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EFFECTS OF COVID-19 PANDEMIC ON THE RURAL NON-FARM SELF-EMPLOYED IN INDIA: DOES SKILL MAKE A DIFFERENCE?

Indrajit Bairagya[1]

Abstract

The study examines the importance of skills, especially through vocational training, for the rural non-farm sector in overcoming the disruptions caused by the Covid-19 pandemic. We have used the difference-in-differences technique to assess the differential impact of the Covid-19 pandemic on the earnings of skilled and unskilled self-employed activities. The primary data has been collected from 880 rural non-farm self-employed (RNFS) individuals spread over different regions of Karnataka. Although every section of the rural non-farm activities has been adversely affected due to the pandemic, the impact is more severe on unskilled individuals as compared to skilled individuals. A difference-in-differences analysis across different income quantiles shows that imparting skill through formal vocational training is critical to every section of the RNFS. Even though skill plays an important role in promoting RNFS businesses, a large number of self-employed individuals do not show an inclination to participate in formal vocational training programmes. Therefore, policymakers need to pay attention to enhancing the provision of formal vocational training for rural non-farm self-employed individuals on a grander scale.

Key Words: Covid-19 pandemic, Rural non-farm self-employment, Skill, Vocational Training and Education

Introduction

The Covid-19 pandemic, since its outbreak in March 2020, has unleashed massive demand-and supply-side shocks across different economies the world over. In view of measures like travel restrictions and quarantine procedures, the availability and productivity of labour substantially plummeted during the lockdown period and thereafter. This, in turn, led to a widespread increase in unemployment at unprecedented rates. India has been one of the most affected nations going by the scale and period of intense restrictions placed on the population. However, the employment crisis in India started much before the spread of the Covid-19 pandemic. A substantial slowdown observed in employment generation during the last one and a half decades has come to dominate the discourse focused on the current Indian economic scenario across polity and academia. Even an employment downturn has been observed, despite the economy witnessing nearly a 10 per cent growth in the GDP in the latter half of the last decade. Since output growth could not ensure employment growth, the economy has moved from a situation of job-less growth to job-loss growth (Kannan & Raveendran, 2019). Now, the Covid-19 pandemic has further accentuated the existing employment crisis relentlessly. Not only has it increased the unemployment rate, but it also has reduced work intensity and earnings substantially of those continuing work (ActionAid Association (India), 2020). This has been particularly hurtful, considering the significant share of informal workers in the total workforce in India (i.e., about 93 per cent, including

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informal sector workers and informal workers in the formal sector), who continue to remain unprotected, to a large extent, by proper social security measures. Moreover, according to the Periodic Labour Force Survey for 2017-18 (PLFS, 2019), about 52 per cent of the workforce are classified as self-employed in India. In fact, a majority of them are own-account workers or unpaid family members, the most vulnerable section among the informal workers.

Studies specific to developing countries [Zambia (Mathew *et al*, 2020) and India (Dasgupta and Murali, 2020)] and developed countries [Canada (Lemieux *et al*, 2020), US (Kalenkoski and Pabilonia, 2020), UK (Blundell and Machin, 2020) and Japan (Kikuchi *et al*, 2020)] have shown that those engaged in self-employment activities are one of the worst affected sections, particularly in the context of the pandemic. They have lost their earnings and working hours, and in many cases, suffered permanent loss of employment.

The surveys conducted by various institutions in India, soon after the first wave of the pandemic, have portrayed a similar picture. CMIE data shows that in the initial period (April 2020), the casual and self-employed workers made up the majority who lost their employment. Moreover, according to the survey conducted by the Stranded Workers Action Network (SWAN) (2020), about 97 per cent of the self-employed had gone without any form of income in the initial months of lockdown. The survey conducted by the Azim Premji University (2020) shows that though self-employed persons were less likely to be unemployed in rural areas, as compared to other sections, their earnings had fallen by 86 per cent during the lockdown period. In Karnataka, there was a decline observed in the average weekly earnings of self-employed persons in the non-farm sector to the extent of about 67 per cent. In India, the non-farm self-employed section, mainly involved in trade and accommodation services, manufacturing and transport, storage and communication services, has been observed the most affected by the pandemic.

Along with the sector of employment, the educational level of persons also plays an important role when it comes to the effects of Covid-19. It is seen that most of the casual and self-employed workers are uneducated or less educated. This increases their chances of being more vulnerable to such crisis conditions (Kapoor, 2020). While there are only limited studies dealing with the impact of skills in overcoming crisis situations with a specific reference to India, studies from other countries point to a disparity in outcomes from economic shocks between skilled and unskilled labourers. In general, the less skilled labourers are observed to be more vulnerable to crisis situations and, therefore, are often unable to move to a pre-shock state compared to skilled workers (Artuç & McLaren, 2015). The Covid-19 pandemic has had a negative impact on nearly all types of occupation, but low skilled labourers have had to face the extreme effects of the pandemic, as compared to other groups, as (1) they are less likely to be paid proper wages; and (2) less likely to have skills to continue working from home or their occupation demands physical presence at the workplace (Berube & Bateman, 2020).

Other existing studies also solidify the hypothesis that workers with a lower educational level are less likely to retain employment during the pandemic. Especially when it comes to working remotely from home, it is found that only people with higher education and ICT skills could maintain working (Malkov, 2020; Saltiel, 2020; Dingel and Neiman, 2020). Bartik *et al* (2020) have found that people with lower educational levels were more likely to lose their jobs. Their estimates show that persons without a high school degree have an11 per cent higher chance of not working in the early phases of the virus spread.

In fact, the affected sectors are more likely to have employed people with a lower education (Mongey *et al*, 2020). The labourers having higher education are found with a better holding in the crisis period (Jain *et al*, 2020; Dang & Giang, 2020). Another expected trend is the surge in the number of low skilled and semi-skilled workers being either pushed into unemployment or other menial jobs, with a greater emphasis given to the exposure of digital transformation in the post-pandemic period (Park & Inocencio, 2020; Scarpetta *et al*, 2020).

Moreover, in rural areas, low educational levels are a major hindrance to the expansion of productive and innovative non-farm sector employment. Lack of skilled manpower can be explained by lower educational attainments, affecting their job prospects negatively (Saha and Verick, 2016). Not only does general education influence rural non-farm self-employment, but it is also influenced by vocational training and entrepreneurship education significantly. For instance, a study related to Nigeria by Afolabi *et al* (2018) shows that entrepreneurship education has a positive impact on self-employment initiatives. Further, Lazear (2004; 2005) argues that wage employees can be specialised in certain skills, whereas those self-employed need to possess multiple skills to perform a variety of tasks. Singh (2008), using data for the Indian economy, shows that possessing both general and vocational education has a significant impact on accessing better-paying non-farm activities in rural India. In this context, investment in skill development is an important policy intervention aimed at creating better employment opportunities, increasing productivity and achieving overall growth of the economy and is considered helpful particularly to the non-farm sector (Sanghi and Srija, 2015).

Over the years, even with the implementation of skill development programmes at various levels, there has been no expected increase in persons who have gained vocational training and thereby entered the category of skilled labour (NSSO 66th and 68th survey rounds). Several initiatives have been undertaken by the government towards promoting the skill levels among those engaged as self-employed labourers in the rural non-farm economy. For instances, Entrepreneurship Development Programme, Skill Development Programme and Management Development Programme implemented by the Ministry of Micro, Small and Medium Enterprises, *Swarnjayanti Gram Swarozgar Yoj*ana (SGSY) by the Ministry of Rural Development, 150 short courses conducted by the National Institute of Rural Development (NIRD), 51 Training Centres run by the Khadi & Village Industries Corporation*,* Vocational Training Centres (VTC) in Tribal Areas run by the Ministry of Tribal Affairs, 15 Food Craft Institutes run under State Governments by the Department of Tourism, Support to Training and Employment Programme for Women by the Department of Women and Child Development.

While a number of existing studies have investigated the issue of the importance of skills in overcoming crisis situations with specific reference to wage employment, it often neglects to provide a clearer picture regarding the importance of skills, especially vocational training, in overcoming crisis situations with a specific reference to rural non-farm self-employed individuals. Therefore, in this study, we focus on assessing the capabilities of skilled workers as compared to unskilled workers in the non-farm sector in overcoming the disruptions caused by theCovid-19 pandemic.

With this backdrop, the paper is organised as follows. In the following section, the methodology has been explained, along with data sources used for analysis. Then, we move on to explain the overall impact of Covid-19 on the rural non-farm self-employed businesses. This is followed by a descriptive and

empirical analysis of the difference between skilled and unskilled self-employed in managing the economic shock caused by the Covid-19 pandemic. The paper concludes with policy implications.

Methodology and Data Sources

We have used the difference-in-differences (DID) technique to assess the differential impact of the Covid-19 pandemic on the earnings of skilled and unskilled self-employed individuals. The primary data was collected from 880 self-employed individuals spread over different regions of Karnataka. We followed a multi-stage stratified random sampling technique and the survey was conducted across four administrative divisions of Karnataka. Two districts (one developed and one developing district) were chosen from each of the four administrative divisions. Further, from each of these eight districts, two villages were selected belonging to two different taluks. Finally, 55 self-employed individuals were surveyed, based on a detailed structured questionnaire, from each of the villages. Therefore, a total of 880 samples were covered from 16 villages for the present study. The above data was collected during September-November 2020. The study portrays a picture of the recovery from business losses during the lockdown period of the first wave of the pandemic in 2020.

Samples were divided into the control and treatment groups based on their possession of formal vocational training. The control group included self-employed individuals who had not undergone formal vocational training and the treatment group consisted of the self-employed individuals who had been formally trained through vocational training under the 'Skill India' mission. Here, by the term 'formal vocational training', we refer to training acquired through enrollment in institutions recognised by national certifying bodies. The sample was divided into 355 self-employed individuals in the treatment group and 525 in the control group.

The before and after criteria were used for understanding the impact of the Covid-19 pandemic on self-employed individuals' earnings. In this context, it is important to mention that we asked about the present monthly earnings (considered as post-Covid earnings) and also the monthly earnings just before the outbreak of the pandemic based on the recall method (considered as pre-Covid earnings). Moreover, it is essential to mention that we considered only those self-employed who had maintained their past income and expenditure details somewhat in written form in order to minimise recall bias and come up with precise estimates.

We specify the model as follows:

$$\square_{\square\square} = \square_{\square} + \square_{\square}\square\square\square_{\square} + \square_{\square}\square\square\square_{\square} + \square_{\square}\square\square\square_{\square}\square\square\square\square_{\square} + \square\square\square_{\square\square} + \mathcal{E}_{\square\square}$$

where $\square_{\square\square}$ represents the earnings of the i^{th} self-employed individual at the time 't'. FVT_i indicates the i^{th} self-employed individual with formal vocational training. *post* is a binary variable with a value of 1 for post-COVID and, 0 for the pre-COVID situation. Therefore, the coefficient $\square_{\square}$ represents the marginal effect of formal vocational training and $\square_{\square}$ represents the marginal effect of Covid-19. Most importantly, the coefficient of the interactive term between *FVT* and *post* ($\square_{\square}$) indicates the selective impact of formal vocational training on the earnings of self-employed individuals during the post-lockdown period. X is the vector of other control variables.

As a large number of existing studies have already shown that earnings of self-employed are very much dependent on several socio-economic- and business-related factors, we have used a number of socio-economic and business-related factors as control variables in the regression analysis. In fact, having a number of control variables in the regression equation enhances the precision of DID estimates. It even helps us check the robustness of DID estimates in terms of their sign and statistical significance level with the inclusion of different control variables.

The overall impact of Covid-19 on the rural non-farm self-employed activities

Before going into the DID estimates, this section tries to draw certain inferences pertaining to the overall impact of Covid-19 on the rural non-farm self-employment activities. In this regard, Table 1 provides information on the percentages of self-employment activities adversely affected by Covid-19 pandemic. By the term 'self-employed activities', we refer to self-employed own account enterprises that do not employ any hired workers in their business; they are managed mainly by family workers. From Table 1, it is observed that a whopping 98.75 per cent had experienced their business being negatively impacted due to the containment measures enforced by the government during the first wave of the Covid-19 pandemic. Moreover, the constraints had ensued a direct income loss for 94.2 per cent of self-employed individuals.

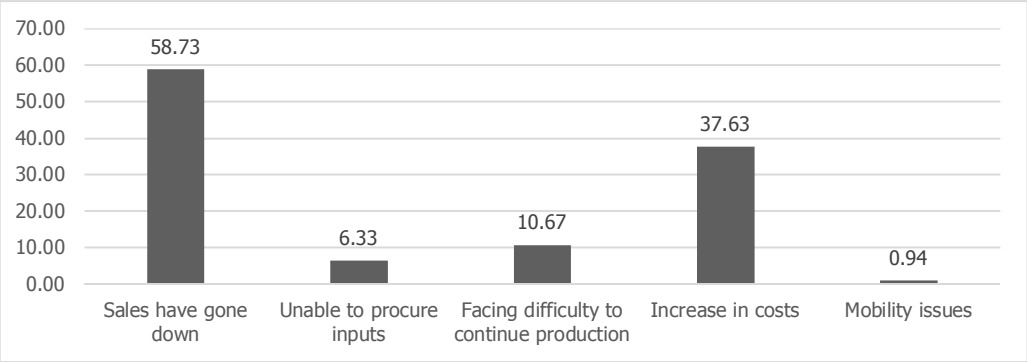
Table1: Percentages of Self-employment Activities Adversely Affected by Covid-19 Pandemic

	Facing any adverse impact		**Facing income loss**	
	Frequency	**Percentages**	**Frequency**	**Percentages**
Yes	869	98.75	829	94.2
No	11	1.25	51	5.8
Total	880	100	880	100

Source: Author's estimation based on primary survey.

In addition to this, we asked questions related to the reasons for such an adverse impact on self-employment activities during Covid-19 pandemic. The responses pointed out several demand- and supply-side reasons and the same have been presented in Fig 1.

Figure 1: Reasons for an Adverse Impact on Self-employment Activities During Covid-19 Pandemic



Source: Author's estimation based on primary survey.

Note: As an individual mentioned more than one reason sometimes, the summation of the percentages may exceed 100.

Among the 98.75 per cent of those affected, from Figure 1, it is seen that the major reason cited for the negative impact from the demand side was the decline in sales during the lockdown. A reduction in sales was reported by about 58.73 per cent of the respondents. The major issue from the supply side was the decline in income as a means to sustain the increasing costs in maintaining businesses (37.63 per cent reported the same). Along with these issues, other supply-side issues included the inability to procure inputs, difficulty to continue production and mobility issues etc. Thus, the breakdown of supply chain activities was also a cause of concern for the businesses.

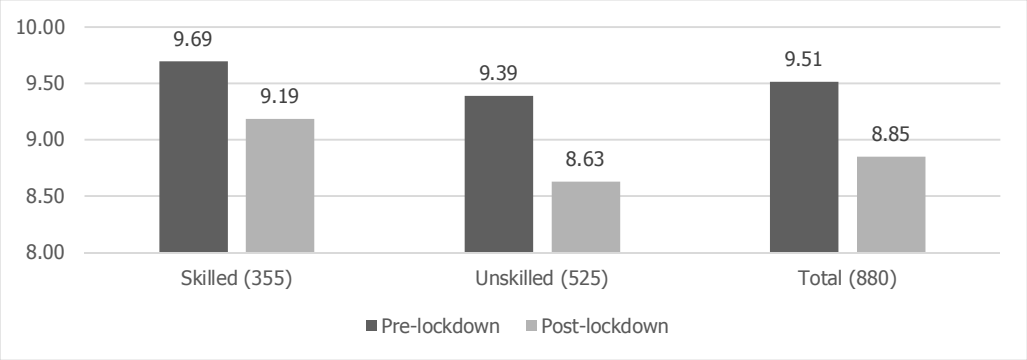
However, a small section mentioned that it had not been affected by the lockdown, as it was involved in essential services, while a few of them cited the inflow of returned migrants. This was seen mainly in the retail sector, which was able to sustain itself during this period.

Although almost every section of the rural non-farm self-employment activities was adversely affected by the outbreak of the Covid-19 pandemic, the impact might not be the same across them. Since the objective of the paper was to examine the importance of skills in the rural non-farm sector in overcoming the disruptions caused by the Covid-19 pandemic and the subsequent lockdown measures, we segregated the sample into skilled and unskilled self-employed individuals before carrying out the analysis, which is presented in the subsequent sections.

The differential impact on skilled and unskilled RNFS

It is essential to mention here that individuals possessing formal vocational training under the Skill India programme are referred to as skilled, and those not possessing formal vocational training as unskilled. To see whether skills make any difference to the impact, we start our analysis by presenting the monthly earnings of the skilled and unskilled rural non-farm self-employed individuals in the pre-lockdown and post-lockdown situations (Fig 2).

Figure 2: The Monthly Earnings (in Logs) of the Skilled and Unskilled Rural Non-farm Self-employed in the Pre-lockdown and Post-lockdown Situations



Source: Author's estimation based on primary survey.

Figure 2 depicts that the mean earnings of skilled individuals are much higher as compared to unskilled individuals both in the pre-lockdown and post-lockdown situations. This implies that possessing formal vocational training helps rural non-farm self-employed individuals earn a higher income. The t-value of the mean earnings difference between the skilled and unskilled individuals is also found statistically significant for both the pre-lockdown and post-lockdown situations. When it comes to the loss of earnings due to the lockdown, it is observed that though every section of the rural non-farm self-employment activities had been adversely affected by the outbreak of Covid-19 pandemic and the subsequent lockdown measures, the difference in the earnings between pre-lockdown and post-lockdown situations of the unskilled individuals is found higher than that of skilled individuals. This implies that the impact of lockdown has been more severe for unskilled individuals than skilled individuals.

In addition to a descriptive analysis, we have also examined the impact of lockdown measures during the Covid-19 pandemic on the earnings of skilled and unskilled rural non-farm self-employed individuals based on the DID technique, as discussed in the methodology section. One should also note that the differences between the mean earnings of the rural non-farm self-employed individuals might depend on their socio-economic conditions and also on several business-related factors. Within these, the impact of education on the self-employed is perhaps the most studied factor. Besides considering the formal vocational training programmes as a proxy for skilled and unskilled individuals, we have also controlled individual educational levels in the regression model. In fact, when we look into aspects that affect the business outcome, it is seen that educated individuals have the edge over the less educated. This edge is based on the grounds of access to more information and opportunities, access to credit sources, better managerial skills and networking ability. The studies by Meager *et al* (2011) and Cressy (1996) show that an increase in human capital contributes to better self-employed business outcomes. It has been determined that higher education has also increased the chances of business success. Studies by Cressy (1996), Van Praag and Cramer (2001) and Meager *et al* (2011) show that a higher educational level also leads to better entrepreneurial outcomes. While Cressy (1996) points out that higher qualification has a positively significant impact on survival rates, VanPraag and Cramer (2001) and Meager *et al* (2011) support the claim showing that highly educated individuals have a better knowledge about opportunities that suit their qualification and thereby increasing the chances of success. It is also

important to note that education improves one's efficacy and self-esteem, increases the ability of individuals to find better opportunities and even increases their chances of success (Robinson and Sexton, 1994).

There is a debate regarding the ranking which is given to education and experience in the growth of business. Studies show that it is a combined effect of both experience and education that is important. Millán *et al* (2012) came to the conclusion that a person with formal education and previous experience with the market is more likely to survive. But Robinson and Sexton (1994) and Henley (2002) point out that though the experience is important, it is considered secondary to education. Lazear (2004) used the concept of "Jack of all trades" as a determining factor of entrepreneurial outcome. His study concludes that a person with skills acquired via formal education is more likely to outperform a person with just a certain level of education.

In the following section, we run a regression in order to understand the impact of formal vocational training on the earnings of the rural non-farm self-employed businesses. Therefore, to come up with precise estimates, we have performed the DID analysis even with controlling for the socio-economic and business-related factors. In fact, in order to show the robustness of the DID results, we also have carried out a comparative analysis of the DID results with and without covariates (Table 2).

Table 2: Impact of Formal Vocational Training on the Earnings of Rural Non-farm Self-employed Individuals

	Specification-1 (without covariates)	**Specification-2 (with covariates)**
Post-Covid	-0.763*** (0.043)	-0.763*** (0.042)
FVT	0.303*** (0.039)	0.225*** (0.038)
Post-Covid*FVT	0.258*** (0.063)	0.258*** (0.061)
Age		0.029*** (0.009)
Age-square		-0.0003*** (0.0001)
Female		-0.111** (0.052)
Minority		-0.028 (0.077)
Scheduled Caste		0.069* (0.041)
Scheduled Tribe		0.06 (0.072)
Married		0.116* (0.062)
Education-primary		-0.143** (0.071)
Education-above primary but till secondary		0.12** (0.049)
Education-higher secondary		0.219*** (0.055)
Education-graduate and above		0.259*** (0.063)
Proprietary		0.083 (0.092)
Within household enterprises		-0.235*** (0.048)
Constant	9.388*** (0.025)	8.439*** (0.234)
No. of observations	1760	1760
F statistic	50.98	53.14
Prob > F	0	0
R-squared	0.31	0.33
Root MSE	0.645	0.639

Source: Author's estimation based on primary survey.

Note: ***, ** and * represent 1 per cent, 5 per cent and 10 per cent level of statistical significance respectively. Robust Standard Errors are reported in the parentheses. Dependent variable is 'Logarithm of earnings of self-employed individuals'.

In Table 2, first we have presented the regression results without covariates, considering only variables such as post-Covid dummy, FVT dummy and the interactive term between FVT dummy and post-Covid dummy. The coefficient of the interaction term is the coefficient for DID, which shows the actual effect of FVT during the post-lockdown period. Table 2 shows that though the coefficient for the post-Covid is negative and statistically significant, the interaction term in this model is positive and statistically significant, implying that in the post-lockdown period, while there is a decline in the earnings of both the groups, the treated group or in other words, the section with formal training has experienced a lower decline.

Moreover, in order to ensure the robustness of DID estimate, we have estimated the regression model with different control variables. The method of estimation using covariates is used to account for the unaccounted/unexplained variations within the simple DID model. Here, we considered the effect of being part of a minority or backward social group, marital status, age, level of education, form of ownership of business and location of enterprise. The sign and statistical significance level of the interaction term is consistent even after controlling for several socio-economic and business-related variables.

Moreover, regarding the other control variables, the coefficient for 'age' is found positive and statistically significant, but the coefficient for 'age-square' is negative and statistically significant, implying that the earnings from self-employment increase with an increase in the experience level, but after a certain age, it starts decreasing. As expected, the impact on earnings increases with an increase in self-employed individuals' educational level. As far as individuals' social identity is concerned, RNFS individuals belonging to a weaker socio-economic status show lower earnings. For instance, females account for lower earnings than males from RNFS businesses, and the earnings of individuals belonging to the minority religious groups are lower than those of non-minority religious groups. Further, as for the coefficient associated with business-related variables, though we find the coefficient insignificant for proprietary enterprises, the coefficient for RNFS businesses within household premises is negative and significantly related to the earnings.

In fact, the importance of skill during the Covid-19 pandemic time has been clearly revealed based on the decomposition of difference in differences coefficient in Table 3.

Table 3: Difference in Difference Estimation Results

	Pre-Covid-19			Post-Covid-19			Difference-in-differences
	Control (C)	Treated (T)	Difference (T-C)	Control (C)	Treated (T)	Difference (T-C)	
Specification-1 (without covariates)	9.388	9.692	0.303***	8.626	9.187	0.561***	0.258***
Specification-2 (with covariates)	8.439	8.664	0.225***	7.677	8.16	0.483***	0.258***

Source: Author's estimation based on primary survey.

Note: *** indicates 1 per cent level of statistical significance.

From Table 3, it is observed that though both the skilled and unskilled RNFS individuals account for a statistically significant income loss during the Covid-19 pandemic, the difference in the earnings for pre-lockdown and post-lockdown situations of unskilled individuals is higher than that of skilled workers

based on the DID analysis of both with and without covariates. For instance, for the model with covariates, the difference in the coefficients associated with the control and treated groups is 0.225 for the pre-lockdown period, whereas, for the post lockdown, the difference has increased to 0.483. Similarly, for the model without covariates, the difference in the coefficients of the control and treated groups is 0.303 for the pre-lockdown period, whereas, for the post-lockdown, the difference has increased to 0.561. The difference in differences coefficient between the periods is also positive (0.258) and statistically significant for both the models.

However, one may be interested in knowing whether skill plays a critical role in overcoming the disruptions only for a specific income group among the RNFS or it is vital to every income group. Therefore, we have estimated the DID coefficients (with covariates) across 0.1 quantile, 0.25 quantile, 0.5 quantile, 0.75 quantile and 0.9 quantile, and presented them in Table 4. Interestingly, it is seen that the DID coefficients are positive and statistically significant across all the five quantiles as mentioned above, implying that imparting skill through formal vocational training is critical to every section of the RNFS.

Table 4: Quantile Difference in Difference estimation results (for with covariates)

	Pre-Covid-19			Post-Covid-19			Difference-in-differences
	Control (C)	Treated (T)	Difference (T-C)	Control (C)	Treated (T)	Difference (T-C)	
0.1 quantile	7.07	7.299	0.23***	6.048	6.51	0.462***	0.232**
0.25 quantile	8.011	8.174	0.163***	7.194	7.694	0.5***	0.337***
0.5 quantile	8.514	8.709	0.195***	7.775	8.231	0.456***	0.261***
0.75 quantile	8.962	9.214	0.252***	8.291	8.765	0.474***	0.222***
0.9 quantile	9.591	9.815	0.224***	8.954	9.501	0.548***	0.324***

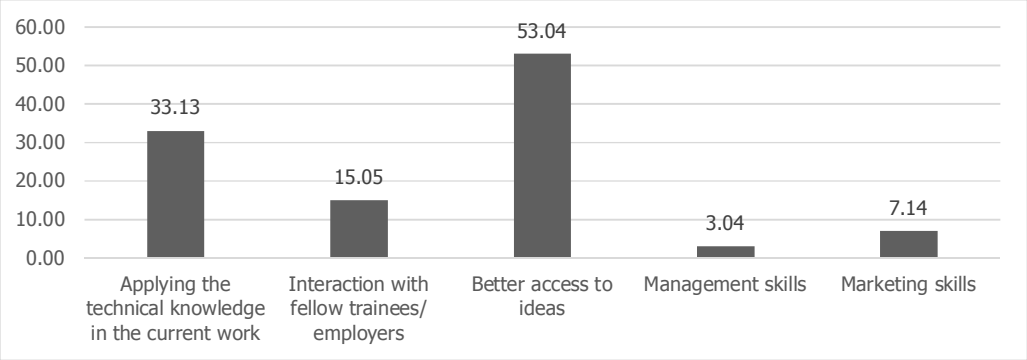
Source: Author's estimation based on primary survey.

Note: *** indicates 1 per cent level of statistical significance.

Why does skill make a difference?

In the preceding section, we have shown that skill can make a difference even in the time of an economic crisis. However, one may be interested in knowing why such a difference exists or how skill plays an important role. Therefore, this section provides a descriptive analysis to understand why and how skill can be effective in creating a positive impact on RNFS businesses. We start the discussion by presenting the prospects of different types of skill acquired through the formal vocational training programme that helps in business growth in Figure 3.

Figure 3: Different Types of Skill Acquired through the Formal Vocational Training Programme that Helps Business Growth



Source: Author's estimation based on primary survey.

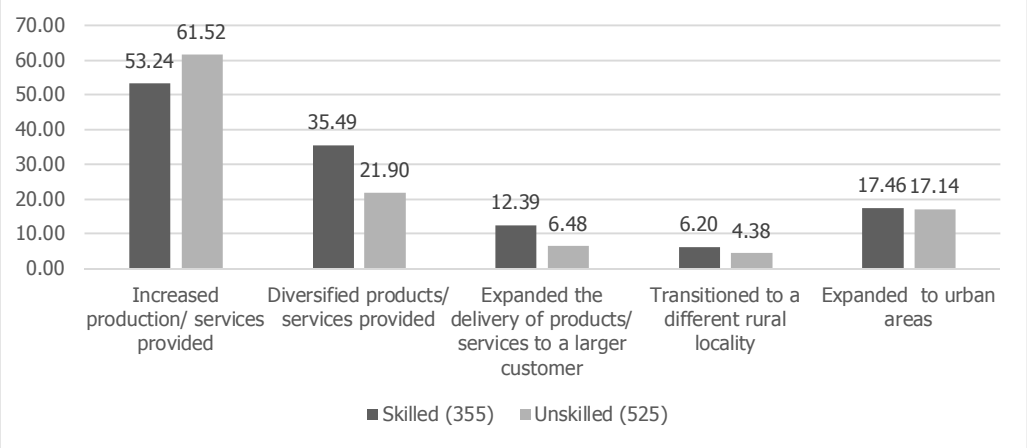
Note: As an individual mentioned more than one skill sometimes, the summation of the percentages may exceed 100.

First, it is interesting to find from Fig. 3 that as per 53.04 per cent of the respondents, they received better ideas for business during the training, and was stated as the most common factor behind their business growth. Secondly, as per 33.13 per cent of the respondents, they are applying new technical knowledge to their businesses that they had acquired through training. It could also be useful in policy-making for understanding how sharing new or updated ideas about business and its workings can lead to a positive impact. Often soft skills, management and marketing skills are expected to facilitate business growth. In fact, managerial skills are considered one of the most basic and important skills that determine the survival of the businesses. Existing studies also argue that an increase in human capital or education can lead to better managerial skills, with higher chances of business prospering (Bates, 1990; Kim 2008). Likewise, in our study, we also have observed that, besides sharing new ideas and imparting technical knowledge, formal vocational training programmes have also been successful in enhancing soft skills and business skills. More specifically, for 15.05 per cent of the respondents, there has been an improvement in their interaction/communication skills after the training. Moreover, for 3.04 per cent and 7.14 per cent of the respondents, there has been an improvement in managerial skills and marketing skills respectively.

In the initial stages of self-employment businesses, it is seen that the role of social capital such as networking and support mechanisms can create a positive environment for their expansion. While most businesses rely on friends and families as their primary contact source for support, it is seen that their educational institutions and mentors also have an important role for educated individuals. Their guidance and contacts give a push in the direction of success, especially in the initial period. The study by Greene and Saridakis (2008) shows a positive relationship between the support mechanisms and skills acquired through training. Especially during crisis periods, these informal support systems form one of the main means of revival in terms of informal credit, career advice and access to information. Figure 4 provides an insight into the differences existing in the business strategies used by skilled and unskilled self-employed individuals. Interestingly, the difference emerges when we look at the percentage of involvement in the business strategies. The most common strategy utilised both by the skilled (53.24 per cent) and unskilled (61.52 per cent) RNFS businesses relates to expanding production or increasing the

number of services provided. Here, we see that the unskilled self-employed have invested more in increasing the production of their products, but with a much lower emphasis provided to the diversification of their business (21.90 per cent), as compared to the skilled self-employed (35.49 per cent). This could be because of the better access to ideas they had received through the vocational training and skill development programme that helped them diversify their production. Both the skilled and unskilled self-employed could see a potential market in urban areas, and accordingly planned to expand their business to urban areas. The trained businessmen have given more importance to delivering their services to bigger businesses that act as customers for their products and services to move to other rural localities if their market was saturated in the present location.

Figure 4: Different Strategies Followed by Skilled and Unskilled Self-employed Individuals to Grow the Businesses

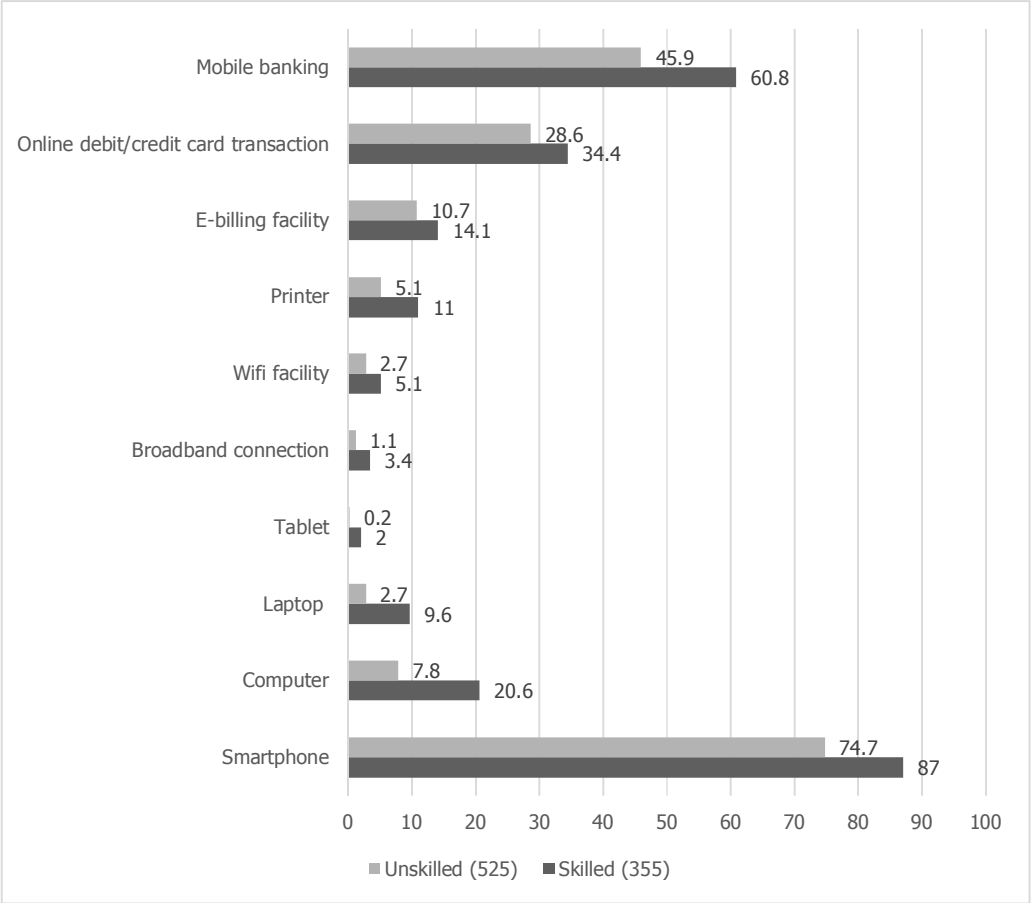


Source: Author's estimation based on primary survey.

Note: As an individual mentioned more than one strategy sometimes, the summation of the percentages may exceed 100.

Besides following different strategies for the promotion of businesses, skill may have a strong association with the use of technology. This is important, as the relationship between technology and businesses can be considered a proxy for the level of capital investment made in one's business. It plays an essential role in continuing with businesses when physical movement is restricted at the time of the pandemic. In this context, one may be interested in knowing whether there exists any difference in the penetration of information and communication technology (ICT) between skilled and unskilled self-employed individuals. More specifically, whether skilled self-employed individuals are in a better position to reap the benefits of ICT in their businesses as compared to unskilled self-employed individuals. Thus, Figure 5 presents a comparative analysis of access to different technologies among skilled and unskilled self-employed individuals.

Figure 5: Access to Different Technologies among Skilled and Unskilled Self-employed Individuals

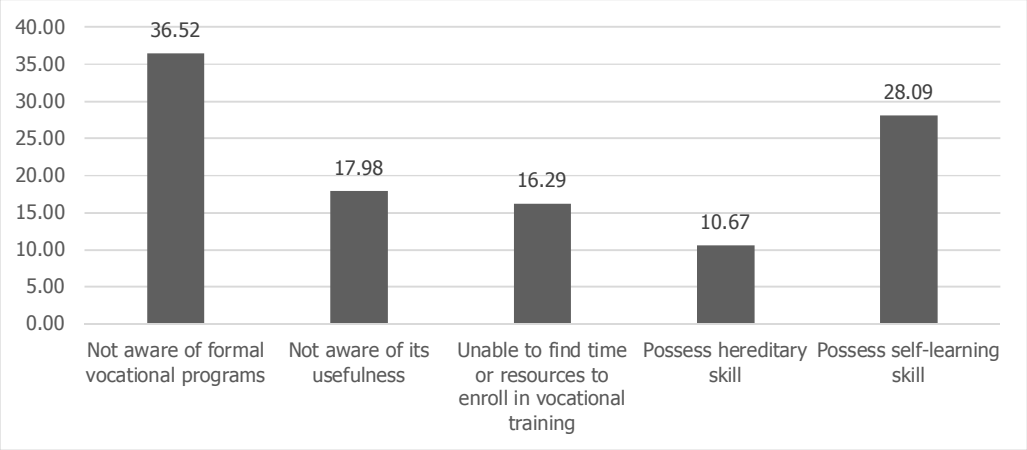


Source: Author's estimation based on primary survey.

Access to ICT facilities has been assessed based on smartphone, computer, laptop, tablet, broadband connection, wifi facility, printer, e-billing facility, online debit/credit card transaction and mobile banking. From Figure 3, it is seen that skilled self-employed individuals have a better access in terms of all indicators as mentioned above of ICT facilities when compared to the unskilled self-employed individuals. Thus, skilled self-employed individuals are able to reap the following benefits of ICT and expand their businesses. These benefits can be largely confined to five categories: i) better productivity and efficiency of the firm, using technology as a means to increasing productivity has been the cornerstone to achieve economic growth; ii) better marketing strategy, using websites and social media presence for marketing products even outside of the local space; iii) increasing sales using various platforms, using platforms of e-commerce as a means to reaching out to the wider customer base and increasing one's market shares; iv) better financial inclusion using the method of digital transaction and banking services which creates better access to credit; v) as a medium of networking between enterprises which can be an effective way of increasing one's capability (Duncombe and Heeks, 2005; Lee *et al*, 2010; Mbuyisa and Leonard, 2017). Moreover, better integration of new technology and skills has also been proved helpful in adapting to changing scenarios (van der Sluis *et al*, 2008).

Even though skill plays an essential role in promoting RNFS businesses, a large number of individuals do not seem to be participating in formal vocational training. Thus, we have identified different reasons for not participating in the formal vocational training, as presented in Figure 6.

Figure 6: Reasons for Not Attending the Formal Vocational Training Programme



Source: Author's estimation based on primary survey.

Figure 6 depicts that the reasons why people do not show an inclination towards attending formal vocational training, and they include unawareness regarding training programmes (36.52 per cent) and unawareness regarding the usefulness of enrolling in formal training centres (17.98 per cent). This calls for reassessing the building awareness strategy used for the schemes, as even with all the spending on the advertisement, it has been unable to reach one-third of the potential self-employed individuals who could have opted for it. The other two main reasons are the investment they were ready to make on self-learning (28.09 per cent) and banking on hereditary skills (10.67 per cent). This shows that a third of the population is inclined towards informal learning, which could be due to the lack of educational qualification required for attending formal training. The lack of time to invest in education is also a major factor that impacts individuals' selection. This is seen more among informally trained individuals, as they are learning on the job and their inability to divert time to this form of education.

Conclusion and Policy Implications

The Covid-19 pandemic has created an economic shock across the world in an unprecedented manner. Different sections of society have been affected in specific ways, and there is a disparity in terms of the impact on the high- and low-income groups, physical space, social groups and nature of employment. Therefore, it is important to look into each section and their issues to get a clearer picture. In our study, we focussed on the self-employed in the rural non-farm sector in Karnataka as an attempt to understand the role of skill development policies in overcoming the crisis.

Based on both descriptive as well as DID analyses, it is observed that though every section of the rural non-farm self-employed individuals has been adversely affected by the outbreak ofCovid-19 pandemic and the subsequent lockdown measures, the decline in the earnings of unskilled individuals is

higher than that of skilled individuals. When considering the income differential analysis done based on the quantile DID analysis, it is seen that imparting skill through formal vocational training is critical among every section of the RNFS. This provides a conclusive proof for the state and the individuals to invest in skill development not only for economic growth, but also as a support mechanism for households to overcome crisis situations.

Now, if we were to connect the business strategies used by skilled and unskilled individuals to their ability of overcoming the crisis, it can be seen that they have had a better chance of diversifying their products/ services, not solely investing in increasing production. This could have come about because of the ideas they had received while attending formal training or their interactions with other business owners. Besides adopting different strategies for the promotion of businesses, skill has a strong association with the use of ICT facilities in the businesses, which might have played an important role in continuing with businesses even during the pandemic. Studies point to the need for expanding the scope of the skill development programmes from providing just technical skill-based education to updating the existing skills, that could help households move away from unproductive enterprises to more advanced technology based businesses. This could help increase one's productivity and earning. But in order to expand it, it is important to ensure ready access to better public infrastructure and public training programmes in close proximity (NCEUS, 2009).

Even though skill plays an important role in promoting RNFS businesses, a large number of individuals do not show an inclination to participate in formal vocational training programmes. Therefore, policymakers need to pay attention to enhancing formal vocational training for rural non-farm self-employed individuals on a grander scale. Lack of awareness and clarity regarding formal vocational training programmes and their usefulness has been found as the major reason for individuals not participating in the formal training programmes. Therefore, there is a need for a rethink on the model used for advertising VET and skill development programmes, as it is not reaching every section of the rural population as expected. Therefore, it is important to focus on better strategies that could help expand the reach of such programmes. These strategies could include the involvement of locals who have benefitted from training programmes ability to make people aware of the potential benefits of formal vocational training.

Another reason for people being unable to enroll for formal training is the lack of time required for participation. This lack of time could be because they have to work for longer hours to earn a decent income for the family or their occupation requires them to work for long hours, which goes past school timing. First, if they were provided with a scholarship (or income protection) for the course of the training period, it could attract more people to such institutions. Secondly, there could be individuals willing to learn, provided there is an option for learning in terms of an evening college format with the timing issue solved to an extent.

References

ActionAid Association (India) (2020). Workers in the Time of COVID-19: Round I of the National Study on Informal Workers. https://www.actionaidindia.org/wp-content/uploads/2020/08/Workers-in-the-time-of-Covid-19_ebook1.pdf

Afolabi, M O, F A Kareem, I O Okubanjo, O A Ogunbanjo and O O Aninkan (2017). Effect of Entrepreneurship Education on Self-Employment Initiatives among Nigerian Science & Technology Students. *Journal of Education and Practice*, 8 (15): 44-51.

Artuç, E and J McLaren (2015). Trade Policy and Wage Inequality: A Structural Analysis with Occupational and Sectoral Mobility. *Journal of International Economics*, 97 (2): 278-94.

Azim Premji University (2020). Covid-19 Livelihoods Survey: Compilation of Findings. https://cse.azimpremjiuniversity.edu.in/wp-content/uploads/2020/06/Compilation-of-findings-APU-COVID-19-Livelihoods-Survey_Final.pdf

Bartik, A W, M Bertrand, F Lin, J Rothstein and M Unrath (2020). *Measuring the Labor Market at the Onset of the Covid-19 Crisis*. NBER Working paper No. w27613. National Bureau of Economic Research.

Bates, T (1990). Entrepreneur Human Capital Inputs and Small Business Longevity. *The Review of Economics and Statistics*, 551-559.

Berube, A and N Bateman (2020). *Who Are the Workers Already Impacted by the Covid-19 Recession?*. Washington, DC: Brookings Institution.

Blundell, J and S Machin (2020). Self-Employment in the Covid-19 Crisis. Centre for Economic Performance, London School of Economics and Political Science. A CEP Covid-19 analysis Paper No. 003. https://cep.lse.ac.uk/pubs/download/cepCovid-19-003.pdf

Cressy, R (1996). Are Business Startups Debt-rationed?. *The Economic Journal*, 106 (438): 1253-70.

Dang, H A, L T Giang (2020). Turning Vietnam's Covid-19 Success into Economic Recovery: A Job-Focused Analysis of Individual Assessments on Their Finance and the Economy, IZA Discussion Papers, No. 13315, Institute of Labor Economics (IZA), Bonn.

Dasgupta, K and S Murali (2020). Pandemic Containment and Inequality in a Developing Economy. IIM Bangalore Research Paper No. 613. https://www.iimb.ac.in/sites/default/files/2020-05/WP%20No.%20613_0.pdf

Dingel, J I and B Neiman (2020). How Many Jobs Can Be Done at Home?. *Journal of Public Economics*, 189: 104235.

Duncombe, R and R Heeks (2005). Information & Communication Technologies (ICTs), Poverty Reduction and Micro, Small & Medium-scale Enterprises (MSMEs): A Framework for Understanding ICT Applications for MSMEs in Developing Countries. World Summit on the Information Society (WSIS) workshop in Tunis, 16-18 November 2005.

Greene, F J and G Saridakis (2008). The Role of Higher Education Skills and Support in Graduate Self-employment. *Studies in Higher Education*, 33 (6): 653-72.

Henley, A (2005). Job Creation by the Self-employed: The Roles of Entrepreneurial and Financial Capital. *Small Business Economics*, 25 (2): 175-96.

Jain, R, J Budlender, R Zizzamia and I Bassier (2020). The Labor Market and Poverty Impacts of Covid-19 in South Africa. Cape Town: SALDRU, UCT. (SALDRU Working Paper No. 264).

Kalenkoski, Charlene M and Pabilonia, Sabrina Wulff (2020) Initial Impact of the Covid-19 Pandemic on the Employment and Hours of Self-Employed Coupled and Single Workers by Gender and Parental Status. IZA Discussion Paper No. 13443. http://ftp.iza.org/dp13443.pdf

Kannan, K P and G Raveendran (2019). From Jobless to Job-loss Growth. *Economic and Political Weekly*, 54 (44): 38-44.

Kapoor, R (2020). The Unequal Effects of the Covid-19 Crisis on the Labour Market. *The Indiaforum,* August, 7, 2020.

Kikuchi, S, S Kitao and M Mikoshiba (2020). Heterogeneous Vulnerability to the Covid-19 Crisis and Implications for Inequality in Japan. Center for Research and Education for Policy Evaluation, *Discussion papers*, *20039*. http://www.crepe.e.u-tokyo.ac.jp/results/2020/CREPEDP71.pdf

Kim, G (2008). Entrepreneurship and Self-employment: The State-of-the-art and Directions for Future Research. *New England Journal of Entrepreneurship*, 11 (1): 39-62.

Lazear, E P (2004). Balanced Skills and Entrepreneurship. *American Economic Review*, 94: 208-211.

———— (2005). Entrepreneurship. *Journal of Labor Economics*, 23: 649-80.

Lee, S, G Park, B Yoon and J Park (2010). Open Innovation in SMEs—An Intermediated Network Model. *Research policy*, 39 (2): 290-300.

Lemieux, T, K Milligan, T Schirle and M Skuterud (2020). Initial Impacts of the Covid-19 Pandemic on the Canadian Labour Market. *Canadian Public Policy*, 46 (S1): S55-S65.

Malkov, E (2020). Nature of Work and Distribution of Risk: Evidence from Occupational Sorting, Skills, and Tasks. *CEPR Covid Economics: Vetted and Real Time Papers*, 34: 15-49.

Mathew, N, I Deborah, T Karonga and C Rumbidzai (2020). The Impact of Covid-19 Lockdown in a Developing Country: Narratives of Self-employed Women in Ndola, Zambia. *Health Care for Women International*, 1-14.

Mbuyisa, B and A Leonard (2017). The Role of ICT Use in SMEs Towards Poverty Reduction: A Systematic Literature Review. *Journal of International Development*, 29 (2): 159-97.

Meager, N, R Martin, E Carta and S Davison (2011). Skills for Self Employment. UK Commission for Employment and Skills (UKCES).

Millán, J M, E Congregado and C Román (2012). Determinants of Self-employment Survival in Europe. *Small Business Economics*, 38 (2): 231-58.

Mongey, S, L Pilossoph and A Weinberg (2020). *Which Workers Bear the Burden of Social Distancing Policies?* Working Paper No. w27085. National Bureau of Economic Research.

NCEUS (2009). Skill Formation and Employment Assurance in the Unorganised Sector. National Commission for Enterprises in the Unorganised Sector. Government of India, New Delhi

Park, C Y and A M Inocencio (2020). *COVID-19, Technology, and Polarizing Jobs*. ADB briefs No. 147. Asian Development Bank.

Periodic Labour Force Survey (PLFS) (2019). Periodic Labour Force Survey, Annual Report, PLFS 2017-18, National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India, New Delhi.

Robinson, P B and E A Sexton (1994). The Effect of Education and Experience on Self-employment Success. *Journal of Business Venturing*, 9 (2): 141-56.

Saha, P and S Verick (2016). State of Rural Labour Markets in India. ILO Asia – Pacific Working paper series. ILO DWT for South Asia and Country Office for India. http://wcmstraining2.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/---sro-new_delhi/documents/publication/wcms_501310.pdf

Saltiel, F (2020). Who Can Work from Home in Developing Countries. *Covid Economics*, 7: 104-118.

Sanghi, S and A Srija (2015). Skill Development and Productivity of the Workforce. *Economy Matters*, 36-51.

Scarpetta, S, G Quintini and K Mullock (2020). Skill Measures to Mobilise the Workforce During the Covid-19 Crisis. OECD, Paris. http://www.oecd.org/coronavirus/policy-responses/skill-measures-to-mobilise-the-workforce-during-the-Covid-19-crisis-afd33a65/

Singh, R (2008). Education, Skills and Vocational Training and Access to Rural Non-farm Employment. *Indian Journal of Labour Economics*, 51 (4): 901-909.

Stranded Workers Action Network (SWAN) (2020). 32 Days and Counting: Covid-19 Lockdown, Migrant Workers, and the Inadequacy of Welfare Measures in India, Stranded Workers Action Network. https://covid19socialsecurity.files.wordpress.com/2020/05/32-days-and-counting_swan.pdf?fbclid=IwAR0-kuFz9pV9drrshn7NLnOUOuVbkv7NbrGzcqMLBMwyel0isEsaoLO-dw0

Van der Sluis, J, M Van Praag and W Vijverberg (2008). Education and Entrepreneurship Selection and Performance: A Review of the Empirical Literature. *Journal of Economic Surveys*, 22 (5): 795-841.

Van Praag, C M and J S Cramer (2001). The Roots of Entrepreneurship and Labour Demand: Individual Ability and Low Risk Aversion. *Economica*, 68 (269): 45-62.

Appendix

Table A1: Descriptions of the Variables Used in the Regression Equation

Variables	Descriptions
Log (earnings)	Logaritm of earnings
Post-Covid	Post-Covid=1 Ref: Pre-Covid = 0
FVT	Participated in formal vocational training =1 Ref: Not participated in formal vocational training = 0
Age	Age (in years) of the self-employed individuals
Age-square	Square of the age
Female	Female = 1 Ref: Male = 0
Minority	Minority =1 Ref: Non-minority = 0
Scheduled Caste	Scheduled Caste =1 Ref: Non-Scheduled Caste=0
Scheduled Tribe	Scheduled Tribe =1 Ref: Non-Scheduled Tribe=0
Married	Married = 1 Ref: Not currently married = 0
Education-primary	Education-primary=1
Education-above primary but till secondary	Education-above primary but till secondary =1
Education-higher secondary	Education-higher secondary =1
Education-graduate and above	Education-graduate and above =1 Ref: below primary education = 0
Proprietary	Proprietary enterprises = 1 Ref: Non-propeprietary enterprises = 0
Within household enterprises	Business within household premises =1 Ref: Business outside household premises =0

Source: Author's estimation based on primary survey.

Table A2: Descriptive Statistics of the Variables Used in the Regression Equation

Variables	No. of observations	Mean	Standard Deviation	Minimum	Maximum
Post-Covid	1760	0.50	0.50	0	1
FVT	1760	0.40	0.49	0	1
Age	1760	45.02	11.10	20	85
Age-square	1760	2150.36	1067.35	400	7225
Female	1760	0.09	0.29	0	1
Minority	1760	0.08	0.27	0	1
Scheduled Caste	1760	0.12	0.33	0	1
Scheduled Tribe	1760	0.04	0.19	0	1
Married	1760	0.93	0.26	0	1
Education-primary	1760	0.13	0.33	0	1
Education-above primary but till secondary	1760	0.38	0.48	0	1
Education-higher secondary	1760	0.25	0.44	0	1
Education-graduate and above	1760	0.11	0.31	0	1
Proprietary	1760	0.96	0.20	0	1
Within household enterprises	1760	0.13	0.33	0	1

Source: Author's estimation based on primary survey.

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