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Indicators and methods for assessing entrepreneurship training programmes

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Question

Entrepreneurship training is distinct from training in specific trade skills since the objective is to provide training which helps a person to start their own business rather than seeking paid employment. What are the best indicators and research methods for measuring the success of entrepreneurship training programmes in India and internationally?

Contents

1. Overview

Entrepreneurship training programmes are an important component of demand side job creation strategies in developing countries (Fox and Kaul, 2017). Assessments of such programmes are constrained by variations in the programme content, as entrepreneurship training is often combined with grants, life-skills training, internships and mentorship. The targets of these programmes also vary and include vulnerable groups, subsistence entrepreneurs as well as firms which have greater potential for growth. The indicators of success should be adapted to suit the objectives and target group of the programme. Given the varied nature of entrepreneurship training programmes it is unsurprising that a range of indicators are used to assess them. The indicators can be grouped into three broad categories: indicators of business practices, indicators of business performance and psychological indicators. Income and profits are the most commonly used indicator (Cho & Honorati, 2014). Randomised control trials which compare treatment and control groups are the gold standard method for assessing entrepreneurship training programmes. However, the quality of these studies can be improved by having larger sample sizes, baseline assessments before the intervention and three to four follow-up assessments to assess the long-term success of the programme.

Entrepreneurship training programmes vary in terms of content, length and target groups. Most programmes combine entrepreneurship training with cash grants, microfinance, life-skills training, vocational training, internships or mentorship. The programmes target necessity entrepreneurs, firms with better prospects for growth and vulnerable groups such as women or marginalised youth (Valerio, Parton, & Robb, 2014). Given these differences among the programmes it is difficult to compare the success of the programmes. There are several meta-analysis and systematic reviews which compare the impact assessments of several entrepreneurship training programmes. These studies reveal that a range of indicators have been used to assess the success of the programmes (Glaub & Frese, 2011; McKenzie & Woodruff, 2013; Patel, 2014). The indicators can be grouped into three broad categories: indicators of business practices, indicators of business performance and psychological indicators. Business performance indicators, especially income and profits, are the most widely used type of indicators (Cho & Honorati, 2014).

Entrepreneurship training programmes for women may require specialised content such as life skills training or mentorship that can assist women to overcome social barriers to their participation in the labour market (Patel, 2014). Programmes which target women tend to include psychological indicators which measure improvements in self-confidence, decision-making, empowerment or agency.

Randomised control trials which are an experimental research design that compares treatment groups which are exposed to an intervention to a control group which is not exposed are the best method for assessing the impact of entrepreneurship training programmes (Cho & Honorati, 2014; Glaub & Frese, 2011). The comparison of the treatment and control groups eliminates the effect of extraneous variables which the study cannot control for, such as macroeconomic changes. The randomised control trial is more effective if the sample size is larger because the statistical analysis will have greater precision and the study has more power to detect the small effects of changes which may occur after the intervention. It is necessary for this kind of study to have a baseline assessment of the key indicators before the intervention and three to four follow-up assessments which can evaluate short-term and long-term effects. Studies which utilise this approach can determine if the short-term spike in self-employment rates, income or profits which

typically occur after training are sustainable over a longer time period (McKenzie & Woodruff, 2013). Programmes and impact assessments which have a longer time frame usually have to contend with participant drop-out or attrition. Randomised allocation of the sample to treatment or control groups is a critical strength of the randomised control trial, however complex, multi-phase programmes which expect participants to graduate from one phase to the next must be designed to cope with attrition (D. J. McKenzie & Puerto, 2017). An impact assessment should be designed to ensure that the findings are not influenced by the Hawthorn effect, which occurs when respondents give positive responses after the training because this is deemed to be socially desirable. The most sophisticated programme assessments test for displacement effects which may occur when improvements observed after training come at the expense of groups which did not receive training (McKenzie & Woodruff, 2013).

2. Assessing entrepreneurship training programmes

Entrepreneurship training is an important component of **demand side** job creation programmes in developing countries (Fox & Kaul, 2017). Moreover, entrepreneurship is a catalyst for innovation, job creation and economic well-being (Glaub & Frese, 2011). Due to the youth budge in several countries in South Asia and Africa there is a greater urgency to create jobs and therefore more justification for entrepreneurship promotion (Cho & Honorati, 2014). However, there is a danger that entrepreneurship becomes viewed as a panacea for a range of development problems including poverty, education, job creation and fostering innovation (Valerio et al., 2014).

Valerio et al. (2014) observe that while entrepreneurship training programmes are often time limited, one-off projects there are some ongoing programmes in developed countries. For example, ACTiVATE is a year-long programme in the United States. There are 30 cohorts of aspiring women entrepreneurs which meet weekly. A similar programme which targets minority communities provides three sets of five-week courses. Both programmes are delivered through higher education institutions (Valerio, 2014, p. 36). In addition, ongoing business incubator projects are running in Sweden and the United States.

To date there are only handful of rigorous impact assessments of entrepreneurship training programmes which utilise randomised control trials and thus provide reliable evidence on the impact of entrepreneurship training programmes, although the body of evidence is growing (Patel, 2014, Cho & Honorati, 2014). This literature review will identify and assess the indicators and methodological issues which affect the quality of impact assessments of entrepreneurship training programmes. However, as more studies are conducted in the future Cho and Honorati (2014) anticipate that the recommendations may change.

Programme variation constrains comparison

Entrepreneurship training programmes provide training which enables the participants to become self-employed through running their own businesses, rather than to obtain skills which enable them to find wage employment. These training programmes vary significantly in terms of content, intensity and length. The **content** of the training is varied and ranges from business knowledge, entrepreneurial skills, financial literacy, accounting, marketing, sales, general

management skills, vocational skills and life skills (Valerio et al., 2014, p. 8). McKenzie & Woodruff (2012, p. 54) found that training varies between two days to one week although it can be spread out over months if the training is provided through microfinance groups which meet regularly. Patel (2014) finds that entrepreneurship training programmes in developing countries tend to include one or more of the following components: (1) access to finance, (2) business development services (this includes business advice or mentoring, technology transfer, business incubation services, business formalisation services and strengthening of women's entrepreneurial associations), (3) improving market access, (4) fostering and enabling environment, and (5) enhancing agency and empowerment. Several programmes combine training with grants, conditional cash transfers and follow-up support (Valerio et al., 2014). For example, women in a conflict zone in Uganda participated in five days of training and received start-up grants as well as follow-up visits from trained community members. A programme in Pakistan which targets unemployed young adults and provides them with entrepreneurship training and vocational skills training in the housing or sales sector (Valerio et al., 2014).

The target groups vary and some programmes give priority to women, the youth or welfare recipients (Valerio et al., 2014). Valerio et al. (2014) distinguish between **necessity** entrepreneurs who resort to self-employment to earn a living and '**constrained gazelles'** which share the low-capital, low-profit characteristics of the necessity entrepreneurs but have better potential for growth. Business development support (BDS) programmes provide management training for small enterprises with strong prospects for growth. Positive results for job creation were observed in a BDS programme in Mexico (Bruhn, Karlan, & Schoar, 2018).

Some programmes are specifically targeted at vulnerable groups such as women or marginalised youth (Valerio et al., 2014). In these programmes the content of the training is adjusted to meet the specific needs of the target group. For example, the **Jovenes** programmes in Latin America which target vulnerable youth and promote self-employment through a combination of life skills training, vocational training and workplace internships (Cho & Honorati, 2014, p. 4). In addition, some women's entrepreneurship development programmes attempt to overcome social and psychological barriers to woman's business activity (Patel, 2014). Programmes targeting vulnerable groups are assessed in terms of the immediate improvements on wellbeing, such as the ability of the participants to earn an income (Valerio et al, 2014, p. 32). In this scenario entrepreneurship training is viewed as a means to end immediate poverty rather than a long-term solution for reducing unemployment.

It is difficult to reach a consensus on which entrepreneurship training programmes work best in developing countries because of the differences in terms of the target group, objectives and content (Glaub & Frese, 2011; McKenzie & Woodruff, 2013). Moreover, even similar programmes can have very different results in different settings (Cho & Honorati, 2014). Furthermore, the indicators of success may be different for necessity entrepreneurs as opposed to enterprises with better prospects for growth.

Indicators for measuring the success of entrepreneurship training programmes

The evidence of the indicators which are used to assess the impact of entrepreneurship training programmes stems from two sources: (1) meta-analysis studies and systematic reviews which examine the indicators and findings of many impact assessment studies and (2) evaluations of

particular programmes. This review draws on the results of the following meta-analysis studies which review several assessments across the world. Patel (2014) conducted a review of meta-evaluations and rigorous impact evaluations of entrepreneurship training programmes from 2010-2014 on behalf of the International Labour Organisation (ILO), Cho and Honorati (2014) conducted a meta-analysis of 37 impact assessments of entrepreneurship programmes. Valerio et al. (2014) reviewed 16 programmes targeting potential entrepreneurs and 25 programmes which targeted existing entrepreneurs. Glaub & Frese (2011) reviewed 30 evaluations of entrepreneurship training programmes in developing countries. McKenzie & Woodruff (2012) reviewed 18 evaluations of entrepreneurship training programmes. There are no recent (2010 or later) examples of rigorous evaluations of entrepreneurship training programmes in India, apart from a study of business development support in the textile sector (Bloom, Eifert, Mahajan, McKenzie, & Roberts, 2013).

The following indicators of the success of entrepreneurship training programmes are identified in the literature and can be grouped into three broad categories:

1. Indicators of business knowledge and practices
    - Formalised record keeping (Cho & Honorati, 2014; McKenzie & Woodruff, 2013; Patel, 2014).
    - Separating household and business income (Cho & Honorati, 2014; Patel, 2014).
    - Separate business account (Cho & Honorati, 2014).
    - Improved marketing strategies (De Mel, McKenzie, & Woodruff, 2014; Patel, 2014; Valerio et al., 2014).
    - More strategic orientation (Valerio et al., 2014).
    - Stock-keeping practices (De Mel et al., 2014).

2. Business performance indicators
    - Income and profits. Cho and Honorati (2014) find that income and profits were the most common outcome assessed in the studies which they reviewed (28% of the 37 studies included income or profits among the outcomes). More specifically, individual salary, business profits, assets and household consumption were assessed (Cho & Honorati, 2014).
    - Sales (Cho & Honorati, 2014).
    - Number of wage workers (Cho & Honorati, 2014).
    - Size of inventory (Bloom et al., 2013; Cho & Honorati, 2014).
    - Business start-up (Cho & Honorati, 2014; Patel, 2014). Few studies considered the rate of new business start-ups but some used proxies such as self-employment and increased business income (Valerio et al., 2014).
    - Productivity (Valerio et al., 2014, Bloom et al., 2013).[1]
    - Increased hours of work or increased employment (Cho & Honorati, 2014).
    - Reduced inactivity (Cho & Honorati, 2014).
    - Loans (Cho & Honorati, 2014; Field, Jayachandran, & Pande, 2010).

[1] Neither of these studies define productivity adequately.

- Savings (Valerio et al., 2014).
- Business survival (Patel, 2014; Valerio et al., 2014).
- Business growth (Patel, 2014; Valerio et al., 2014).

3. Psychological indicators
    - Women's agency or decision-making capacity (Patel, 2014).
    - Confidence (Patel, 2014; Valerio et al., 2014).
    - Self-confidence and teamwork (Valerio et al., 2014).

A key issue for assessing the success of entrepreneurship training programmes is estimating the long-term benefits of the programme. Patel (2014, p. 3) provides some insight with regard to indicators for short-term versus long-term assessments by distinguishing between the intermediate and final outcomes of entrepreneurship training programmes:

- Intermediate outcomes

  More start-ups

  Increases in investment

  Improved business knowledge/skills

  Improved agency over business decisions

  Higher formalisation

  Improved business practices and performance

  Increased market access

- Final outcomes

  Growth for enterprises reflected through increases in revenue, profits and number of employees

  Enhanced role for women through greater agency or earnings.

3. Methodological challenges for assessing entrepreneurship training

The **randomised control trial** is the gold standard method for evaluating the impact of training programmes (Cho & Honorati, 2014; Glaub & Frese, 2011; D. J. McKenzie & Puerto, 2017; Valerio et al., 2014). Based on two separate reviews of nearly 50 evaluations of entrepreneurship training programmes Glaub & Frese (2011, p. 343) and McKenzie & Woodruff

(2012) identify the following methodological issues which affect the quality of research on entrepreneurship training programmes.

Sampling

A larger sample leads to increased **precision** in the estimates of the parameters in the population and thus to a higher generalisability of the findings (Glaub & Frese, 2011, p. 346). The selection of the sample must not be biased in such a way that it over-estimates the impact of the training programme. **Bias** can creep in if the sample is self-selected (for example, entrepreneurs can decide whether or not to participate in the study), when there is attrition (for example, if entrepreneurs who dislike the training drop out of the study) or when there is pre-screening of the participants (for example, only entrepreneurs with high levels of motivation are included in the sample). Most studies recruit study participants by offering them access to training. It is possible that those who take up the offer of training may be more interested in training or are in a better position to make use of training and are therefore not representative of the general population of entrepreneurs which may include those who are averse to training (Field et al., 2010; McKenzie & Woodruff, 2013; Patel, 2014). Fiala's (2013, p. 3) evaluation of 1550 micro-enterprises in Uganda used pre-screening because the firms were selected from a baseline survey which was conducted after the firms' expressed interest in receiving training from the International Labour Organisation. Consequently, the sample of entrepreneurs was relatively better off compared with most other Ugandan entrepreneurs (Fiala, 2013). McKenzie & Woodruff (2012, p. 51) find that firms which participate in entrepreneurship training programmes are diverse and differ notably from the general population of firms. It is therefore not possible to generalise the findings to the average firm. They found that firms vary in terms of the number of paid employees (with averages ranging between one and 20), monthly revenue with averages between US$ 80-105,787). Glaub and Frese (2011) found that the quality of the samples was generally low in the studies that they reviewed.

Control Groups

In experimental research the effect of an intervention is gauged by comparing those who participated in the programme (that is, the **treatment group**) with a similar group of individuals who were not exposed to the treatment or programme (that is, the **control group**) (McKenzie & Puerto, 2017). The use of a control group (which does not receive training) enables the researcher to control for the effect of **extraneous** variables which affect the results, such as changes in the economy like inflation or petrol prices which may affect the demand for goods and services (Glaub & Frese, 2011). If the members of the control group are randomly selected then selection bias is usually eliminated and the probability that confounding variables influence the results is minimal. However, in some studies where the programme is longer and comprises multiple phases it is not known which participants will graduate to the next phase or if any will drop out of the study (that is, attrition) and in such cases random assignment to the treatment or control groups becomes complex (Fiala, 2013; McKenzie & Puerto, 2017).

Pre and Post tests

The use of **baseline** assessments or pre-tests which occur before the interventions followed by post-tests that occur after the training permits the researcher to understand how the variables have changed or developed after the intervention (Glaub & Frese, 2011). It is necessary for randomised control trials to include baseline assessments of the treatment and control groups.

Significance tests and power

Significance tests are needed to ensure that the results did not occur due to chance (Glaub & Frese, 2011). The significance test is used to reject or not reject a null hypothesis that there is no difference before or after an intervention. The **power** of the experiment is reflected by its ability to detect an effect of the intervention (in this case, training), if there is an effect at all (McKenzie & Woodruff, 2013, p. 59). "The key determinants of the power of the study are the size of the sample, the amount of heterogeneity in the sample, (the more diverse the set of firms, the more difficult it is to measure change in them), whether the intervention occurs at an individual or group level), and the size of the treatment effect. Low **take-up** rates dilute the treatment effect, reducing power" (McKenzie & Woodruff, 2013, p. 59). McKenzie & Woodruff (2012, p. 61) regard a power level of 80% or more (which is considered acceptable in medical tests) to be a good benchmark for testing the success of entrepreneurship training programmes, but they find that most studies in their review fell far short of this. Furthermore, a high level of power is needed for detecting change in binary outcomes (such as whether a new business started, whether a firm applied for a loan or if a firm implemented a new business practice) which are relevant in assessments of training programmes (McKenzie & Woodruff, 2013).

Attrition and survival

One of the difficulties for research on training programmes is **attrition** which occurs when some of the participants drop out of the programme before it is completed (McKenzie & Woodruff, 2013). In the case of entrepreneurship training programmes attrition may also occur because start-up businesses fail. Furthermore, it is necessary to have extended follow-up studies to assess the long-term impact of the training programme but attrition occurs as researchers are not always able to find the participants several months after the programme finished (McKenzie & Woodruff, 2012, p. 63). McKenzie & Woodruff (2013, p. 63) found that attrition rates ranged from 5.3% to 34% and occurred because participants dropped out of the entrepreneurship training programme or the post-training evaluation study. Attrition has to be carefully managed in programme assessments where there are multiple phases such as training followed by a workplace placement (Azevedo, Davis, & Charles, 2013). Since only those who complete the training are eligible for the placement, the assessment of the programme must take attrition, which can occur during and after training, into account. For example, a study of a ten-month long training and workplace placement programme in Kenya found that attrition was fairly high in both the treatment group and the control groups between the baseline and midline assessments (Azevedo et al., 2013, p. 10). The study noted that if attrition was random then it would not affect the findings, however if attrition was systematic then it would affect the usefulness of the control group data. In this study, retention of the control group was encouraged through the payment of incentives, although this could introduce other types of bias into the sample (Azevedo et al., 2013).

In some cases, training may prolong the **survival** of relatively unsuccessful firms which would otherwise have shut down and thus an assessment of the programme in terms of the performance of the weak firms will understate the impact of the training (McKenzie & Woodruff, 2013, p. 63).

Timing

The short term and **long-term** effects of an intervention may differ, therefore when to measure the impact is a critical issue (McKenzie & Woodruff, 2013, p. 61). Ideally it is necessary to assess the short term and long-term effects of entrepreneurship training programmes. Several studies measure impact after one year or less which is not adequate to gauge the long-term effects. The few studies which do follow-up assessments 16 to 25 months after the intervention occasionally find that the control group was able to eventually catch up with the treatment group in terms of starting or expanding their own businesses (Patel, 2014).

Displacement effects

Displacement effects occur when an intervention benefits the treatment group at the expense of others who are not part of the study (Fox & Kaul, 2017). For example, entrepreneurship training programmes could lead to improved sales for the treatment group at the expense of other entrepreneurs who did not benefit from the training. However, there are few assessments of entrepreneurship training programmes which test for **displacement** effects (McKenzie & Woodruff, 2013, p. 63).

Hawthorn effects

Hawthorn effects occur when participants in a training programme report performing certain behaviours because the training advised them to so (McKenzie & Woodruff, 2013, p. 63). For example, after an entrepreneurship training programmes the participants may report changes in their business practices, such as separating business and personal accounts, because they know that such behaviour is socially desirable rather than because they actually made the change (McKenzie & Woodruff, 2013, p. 63).

It is also difficult to assess changes in business performance such as sales or profits because owners of micro-enterprises tend not to keep accurate **records** of sales or profits (Glaub & Frese, 2011). Larger firms may keep such records but are less willing to share them. For example, an initial assessment of KUZA, a youth employment programme in Kenya funded by DFID, was hampered because neither the training providers nor the beneficiary firms kept accurate records of sales or employment (MarketShare Associates, 2016). It is also possible that changes in revenue or profits may occur because business owners start keeping more accurate records after the training rather than because the business was able to improve its revenue. Some studies avoid using data on revenue or profits to assess the success of training interventions because of such difficulties (McKenzie & Woodruff, 2013, p. 64).

4. Examples from specific studies

Business training in India

This study measured the impact of training on existing and aspiring female entrepreneurs (Field et al., 2010).

Sample: A random selection of 636 female clients of SEWA Bank aged 18-50. One of the aims of the study was to test the effect of **religion and caste** and the baseline survey confirmed that this could be done with the sample. 289 women formed the treatment group. The take up rate was high at 70%.

Design: Business training was offered to a sample of clients of SEWA Bank. All clients were required to have a bank account. Two days of training were provided.

Assessment: Only one assessment was conducted after the training.

Indicators: Interest in applying for loans, business income, interest in business plans.

Key results: Upper caste Hindu women were more likely to take out a loan within four months after the training than Muslim or scheduled caste Hindus. However, banking records revealed that the treatment group was not more likely to apply for a loan than the control group. Upper caste Hindu women reported gains in business income and were more likely to have discussed business plans with family members.

BDS in India

This experimental study tested the impact of management training on established small firms in the textile sector (Bloom et al., 2013).

Sample: The population was defined as public or private textile firms around Mumbai, employing 100-1,000 people. The firms were contacted telephonically and offered access to free consultancy services. 34 firms expressed interest and 11 firms (with 14 plants) joined the treatment group while nine firms (with one plant each) were in the control group. The selection process introduces **bias** but Bloom et al. (2013) conducted a large survey among the defined population which indicated that the firms in the treatment group were not dissimilar from the designated population. The small sample sizes posed challenges for using significance tests.[2]

Design: An international consulting company which has offices in Mumbai provided the service. Three rounds of consulting services were provided to the treatment group at different time periods because of capacity constraints within the consultancy firm.

Assessment: Data was collected on a weekly basis during the intervention and was collected for 24 months after the intervention.

Indicators: A total of 38 **management practices** were recommended by the consultants. Productivity, inventory size, profits and firm size were measured.

Key results: Over one third of the treatment group adopted one or more of the management practices recommended by the consultants. There was an improvement in productivity in the first year as well as reduced inventory in the treatment group. The firms were reluctant to provide data on profits, but profits were estimated to increase by US$ 350,000 per plant in the treatment

[2] Given the cost of providing the consultancy service (US$ 3\fgirms 000 per firm) the samples in these programmes are usually small.

group (this was significantly higher than for the control group). Firm size in the treatment group increased over the course of the study.

SYOB in Sri Lanka

The study entails an evaluation of the ILO Start Your Own Business programme which was undertaken by female entrepreneurs (De Mel et al., 2014).

Sample: 624 women business owners earning less than US$ 2 per day and 628 non-economically active women who aspired to own a business were selected to take part in the study. 70% attended at least one training session. Statistical power was high because the sample was fairly **homogenous.**

Design: The women were randomly assigned to a control group, treatment group 1 which received training or treatment group 2 which received training and a grant of US$ 130. Three modules of training were provided over 14 days by a non-for-profit training provider.

Assessments: There was a **baseline** assessment before the intervention and four rounds of follow-up surveys after the programme as follows: 3–4 months, 7–8 months, 15–16 months, and 24–25 months.

Indicators: Business **performance** (sales, profits, capital stock, hours of work). A business practices index (from one to 29) was created using the scores for indices for marketing, stock control, financial planning and record keeping.[3]

Key results: The results show that business training alone does not improve profits, sales, or capital stock for current firm-owners or change the number of hours the owners spend working in their businesses. The combination of training and the cash grant does have positive and significant impacts on capital stock. Both treatments led to an initial spike in new business formation which dissipated over time. The treatments had no impact on total earnings.

[3]The **marketing score** was calculated using the responses to the following questions. Visited at least one of its competitor's businesses to see what prices its competitors are charging. Visited at least one of its competitor's businesses to see what products its competitors have available for sale. Asked existing customers whether there are any other products the customers would like the business to sell or produce. Talked with at least one former customer to find out why former customers have stopped buying from this business. Asked a supplier about which products are selling well in this business' industry. Attracted customers with a special offer. Advertised in any form (last 6 months).
The **stock score** comprised the following indicators. Attempted to negotiate with a supplier for a lower price on raw material. Compared the prices or quality offered by alternate suppliers or sources of raw materials to the business' current suppliers or sources of raw material.
The **record keeping** score encompassed the following indicators. Keeps written business records. Records every purchase and sale made by the business. Able to use records to see how much cash the business has on hand at any point in time. Uses records regularly to know whether sales of a particular product are increasing or decreasing from one month to another. Works out the cost to the business of each main product it sells. Knows which goods you make the most profit per item selling. Has a written budget, which states how much is owed each month and other indirect costs to business. Has records documenting that there exists enough money each month after paying business expenses to repay a loan in the hypothetical situation that this business wants a bank loan for rent, electricity, equipment maintenance, transport and advertising.
The **financial planning score** consists of the following indicators. How frequently do you review the financial performance of your business and analyse where there are areas for improvement. How frequently do you compare performance to your target,

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