0.0210 (0.0840) | 0.0509 (0.0408) | 0.0935* (0.0481) | -0.0722 (0.0779) |
| Mentorship | 0.0300 (0.0613) | 0.00544 (0.0688) | 0.0843 (0.128) | | | |
| R-squared | 0.001 | 0.003 | 0.000 | 0.254 | 0.232 | 0.331 |

Sample Size and Inclusion of Control Variables

| Control Variables | Yes | Yes | Yes |
|-------------------|-----|-----|-----|
| N                 | 2,177 | 1,562 | 615 |

Notes: Robust standard errors in parentheses. OLS estimation is applied. Control variables are, the receipt of mentorship dummy, the outcome variable at the baseline, years of schooling, no education dummy, gender dummy (full sample), marital status, household size, head of household dummy, age group dummies, province dummies, language dummies, new to business dummies, zero earnings dummy, number of plots, the house ownership dummy, non-agricultural business dummy, having animal livestock dummy. All control variables are from the baseline information. The estimated coefficients of control variables are shown in Table S2-S5 of Extended Data. *** p<0.01, ** p<0.05, * p<0.1
Panel B shows the effect of the cash grant on the number of household members working for a micro-enterprise. Panel B shows that an individual who received the cash grant increased the number of household members working for their micro-enterprise by 0.2 persons on average. Column 2 of Panel A, a male individual who received the cash grant increased the number of family members working for their microenterprise by 0.18 persons on average. Column 3 shows that a female individual who received the cash grant increased the number of family members working for their micro-enterprise by 0.254 persons on average.

Panel C shows the effect of the cash grant on the number of non-household members working for a micro-enterprise. Column 1 shows an individual who received the cash grant increased the number of non-family members who work for their micro-enterprise by 0.23 persons. Column 2 shows that, for the male group who had received the cash grant, the employment number of non-family members increased by 0.232 persons. The results in column 3 show that, for the female group who had received the cash grant, the number of non-family members who were employed for their microenterprise increased by 0.229 persons.

When starting or extending a business, additional equipment, such as a phone, a truck, and a cart, might be needed. Panel D shows the effect of receiving cash grants on the general asset index for production. To calculate the general asset index for production, we first standardized the level of each asset for production. Then, through the principal component analysis, we determined the weight for each asset and calculated the weighted index (Jolliffe, 2005). As shown in columns 2 and 3, we find that, for the male group, receiving the cash grant increased standard deviations of the index of assets for production by 0.176, and for the female group, by 0.062. When the control variables were included, the cash grant increased the index of assets for production by 0.167 standard deviation for the male group and by 0.074 standard deviation for the female group (columns 5 and 6).

Results in Panel E display the index of assets for consumption. Columns 2 and 3 show that receiving the cash grant increased the index of assets for consumption by 0.1 standard deviation for the male group, and decreased it by 0.02 standard deviation for the female group. When the control variables were included in the estimation, the estimated coefficient and statistical significance did not change. Columns 5 and 6 show that the cash grant increased the index of assets for consumption for the male group by 0.094 standard deviation and decreased it by 0.073 standard deviation for the female group. Thus, for the male group, receiving the cash grant increased the index of assets for consumption. However, our results do not reflect the same for the female group.

| Table 11. Effect of Cash Grant on Level of Different Types of Assets at Endline. |
|---------------------------------------------------------------|
| **Sample** | **(1) All** | **(2) Male** | **(3) Female** | **(4) All** | **(5) Male** | **(6) Female** |
| **Panel A.** | **Dependent Variable** | **z-score of Bicycle (Endline)** | | | | |
| Cash Grant | | 0.0758* | (0.0425) | 0.0822* | (0.0460) | 0.0600 | (0.0939) | 0.0522 | (0.0449) | 0.0542 | (0.0472) | 0.0587 | (0.112) |
| **Panel B.** | **Dependent Variable** | **z-score of Cart (Endline)** | | | | |
| Cash Grant | | 0.164*** | (0.0425) | 0.181*** | (0.0480) | 0.129 | (0.0863) | 0.144*** | (0.0449) | 0.143*** | (0.0500) | 0.142 | (0.0912) |
| **Panel C.** | **Dependent Variable** | **z-score Three Wheel Truck (Endline)** | | | | |
| Cash Grant | | 0.0506 | (0.0430) | 0.0971*** | (0.0373) | -0.0672 | (0.120) | 0.0462 | (0.0470) | 0.0949** | (0.0418) | -0.0275 | (0.122) |
| **Panel D** | **Dependent Variable** | **z-score Simple Mobile Phone (Endline)** | | | | |
| Cash Grant | | 0.148*** | (0.0424) | 0.175*** | (0.0489) | 0.0782 | (0.0846) | 0.150*** | (0.0431) | 0.170*** | (0.0509) | 0.0917 | (0.0792) |

Table 11 shows the effect of receiving the cash grant on the levels of different types of assets. The results in this table show that, for the male group, receiving the cash grant increased the level of assets, e.g., bicycles, carts, three-wheel trucks, mobile phones, and cows. Conversely, the number of cows was the only asset that increased after receiving the cash grant in the female group.
Discussion

Islamic Republic of Afghanistan ended on August 15, 2021 (Wall Street Journal, 2021). The fact that there was not so much resistance to Taliban may indicate that all of the efforts by western societies for development might not have worked well (BBC, 2021). Several official documents by the western governments state that development aids to enhance enterprise activities in Afghanistan failed due to bad implementation of the programs (Special Inspector General for Afghanistan Reconstruction, 2018; Special Inspector General for Afghanistan Reconstruction, 2021).

In contrast, the results of this study have shown that the effect of a non-trivial cash grant on income is substantial in Afghanistan. The percentage of increased annual income to the size of this cash grant almost two years after receipt of the cash grant was approximately 173% for males and 69% for females. The treatment group had a 7 percentage point higher probability of having an officially registered business than the control group. The treatment group also increased labor supply and employed additional workers, compared to the control group. The male treatment group bought more capital equipment (e.g., trike and commercial carts) than the male control group, while the female treatment group bought more domestic animals. Our results are consistent with the previous studies in other countries which similarly show a positive effect of cash grants on income (Blattman et al., 2014; Blattman et al., 2020; De Mel et al., 2008; De Mel, 2012; Fafchamps et al., 2014; Haushofer & Shapiro, 2016; McKenzie, 2017). However, our estimated coefficient is higher than the estimated coefficients in the previous literature.

We would like to emphasize, however, that this study had some limitations. First, the endline survey was conducted almost two years after the study. Thus, the short-term effect of cash grants was measured. Blattman et al. (2020), which studied the long-term effects of grants on poverty, have shown that cash grants are ineffective after 9 years. Thus, it is possible that the strong effect of the cash grant seen in this study might be less significant in the long term. Second, this PEY A program focuses on microenterprises, not small- or medium-sized enterprises. Those two factors might explain the difference between our results and the assessment of several official documents of the aid programs in Afghanistan. Third, as emphasized in the introduction, Afghanistan is a country with fragile security; thus, the strong effect might be due to this situation. For example, it is possible that, due to the security situation of the country, many existing businesses were destroyed. As a result, when individuals start businesses with cash grants, there might not be so much competition in the existing markets. If this is the reason for the high return from the cash grants, the applicability of our results can be limited to countries whose security situation is very weak.

As we discussed in the introduction, initially we had a concern that giving cash grants may not enhance economic activities in Afghanistan due to negative perception toward women’s business and the prevalence of corruption. First, our estimation results show that although the effect of the cash grant on female individuals is lower than the effect of the grant on male individuals, the effect on earnings of female individuals is strong enough to justify the cash grant. Second, despite the prevalence of corruption in Afghanistan, the effect of the cash grant is strong. One possible reason for the effectiveness of this program might be through the transparency of the selection of the recipients of the cash grants. For choosing the recipients of the cash grant, the project paid special attention to the lottery process so that they were determined randomly. This implies that although

### Table 1: Summary Statistics

| Sample | (1) All | (2) Male | (3) Female | (4) All | (5) Male | (6) Female |
|--------|--------|----------|------------|--------|----------|------------|
| Dependent Variable | z-score Refrigerator (Endline) | z-score of Cows (Endline) |
| Cash Grant | 0.0958*** (0.0421) | 0.139*** (0.0521) | -0.0167 (0.0689) | 0.0835*** (0.0416) | 0.133*** (0.0525) | -0.0423 (0.0653) |
| Panel F. | | | |
| Dependent Variable | z-score of Cows (Endline) |
| Cash Grant | 0.422*** (0.0410) | 0.426*** (0.0514) | 0.439*** (0.0626) | 0.409*** (0.0415) | 0.389*** (0.0521) | 0.450*** (0.0633) |
| Control Variables | Yes | Yes | Yes |
| N | 2,177 | 1,562 | 615 | 2,177 | 1,562 | 615 |

Notes. Robust standard errors in parentheses. OLS estimation is applied. Control variables are, the receipt of mentorship dummy, the outcome variable at the baseline, years of schooling, no education dummy, gender dummy (full sample), marital status, household size, head of household dummy, age-group dummies, province dummies, language dummies, new to business dummies, zero earnings dummy, number of plots, the house ownership dummy, non-agricultural business dummy, having animal livestock dummy. All control variables are from the baseline information. *** p<0.01, ** p<0.05, * p<0.1.
the lottery process prevents the project from choosing the best candidates, it also prevents the project from choosing corrupted, incapable individuals, which often happen in the government contracts in Afghanistan (Special Inspector General for Afghanistan Reconstruction, 2018; Special Inspector General for Afghanistan Reconstruction, 2021). This indicates that random selection might be effective in countries with high corruption rates.

Fourth, in this experiment, the receipt of the cash grant is randomized at each individual level instead of each village level. This implies that if there is a positive (negative) externality of the cash grant and if treatment individuals and control individuals tended to live in the same village, the effect of the cash grant is underestimated (overestimated). In our context, a positive externality is likely if the recipient of the cash grant starts a new business, employs other individuals and increases the income of other individuals as well as his/her own income. A negative externality is likely if the recipient of the cash grant starts a new business and a new entry to an existing market decreases the profit of the control individuals. In other studies, using GPS information of each individual, we examined how the distance of each individual to the nearest treatment individual affects the estimated coefficient of the cash grant dummy. We found that there is no systematic correlation between the distance and the estimated size of the coefficient of the cash grant dummy. This suggests that it is unlikely that the experimental design that uses individual level randomization induce a systematic bias.

According to International Monetary Fund (IMF), the lending interest rate in Afghanistan in 2016 was 15% (International Monetary Fund, 2018). Given the high percentage of increased income to the amount of the cash grant and the relatively low lending interest rate, it is questionable as to why individuals do not borrow money for business investments. Plausible explanations could be capital constraints and/or limited risk-sharing. Finding the correct mechanism is important because policy implications depend on the correct mechanism and the different mechanisms imply different policy implications. For example, if the lack of a risk-sharing mechanism is the source of the strong effect of the cash grant, then a policy that enhances risk-sharing of income of business activities such as progressive taxation on income with subsidy on business investment is likely to enhance the welfare. If the underlying mechanism is the inaccessibility to capital, then a policy that makes capital more available such as public lending will improve the welfare. Future studies are needed to examine the underlying mechanisms.

Conclusions
Non-trivial cash grants had a substantial effect on the monthly earnings of the treatment group two years after this study. The percentage of increased annual income to the size of this cash grant two years after the Experiment is approximately 173% for males and 69% for females. We did not find evidence that receiving mentorship on business increases monthly earnings. The results could indicate that the cash grant is useful tool to increase income in a country that suffers from a lack of security, a high level of corruption, a low level of literacy, and gender inequalities.

It is still not clear as to why receiving a large amount of cash grant has such a significant effect on the monthly earnings. To investigate, further longitudinal studies are needed to not only confirm the results of this study but to utilise quantitative and qualitative strategies to assess how such a large cash grants can affect the economy of a household.

Data availability

Underlying data
Open Science Framework (OSF) : The effect of receiving cash grant on income in Afghanistan
DOI 10.17605/OSF.IO/SRFTN

This project contains the following data:
- Questionnaire_cash_grant_afghanistan.pdf. Survey questionnaires
- Summary_stat1.do: Stata file for summary statistics
- f1000_regression.do: Stata file for regression analysis
- f1000_sample_selection_model.do: Stata file for Generalized Moment Method with Inverse Probability Weighted estimation and bounding estimation
- CONSORT 2010 Checklist.doc: CONSORT check list for our paper

The above data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication)

The RCT dataset used in this study is owned by the World Bank Group. This RCT dataset can be requested to the World Bank group (infoafghanistan@worldbank.org).

The findings, interpretations, and conclusions expressed in this article are entirely those of the authors and should not be attributed in any manner to the World Bank, to its affiliated organizations, or to members of its Board of Executive Directors, or the countries they represent. The World Bank does not guarantee the accuracy of the data included in this publication and accepts no responsibility for any consequence.

Extended data
Open Science Framework (OSF): The effect of receiving cash grant on income in Afghanistan:Extended Data
DOI 10.17605/OSF.IO/GRY2W
Additional regression results

The above extended data are available under the terms of the Creative Commons Zero “No rights reserved” data waiver (CC0 1.0 Public domain dedication)

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Authors added a more comprehensive literature review on the impact of cash grants and provided recommendations.

The research is interesting and timely; it relates in a coherent and cogent way to issues of real-world significance. The authors evaluated the effect of implementing a government program and conducted research on how the prevalence of informal microenterprises can be transformed into an opportunity for income and employment growth.

In Afghanistan, where a quarter of the population is unemployed and more than half of the population lives below the poverty line, the government implemented a program that helped establish new microenterprises by providing a cash grant. The authors make an original contribution to knowledge by investigating the effect of cash grants on income growth in the context of Afghanistan.

The uniqueness of this research is that it focuses on a country that suffers from a lack of security, a high level of corruption, a low level of literacy, and gender inequalities. Afghanistan is an Islamic country with rigid social norms and a high female unemployment rate due to a negative attitude toward women empowerment and a lack of support for women in business. Nevertheless, research found that cash grant has a strong positive effect on the earnings of the recipients. However, this research found that the increase in annual income was 2.5 times higher for males than females.

The article demonstrates the applicability, relevance, and effectiveness of the program and will be useful for other fragile or war-torn countries that need reconstruction. Also, receiving a cash grant, which does not involve the repayment of principal and interest, would be effective in Islamic countries.

Conclusions are clear and insightful, as they are drawn from the data,
Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

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The article could be enriched by a literature review of previous research on the effect of cash grants in other countries and a discussion on culture-specific differences in gender roles at home and in the business in Afghanistan.

The article demonstrates the applicability, relevance, and effectiveness of the program and will be useful for other fragile or war-torn countries that need reconstruction. Also, receiving a cash grant, which does not involve the repayment of principal and interest, would be effective in Islamic countries.

Conclusions are clear and insightful, as they are drawn from the data, but could be expanded by
recommendations. Minor proofreading and check results by qualified statisticians are suggested.

**Is the work clearly and accurately presented and does it cite the current literature?**
Yes

**Is the study design appropriate and is the work technically sound?**
Yes

**Are sufficient details of methods and analysis provided to allow replication by others?**
Yes

**If applicable, is the statistical analysis and its interpretation appropriate?**
I cannot comment. A qualified statistician is required.

**Are all the source data underlying the results available to ensure full reproducibility?**
No source data required

**Are the conclusions drawn adequately supported by the results?**
Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Cross-cultural differences, education, oil and gas industry, sustainability.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

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**Author Response 10 Mar 2023**

**Hisahiro Naito**

Reply to the second referee

Thank you for reading our manuscript and providing constructive comments.

**Comment 1:** "The article could be enriched by a literature review of previous research on the effect of cash grants in other countries and a discussion on culture-specific differences in gender roles at home and in the business in Afghanistan."

**Reply:** On page 3, we added a section regarding the literature on the effect of cash grants and provided a comprehensive literature survey. Furthermore, on page 2, we discuss culture-specific differences in gender roles at home and in business in Afghanistan. We hope that our literature survey and discussion on the role of culture in women’s lives are satisfactory.

**Comment 2:** "Conclusions are clear and insightful, as they are drawn from the data, but could
be expanded by recommendations. Minor proofreading and check results by qualified statisticians are suggested."

Reply: We provide some recommendations in the Conclusion section. More specifically, we wrote, “The results could indicate that the cash grant is a useful tool to increase income in a country that suffers from a lack of security, a high level of corruption, a low level of literacy, and gender inequalities.” We also asked a professional company to proofread our revised manuscript. The research field of one of the authors is applied econometrics. In the past, Naito conducted theoretical research on econometrics and published a paper. He checked the econometric aspects of this paper thoroughly.

Competing Interests: No competing interests were disclosed.

Ellina Samantroy Jena
V.V. Giri National Labour Institute, New Delhi, India

The paper is based on an interesting issue pertaining to economic empowerment through micro enterprises. The gender inequalities in terms of access to income was apparent in case of women. The paper would have benefitted more from literature highlighting the gendered constraints of women. The paper has highlighted that the percentage of annual income to the size of cash grant was greater for males in comparison to females. The reason for this could have provided a fresh insight into the study, for example women's access to resources, finances etc. and the challenges they face.

The paper definitely raises certain questions that need more in depth research in future. On the whole, the paper is based on a very important topic and may be considered for indexing after checking the statistical part from trained statisticians.

As the authors have clearly indicated that further studies on qualitative aspects are required. I would suggest to explore the qualitative aspects with a focus on gender dimensions particularly contextualizing women in fragile contexts may be in another paper in future.

Is the work clearly and accurately presented and does it cite the current literature? Yes

Is the study design appropriate and is the work technically sound?
Yes

Are sufficient details of methods and analysis provided to allow replication by others?
Yes

If applicable, is the statistical analysis and its interpretation appropriate?
I cannot comment. A qualified statistician is required.

Are all the source data underlying the results available to ensure full reproducibility?
No source data required

Are the conclusions drawn adequately supported by the results?
Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** gender and labour market research, unpaid work, time use studies, gender, labour laws and international labour standards

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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**Author Response 10 Mar 2023**

**Hisahiro Naito**

Reply to the first referee

Thank you for reading our manuscript, approving it, and giving constructive comments. As you suggested, in our future research, we are planning to explore the points you suggested, that is, the qualitative aspect of gender in Afghanistan.

Thank you.

**Competing Interests:** No competing interests were disclosed.
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