



ITC's contribution to export competitiveness

Verification of intervention logic in the Information Technology & Services Sector in Bangladesh

Final Report July 2018



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List of abbreviations

B2B	Business to Business
BASIS	Bangladesh Association of Software & Information Services
BDT	Bangladeshi Taka
BITM	BASIS Institute of Technology & Management
CBI	Dutch Centre for Promotion of Exports from Developing Countries
CEO	Chief Executive Officer
DBL	Design-Based Learning
DCCI	Dhaka Chamber of Commerce & Industry
ECP	Export Coaching Programme
EQR	Foreign Currency Exporter's Retention Quota
ESCP	Export Sector Competitiveness Programme
EXPRO	Export Marketing Planning
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IT	Information Technology
ITC	International Trade Centre
ITES	Information Technology Enabled Services
NTF	Netherlands Trust Fund
ODK	Open Data Kit
PMP	Project Management Professional
PRIME	Pioneering Real-time Impact Monitoring and Evaluation
SCB	Standard Chartered Bank
SCBEQR	Standard Chartered Bank Account Services
SDGs	Sustainable Development Goals
SEIP	Skills for Employment Investment Program
SMEs	Small and Medium Enterprises
SQL	Structured Query Language
ToC	Theory of Change
TSI	Trade Support Institutions
UNCTAD	United Nations Conference on Trade and Development
US	United States
WTO	World Trade Organization

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Executive Summary

Evaluating the impact of the NTFIII project in the Information Technology (IT) and Information Technology Enables Services (ITES) sector in Bangladesh. The International Trade Center (ITC) saw the need for more robust and credible monitoring of outcomes and impact of their interventions. The PRIME research partnership was established in 2015 to develop and implement a methodology to monitor and evaluate the impact of Netherlands Senior Experts (PUM) and the Centre for the Promotion of Imports from developing countries (CBI) programmes on SME performance. PRIME stands for Pioneering Real-time Impact Monitoring and Evaluation and is a research partnership between Wageningen Economic Research and Erasmus School of Economics. This report focuses on the contribution of ITC to the export competitiveness of the IT and ITES sector in Bangladesh.

Various actors are active in the IT/ITES sector to address challenges of this important export sector. Bangladesh is a large developing country with a significant potential to grow in the next years. Although still small in absolute size, the IT service sector has been growing rapidly during the past 20 years. The government projects this growth to sustain in upcoming years. Various institutions have recognised the growth potential in the Bangladeshi IT-sector and have implemented programmes to spur its development.

The Netherlands Trust Fund Export Sector Competitiveness Programme became active in the IT/ITES sector to enhance export competitiveness. The Netherlands Trust Fund III (NTFIII) is based on a collaboration between the UN International Trade Centre (ITC) and the Dutch Centre for Promotion of Exports from Developing Countries (CBI). The project was implemented between July 2014 and July 2017 and aimed to enhance the export competitiveness of the sector. The project enhances the export competitiveness through capacity building of Trade Support Institutions (TSIs) and Small and Medium Enterprises (SMEs) and creating linkages in selected export targets.

Four research questions were identified related to the key assumptions at different levels of the impact logic of NTFIII project in Bangladesh.

We maximised the use of findings for steering ITC-support in other contexts by focusing on impact pathways that have potential to be replicated or scaled out. Based on the project documents, we defined four evaluation questions; each relating to one of the key assumptions underlying the project's intervention logic. The questions focus on (1) the selection of SMEs; (2) the contribution of NTFIII to improvements in service delivery in the sector; (3) the knowledge and practices of SMEs; and (4) export performance.

Data were collected in 2016 and 2017 from more than 300 firms; enriched by in-depth interviews. An inception phase was implemented to ensure the optimal design of the evaluation. The BASIS member registry was used to select IT, and ITES companies in Dhaka; midline data were collected in April-May 2016 among 539 firms and endline data were collected in October-November 2017 amongst a reduced sample of 307 (most comparable) firms. The firm survey included a wide range of support, practice and performance questions. Information about the firm's situation at project start was collected by recall questions in the midline survey. In depth-interviews are used to support empirical findings from the statistical analysis.

A strong counterfactual was built to identify the contribution of NTFIII based on different data sources and types of analyses. ITC's contribution to Bangladesh Association of Software and Information Services (BASIS) is analyzed by linking institutional support provided and used to export performance of firms. The counterfactual at firm level builds on a statistical comparison between NTFIII SMEs and non-NTFIII SMEs and using data from in-depth interviews. This evaluation assesses the contribution of the NTFIII project on the outcome indicators related to various Sustainable Development Goals (SDGs). A validation workshop and qualitative interviews were used to verify results.

Most firms have fewer than 50 employees; most labour is permanent, skilled and male. The majority of Bangladesh IT/ITES sector firms are small-sized firms (10-50 employees). The majority of workers in the sector are (skilled) software developers and (low-skilled) ITES workers. Over two-third of the workforce consists of permanent male workers. Women are mostly active in low-skilled work, and to a lower degree in skilled work Web application, business process outsourcing, software, and mobile application development are the main areas of expertise in the sector.

Export of the Bangladesh IT/ITES is growing strongly. Before the start of the NTFIII project in Bangladesh, half of the firms in the sector had export experience. While export is growing strongly, it does not yet compete with larger exporting countries in terms of volume. IT/ITES BASIS members grew between 2014 and 2016 in terms of employees, sales, and export. Many firms are willing to export (to new markets) but are constrained by lack of information and strong competition.

NTFIII supported the SMEs from the sector that are specialised on exports and gave SMEs with female managers or owners a priority in the selection to the project. The NTFIII project in Bangladesh selected high export potential companies. Few SMEs exist that meet export readiness selection criteria and were supported by NTFIII. Empirical results confirm that SMEs with female managers received priority for the selection by the project.

During the ITC-supported period BASIS members use of services and training increased. BASIS provides a variety of training and services. More than two-thirds of BASIS members has benefited from a BASIS service or training. Participation in BASIS training improved over the course of ITC support. In the period that BASIS received ITC's institutional support, the firms have started to perceive BASIS services as more useful. The use of BASIS services is below 50% for almost all services when the training is not included, although the firms that use them are satisfied.

Using BASIS services is associated with having better export performance. BASIS contributes to export performance through different types of training. There is a positive relationship between the use of BASIS financial services and promotional services, supported by ITC and having better export performance. ITC facilitates the export marketing plan training in BASIS.

NTFIII strengthens understanding of marketing techniques and international quality requirement. The NTFIII project contributed to a change in knowledge and business practices for most SMEs. The most contribution of the NTFIII project on knowledge and practices is reported in the areas of quality requirements of international buyers and marketing techniques to increase sales. Most NTFIII SMEs found the export marketing plan in support of ITC and business matching events organised by ITC very useful. NTFIII has had an impact on the development of marketing plans.

The project has most effect on export-oriented SMEs supported by the project. Improved practices are related to improved export performance. Programme participants enlarged their business network through the trade fairs and business matching events organised by NTFIII and contracted with two more long-term clients than non-NTFIII SMEs. During the course of support, on average, SMEs supported by NTFIII entered three new export markets. In the same time period the NTFIII SMEs doubled their exports and the average export growth was 39 percentage points higher than non-NTF SMEs. The effect of the NTFIII project on export performance is more pronounced on SMEs that are specialised on exports, and smaller SMEs did not benefit from the support as much. NTFIII contributed to generating permanent (female) employment and growth in business profits.

The NTFIII project improved female employment in the supported companies. Female employment in the Bangladesh IT and ITES sector is 21%, which is lower than the overall fraction of female employment in Bangladesh (28%). Over the course of the project, NTFIII SMEs employed more female employees than firms that are similar to NTFIII firms. This effect is similar to the effect of the project on male employment.

ITC contributed to the Sustainable Development Goals by promoting the export performance of the IT/ITES sector. The project directly supported export ready SMEs that are bigger, more experienced in exporting services, and more likely to have a female owner than the average firm in the sector. Export promotion training improved SMEs' knowledge and business practices on marketing techniques and quality requirement of international buyers. The improved business practices are related to improved export and business performance. The creation of new long-term contracts with foreign clients and permanent employment and improved services of BASIS may

support the sustainability of programme impact in the long term. However, spill-over effects of the ITC support to other SMEs in the sector may be limited, as ITC support targeted only SMEs with high export potential. Overall, it can be concluded that ITC contributed to the Sustainable Development Goals by promoting the export performance of the IT/ITES sector.

A close-up photograph of a network switch or patch panel. Numerous red and blue Ethernet cables are plugged into the ports. Some red cables have white labels with orange text, including '4510' and '2-25'. The switch face is dark grey with port numbers visible. A large white number '1' is overlaid on the right side of the image, enclosed in a thin white circle.

Background of the evaluation of NTFIII in Bangladesh

1

Chapter 1: Background of the evaluation of NTFIII in Bangladesh

Evaluating the impact of the NTFIII project in the IT and ITES sector in Bangladesh. Based on the evaluations for the earlier phases of the NTF programme, ITC saw the need for more robust and credible monitoring of outcomes and impact of their interventions. The PRIME-ITC research partnership was established in 2015 to develop and implement a methodology to monitor and evaluate the impact of two private-sector development support programmes. ITC linked up with PRIME to improve the design and implementation of more impact-oriented, robust and credible monitoring and evaluation system in ITC.

PRIME-ITC responds to the need for credible impact estimates of private-sector support. PRIME stands for Pioneering Real-time Impact Monitoring and Evaluation and is a research partnership between Wageningen Economic Research and Erasmus School of Economics implemented. The programme was implemented between 2013 and 2018 together with two Dutch private sector support instruments which are implementing activities that are similar to the ones of ITC. This report presents the contribution of ITC to the export competitiveness of the IT and ITES sector in Bangladesh.

Bangladesh is a large developing country with the significant potential to grow in the next years. Bangladesh is the eighth most populous country in the world with over 160 million inhabitants. Poverty decreased from 44.2% in 1991 to 13.8% in 2016. In 2016, GDP per capita reached 1358 U.S. dollars thanks to the 5% plus annual growth rate since 2004. The World Bank (2018) projects that the growth of the country will remain to have a strong 6% annual economic growth rate until 2020. This means Bangladesh has strong growth potential.

Although still small in absolute size, the IT service sector in Bangladesh has been growing rapidly in the past 20 years. The

Bangladesh Association of Software and Information Services (BASIS) was established in 1997 with 17 members and has grown to 326 members in 2009. By May 2018, the membership reached to more than 1,000 members.¹ In addition to this, there are hundreds of unregistered and home-based software ventures. The sector employs over 30,000 people. Although the sector is still small in absolute size compared to other countries in the region (e.g., India), it is clearly growing fast.

The government of Bangladesh projects that the internet sector will continue to grow in the upcoming years. Internet penetration in Bangladesh rose from 3% in 2009 to over 18% in 2016 (World Bank Databank, 2018). Around 7% of households have a computer and of these most have access to the internet. (Baller et al., 2016) The Bangladesh government expects that the IT sector will add over 7% to GDP growth in 2021.

Various institutions have recognised the growth potential in the Bangladeshi IT sector and implemented programmes to spur its development.

- The Bangladesh government formulated an IT policy in 2009, consisting of measures including a tax exemption for software and ICT companies, subsidised long-term equity and short-term working capital facilities, and the construction of a hi-tech and software park to facilitate the development of ICT infrastructure (Baller et al., 2016)
- BASIS is the sector organisation which coordinates initiatives of the various key stakeholders. BASIS' membership consists of over 1,000 IT firms as of 2018. Furthermore, BASIS implements workshops, training, and seminars to disseminate information to their membership (BASIS, 2014).

¹ Please see the list of members from here:
https://www.basis.org.bd/index.php/members_area

- The World Bank launched the 'ICT growth, employment and governance' project in 2012. The project was budgeted at USD 70 million. The first component of the project is supporting the development of the sector. This component included various components related to (i) IT training for science graduates, (ii) training for IT employees, e.g., about language and cultural sensitisation, and (iii) management skills for IT firm directors and managers.
- With the financial support of the Asian Development Bank, the government of Bangladesh initiated the Skills for Employment Investment Program (SEIP) in 2014 to enhance the competitiveness of Bangladeshi exports and increase the labour force productivity and earnings in six priority sectors including the IT sector. To do this, SEIP supports public and private training providers and cooperates with BASIS. Through SEIP BASIS is expected to train up to 23,000 trainees for the IT sector until 2018 (Skills for Employment Investment Program, 2015).

Different but complementary to the other programmes, Netherlands Trust Fund Export Sector Competitiveness Programme (NTFIII – ESCP) in Bangladesh initiated a project to enhance the export competitiveness in the sector. The project is part of the NTFIII-ESCP that is based on a partnership agreement between the Dutch Centre for the Promotion of Imports from developing countries (CBI) affiliated to the Ministry of Foreign Affairs of the Netherlands and the International Trade Centre (ITC). The project is funded by CBI. The programme aims to enhance export sector competitiveness of key growth sectors in four beneficiary countries including Bangladesh, Kenya, Myanmar, and Uganda. The main purpose of the NTFIII Bangladesh project is to improve the export competitiveness of the Information

Technology (IT) and IT-enabled services (ITES) industry in Bangladesh. By increasing competitiveness, ITC aims to increase export revenues, income and ultimately contribute to job creation in these sectors. The project was budgeted at USD 1.9 million and was implemented together with sector organisations BASIS and DCCI (Annual progress report-NTFIII, 2015).

NTFIII ESC in Bangladesh supports export competitiveness through capacity building of TSIs and SMEs and by creating linkages in selected export markets. To build export competitiveness in the sector, the project has followed three main strategies. First, NTF III – ESCP aimed to improve the capacity of beneficiary local trade support institutions (TSIs) which provide sector-development services to SMEs. Second, they aimed to increase the export capacity of SMEs. Third, the project aimed to create new business linkages in selected target export markets.

The structure of this report follows the key elements of the intervention logic for the NTFIII Bangladesh project. This report verifies whether the assumptions about the impact pathways of the NTFIII project hold in practice. Chapter 2 describes the theory of change, activities of the NTFIII project, and the methods used to verify the intervention logic. Chapter 3 gives a general overview of the IT and ITES sector in Bangladesh. Chapter 4 reports on the findings concerning BASIS' contribution to firm business practices and export performance. Chapter 5 shows the contribution of the project to business knowledge and practices, and Chapter 6 reports how these changes in knowledge and practices translate in improvements in the performance of SMEs. Conclusions and recommendations are presented in Chapters 7 and 8.

Testing key
assumptions with
a rigorous
research design

2



Chapter 2: Testing key assumptions with a rigorous research design

2.1 Theory of Change

Selecting the right key assumptions to ensure relevance of research.

Measuring impact in complex interventions, like export coaching and improving the enabling environment for SMEs is challenging. The 'treatment' is very diverse in context, content, and intensity. The findings will therefore always be context-specific. However, we maximised the generalisation domain of the findings in order to make it useful to steer ITC support in other contexts by focusing on impact pathways that have potential to be replicated or scaled out and testing the key assumptions underlying the impact pathways.

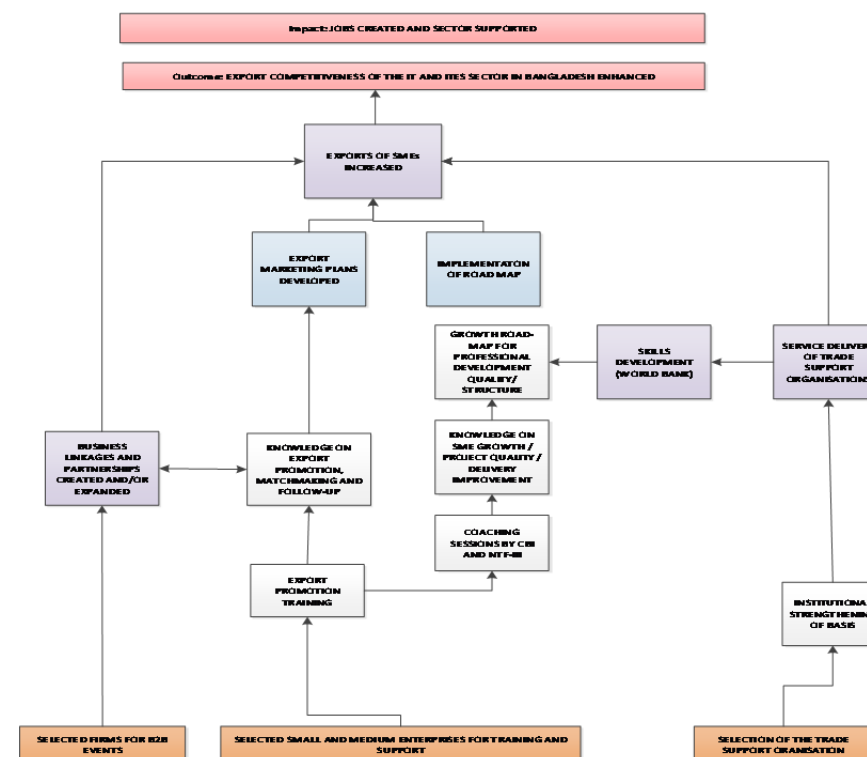
Identify impact pathways to guide the development of research questions.

For the design of business practices adoption and impact evaluation study, this demands an understanding of the dynamics in the intervention and the conditions that are expected to influence the effectiveness of the support: the intervention logic or theory of change (see Figure 2.1). Based on the project documents, we identified several outcome areas. Development impact (e.g., poverty) will result from changes in company performance. This performance is influenced by the technology, skills and knowledge in the persons working in or with the company. The support that ITC provides is especially targeted on this level of knowledge and skills, and the enabling environment for SME export practices. Thus the changes in knowledge and business practices are likely to be the outcomes which are directly attributable to ITC.

Three impact pathways to improved sector performance and job creation in the IT and ITES sector in Bangladesh. The key aim of NTFIII in Bangladesh is to contribute to improved sector performance and job creation in the IT and ITES sector. NTFIII developed three impact pathways related to

institutional support of BASIS, creating linkages between firms and foreign markets and firm training. All impact pathways run through enhanced export competitiveness of the sectors.

Figure 2.1 Adjusted Intervention Logic of NTFIII Bangladesh project, Immediate outcomes (white boxes), intermediate outcomes (white boxes), ultimate outcomes (purple boxes) and development impact (red boxes)



The first impact pathway of ITC relates to the institutional support of BASIS and all its members. The NTFIII Bangladesh project aims to strengthen the institutional capacities of the BASIS. This support involved building capacity in the market intelligence and research capacities of BASIS and enhancing their entrepreneurship-support capacities to foster the growth of the industry. Improved service delivery by BASIS would increase the exports of firms benefiting from these services.

The second and third impact pathways relate to the support of a selection of BASIS members. Aside from the institutional support provided to BASIS, NTFIII Bangladesh supported a selection of IT and ITES SMEs, so-called NTFIII SMEs, through two impact pathways. The NTFIII SMEs were selected out of a pool of applicants that met certain criteria such as financial soundness, export strategy, size, or attitude towards employment of women².

The second intervention pathway of the project relates to the effects of B2B events (and trade fairs) organised by ITC. Business to business (B2B) events (and trade fairs) are organised by ITC to create new business links, and partnerships with foreign companies, or expand existing ones. At the B2B events, selected NTFIII SMEs meet with foreign clients that are interested in the services of Bengali SMEs. While expanding and creating new business links, these events give opportunities to NTFIII SMEs to directly communicate with foreign clients and convince the clients of the quality of NTFIII SMEs' services. This should result in increased exports of the SMEs that participate in these B2B events.

The third intervention pathway of the project includes training, coaching sessions, and export promotion training for ITC supported SMEs. The support provided to the selected SMEs is aligned with CBI's Export Coaching Programme (ECP). The individual ECP focused on improving the business export knowledge and practices and included an Export Marketing Planning (EXPRO) training and individual coaching to enter the EU market. A range of other training was also offered from effective trade fair participation to human resources management. Apart from ECP Training, ITC also offered e-learning training. Occasionally these training opportunities were made available to other BASIS members. The improvements in knowledge and practices

² Please see <http://www.intracen.org/NTF-III-Bangladesh-Companies/> for the NTFIII companies and the details of the selection process.

should ultimately translate into better firm performance and increasing exports.

Four key assumptions were identified at different levels in the ToC. The intervention logic was developed based on project documents and refined after interviews with NTFIII staff in Geneva. It identifies four key assumptions. First, the SMEs selected are more likely to respond positively to support. Second, coaching by NTFIII (in a corporation) with CBI enhances supported SMEs' knowledge and practices. Third, export promotion training enhances the supported SMEs' knowledge and practices. Finally, exports of the supported SMEs increase in response to support provided.

2.2 Research Questions

This report answers three evaluation questions related to the impact pathways and key assumptions underlying the project's intervention logic. Below we list the three key research questions agreed upon in an early phase of the research:

1. What are the characteristics of supported SMEs, and how do they differ from the unsupported IT SMEs in Bangladesh?
2. Do the NTFIII support activities improve the SMEs' knowledge & business practices?
 - a. Do the BASIS training and support enhances supported firm knowledge and practices?
 - b. Do the NTFIII Bangladesh project's individual coaching and training sessions improve supported SMEs' knowledge and practices?
3. Do the improvements in knowledge and business practices improve the SMEs' export performance?

2.3 Data Collection

An inception phase was implemented to ensure the optimal design of the evaluation. A preparatory desk study was conducted to focus on the dynamics in the sector and country, the strategies of the government and major donors in the sector and, based on telephone/Skype interviews with ITC staff working in the sector, on the (expected) change process and activities in the sector. This led to a refinement of the research design, especially the

intervention logic, appropriate outcomes and indicators for monitoring firm-level impacts, and the way to collect information on the supported and non-supported SMEs.

The BASIS member registry was used to select IT and ITES companies in Dhaka. All IT and ITES companies based in Dhaka from the BASIS member registry were sampled. Only BASIS members in Dhaka were selected as this was the target group for the NTFIII project in Bangladesh. Moreover, 90% of registered IT/ITES companies in Bangladesh are located in Dhaka. The total population includes both NTFIII (supported) and non-NTFIII (unsupported) firms. The non-NTFIII SMEs are divided into two subsamples: one sample of SMEs which applied to the NTFIII programme but were not accepted, and another sample of SMEs which did not apply to the programme.

Midline data were collected in April-May 2016 among 539 firms. Midline data were collected in April-May 2016 by the enumerators trained by the Wageningen Economic Research researchers. We collected data as soon as possible after ITC and PRIME signed contracts for this evaluation so that the firms can answer recall questions about their business's situation before the start of the project.³ Our team successfully interviewed CEOs or high-level managers of the 39 NTFIII SMEs and 500 unsupported firms.⁴ Our sample includes about 50% of all BASIS members. The large sample of unsupported firms was used to analyse the role of BASIS in the sector.

Endline data were collected in October-November 2017 among 307 firms. The endline survey was conducted in October-November 2017, after the project finalised in June 2017.⁵ We selected a sample of the IT and ITES companies that participated in the midline survey including all 39 NTFIII SMEs.

³ A baseline survey could not be implemented, because the project had already been active for almost a year when the inception phase was completed.

⁴ The survey was implemented by Mitra and Associates, a local research company based in Dhaka. Before data collection, the field team approached 39 NTFIII firms and 847 non-NTFIII firms for conducting face-to-face interviews. 347 firms did not want to participate in the survey: 23 of them were closed, 100 were not interested in participating in the survey, 164 were busy, and interviews could not be arranged within the fieldwork period; 60 firms' mobile/telephone numbers collected from BASIS and company website were closed or wrong.

⁵ The maximum and minimum interview times were 1 hour 25 minutes and 1 hour respectively. It may take perhaps an additional year to observe the full impacts of the project. However, we choose to conduct the survey as soon as the project finishes, because the firms may be reluctant to participate in an ITC survey a year later.

Thirty-six out of 39 NTFIII SMEs and 271 non-NTFIII SMEs participated in the survey prepared by the PRIME team.

Table 2.1 Overview of Data Sources

	NTFIII SMEs	Non-NTFIII SMEs	Total
Midline survey	39	500	539
Endline survey	36	271	307

The firm survey included a wide range of support, practice and performance questions. The survey include questions on company characteristics, business knowledge, business practices, business performance, exports, BASIS services used, and employment characteristics.⁶ The administration of the NTFIII Bangladesh project shared their comments about the indicators before the implementation of the midline survey instrument. Both midline and endline survey instruments were tested through pilot surveys with randomly selected businesses from BASIS membership registry. To eliminate any miscommunication between enumerators and respondents a Bengali translation company translated the survey from English to Bengali.⁷ The survey was applied by smartphones using the ODK software.

Information about the firm's situation when the project started were collected by recall questions in the midline survey. Using the information from recall questions, we were able to compare the performance of NTFIII and non-NTFIII firm before and after the project and estimate the NTFIII project's impact on business performance.

In-depth interviews were used to support empirical findings from the statistical analysis. We visited nine supported SMEs during the field trip in June 2017 to conduct in-depth interviews. For the visits, The NTFIII project administration selected the SMEs that they believed benefited either most or least from the project. The visits were conducted together with the project administration; we note that this may have biased the responses of the SMEs.

⁶ The surveys inquired about the current knowledge in various business areas, the business practices, export markets, and employment as well as the sales, export performance, and profits last year.

⁷ Another Bengali expert fluent in English checked the translation to eliminate any mistakes.

The interviews were conducted with the CEOs of the SMEs. In the interviews, the following open-ended questions were directed to the participants to collect more in-depth and elaborate information than the information collected by surveys:

- What did you learn from the NTFIII project on business strategy, production & operations, management & HR, marketing/sales, and exporting?
- What changed in the SMEs as a result of the project?
- Could you apply things that you learned in the NTFIII project in the business?
- Did the NTFIII PROJECT activities give you insights into specific challenges/problems in your company that you were not previously aware of? If so, which challenges/problems?

2.4 Data Analysis

ITC's contribution to BASIS was analysed by linking institutional support to export performance of SMEs. To analyse the contribution of institutional support provided to BASIS we used various analysis and data sources. First, we used information from the interviews with ITC project administration and staff, meetings with BASIS members and NTFIII project reports. Second, to analyse the relationship between the services, business practices, and export performance, we used detailed information from midline data. Midline data includes detailed information about the main services offered by BASIS to the sector. Third, using the sample of supported and unsupported SMEs, we assessed the awareness about and the use of BASIS services. Fourth, we also asked about the client satisfaction with these services. Finally, we tested whether the use of BASIS services or training is related to business practices and export performance.

The evaluation at firm level built on matching difference in differences analysis. We used a so-called 'matching difference in differences analysis' to estimate the direct impact of NTFIII on supported SMEs. This means we first determined the differences among business characteristics of NTFIII SMEs and non-NTFIII SMEs in terms of firm characteristics: size, sales, female ownership, and exports in the baseline. Then we estimated a propensity score by using these characteristics. We matched each NTFIII SME with the nearest non-NTFIII SME by using the propensity score and discarded the non-matched

firms. We compared the change in the export and business practices, exports, and sales, and employment performances of NTFIII SMEs with matched non-NTFIII firms from 2014 to 2017.⁸

This evaluation assessed the contribution of the NTFIII project to the outcome indicators related to various Sustainable Development Goals (SDGs). This evaluation assessed the contribution of the NTFIII project on the outcome indicators related to the following SDGs: gender equality (SDG5), decent work and economic growth (SDG8), industry, innovation, and infrastructure (SDG9); reduced inequality (SDG10). Table 2.2 summarises the match between the outcome indicators that are used in the study and the SDG areas they correspond to.

Table 2.2 Outcome indicators and corresponding SDG areas

Outcome areas	SDG area(s)
<i>Business knowledge, practice, and performance:</i> Contribution of ITC to knowledge and practices in various areas of doing business.	SDG8 SDG9
<i>Export and business performance outcomes:</i> fraction of exporters, number of foreign clients, number of long-term foreign clients, number of new export markets, change in the share of exports in sales, growth in the annual exports, the growth in the annual sales, relative change in the profits	SDG8, SDG9
Improvement in the capacity of Business Organisations and services delivery of TSIs	SDG9
The growth in permanent (female) employment, and temporary (female) employment.	SDG5, SDG10

A validation workshop and qualitative interviews were used to verify midline results. In June 2017, the midline results were shared and validated during workshops at BASIS headquarters and the Embassy of the Netherlands in Dhaka. In addition, we held in-depth interviews with the business owners that participated in the project. These discussions were used to interpret further and validate the findings.

⁸ The difference in differences matching estimates in this report show the average effect of the project on supported firms.

Caveats do exist in building the counterfactual but are mitigated as far as possible by using information from different sources. The caveats for the research are twofold. First, the matching difference in differences analysis relies on the assumption that the NTFIII SMEs and matched non-NTFIII SMEs have similar trends in the adoption of business practices, export, sales and employment performances before the implementation of the NTFIII project. An empirical test of this assumption is not possible, because data from a few years before the project are not available. Therefore, we support our findings by using information from in-depth interviews. Second, we argue that there is a relationship, but not a direct causality, between the use of BASIS services and export performances of the BASIS SMEs, because the exporting SMEs may use the BASIS services more. Third, given the timing of the evaluation, it should be taken into account that the observed changes, and contribution of ITC to those changes are short- and medium-term effects. Longer-term impacts and sustainability of impact cannot yet be observed. In the conclusion, we discuss this in more detail.



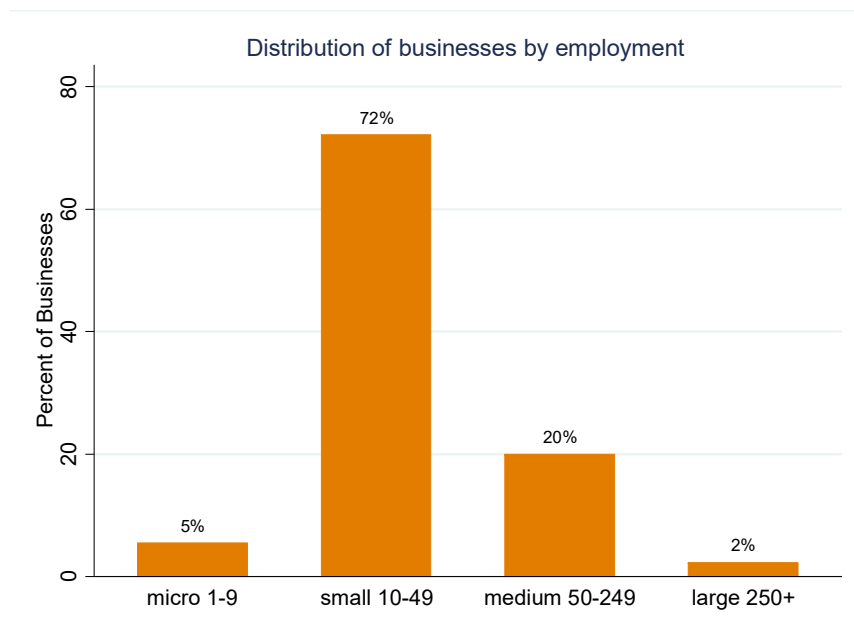
The Bangladesh IT and ITES sector

Chapter 3 The Bangladesh IT and ITES sector

3.1 Business characteristics of Bangladeshi IT/ITES firms

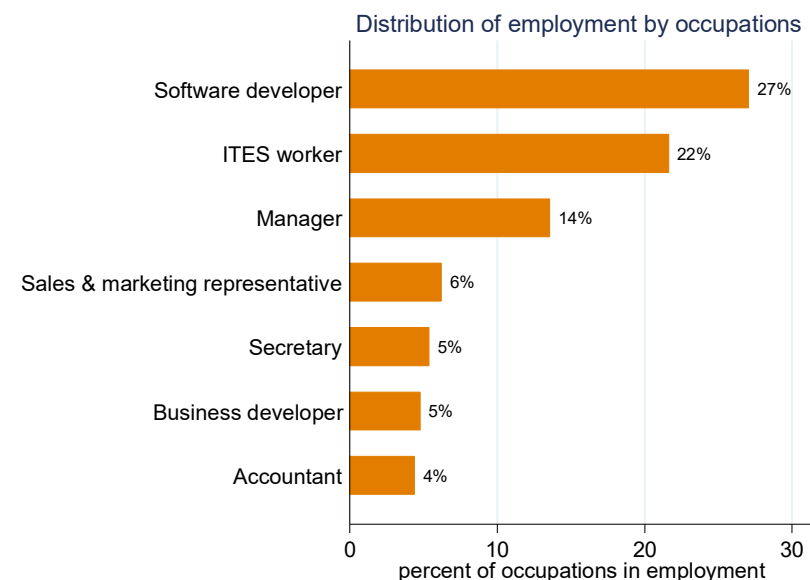
The majority of Bangladesh IT/ITES sector firms are small-sized firms (10-50 employees). Most firms have between 10 and 49 employees (72%), another 20% are medium-sized firms (between 50 and 249 employees), and another 5% employ fewer than 10 employees. Only 2% are large-sized firms (250+ employees) (Figure 3.1).

Figure 3.1 Distribution of firms by employment, in the baseline, midline survey results



The majority of workers in the sector are (skilled) software developers and (low-skilled) ITES workers. In the Bangladesh IT/ITES sector, 27% of employees work as software developers, which is mostly a high-skilled job (Figure 3.2). Another 22% of employees work as ITES workers, which is a less skilled job. Managerial positions are held by 14% of workers. The remainder of the employees is equally distributed among sales & marketing representative, secretary, business developer, and account occupations.

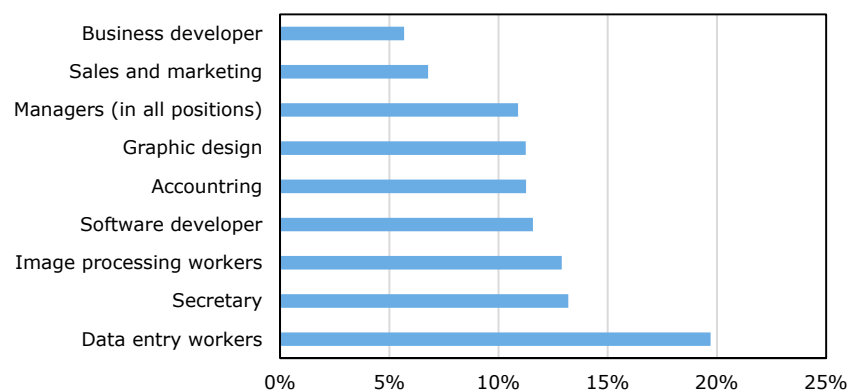
Figure 3.2 Distribution of employment by occupations, 2016, selected occupations, midline survey results



Over two-thirds of the workforce consist of permanent male workers; female workers have a limited role. Most employees are male with a permanent contract. Eighty-seven per cent of the employees has a permanent contract⁹ in the sector, out of which 70% are male and 17 are female. Thirteen per cent of the workforce has a temporary contract of which 10% male and 3% female. The fraction of total female employment is 21% and low compared to the overall share of a women in labour force of Bangladesh in 2014 (28%).¹⁰ Overall 4% of the business owners are female.

Women are mostly active in low-skilled work, and to a lower degree in skilled work. The fraction of female employment is lowest in business development and sales and marketing occupations (about 6-7%) and highest (about 20%) in data entry occupation (Figure 3.3), which includes a routine low skill task to digitalise written resources. This implies that the female workers are mostly active in the low skill occupations.

Figure 3.3 Fraction of female employees by occupation, 2016, results from midline survey



⁹ Permanent workers are all paid employees that work full-time and have a yearly renewal of their employment contract.

¹⁰ World Bank Database (2018) retrieved from <https://data.worldbank.org/indicator/SL.TLF.TOTL.FE.ZS?end=2017&locations=BD&start=2014> on 12 January 2018.

Web application, business process outsourcing, software and mobile application development are the main areas of expertise in the sector.

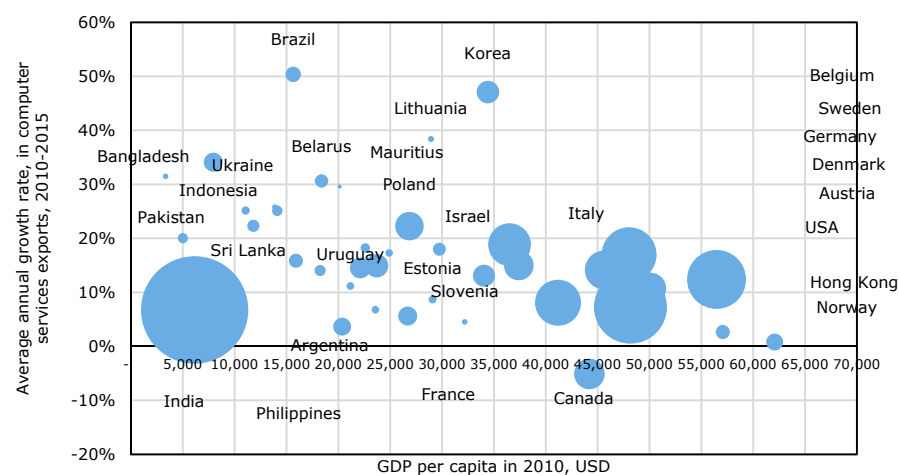
Over 20% of the firms have expertise in Web application (29%), business process outsourcing (25%), software and mobile application development (23% and 20%). The sector has the least expertise in hosted valuable services (3%), embedded software development (5%), software integration (6%), and gaming (6%)

3.2 Export performance of Bangladeshi IT/ITES firms

Export of the Bangladesh IT/ITES sector is growing strongly, but not competing in terms of volumes with larger exporting countries. The official numbers from ITC/UNCTAD/WTO show that exports of the sector grew by over 30% annually from 2010-2015 (Figure 3.4). This growth rate is three times higher than the average global growth rate in the sector. It is also higher than larger countries with similar GDPs per capita including India, Pakistan, and Indonesia though not in terms of volume.

IT/ITES BASIS members grew between 2014 and 2016 in terms of employees, sales and export. We analyse the performance of the firms between 2014 and 2016 using data from BASIS members that participated in the midline and endline survey. In three years, the average firm in the sector employed 14 new employees. From 2014 to 2016, the average annual sales increased by approximately USD 60 thousand and exports by 16%. On average firms started exporting to one new market.

Figure 3.4 Average annual export growth in computer services export, 2010-2015 and baseline GDP per capita at 2010¹¹ for selected countries: The size of the dots indicate the volume of the exports



Data source: GDP per capita is from World Bank database, computer services data is from ITC, UNCTAD, WTO trade in services database. Annual export growth in computer services export is own calculations.

Before the start of the NTFIII project in Bangladesh, half of the firms in the sector had export experience. In 2014, the exporting firms reported that 46% of their sales came from exports. A 29% of their exports go to the European markets. An average firm in the sector exports to two different countries. The most important markets of the Bangladesh IT and ITES sector firms are the USA (61%) and the UK (48%) followed by Canada (32%) and Australia (27%) (Figure 3.5). About 20% of exporting firms have business contracts with NTFIII target markets: Denmark (24%), Germany (23%), and the Netherlands (19%) in addition to the UK.

Many firms are willing to export (to new markets) but are constrained by lack of information and strong competition. In the midline survey,

¹¹ We investigate export performance of the countries with similar GDP levels in this figure. Increase in exports may lead to an increase in the GDP per capita. To eliminate this confounding factor, we use GDP per capita levels in 2010.

62% of the 253 firms that did not export services yet wanted to export. Eighty per cent of 270 firms that were already exporting considered exporting to new markets. However, firms emphasised three important barriers to export (Table 3.1): (i) inadequate information about potential export partners; (ii) inadequate information about the type of products and services the foreign importers desire, and (iii) high competition from other countries.

Figure 3.5 Distribution of firms by export markets in 2016, only exporting companies and markets that are over 5% of firms exports to, results from midline survey

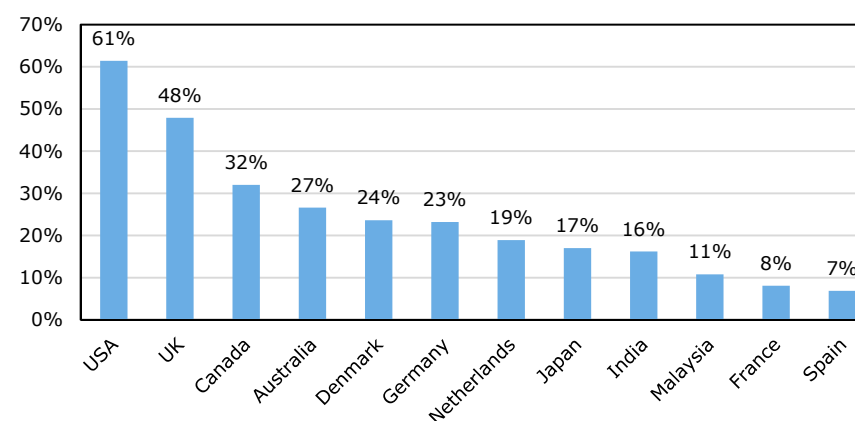


Table 3.1 Distribution of firms with barriers to export, results from midline survey

Rank	Bottleneck	Per cent of firms
1	Inadequate information about potential clients abroad	46
2	Inadequate information about desired product and services	43
3	High competition from foreign firms	40
4	Inadequate information about the legal requirements for exporting	36
5	Risk of not getting paid by the importer	28
6	Tariffs and quotas in the foreign markets	15
7	Low demand for my services in foreign markets	6

3.3 Characteristics of selected NTFIII SMEs

The NTFIII project in Bangladesh selected high export potential companies. Table 3.2 compares the business characteristics at the baseline of NTFIII SMEs to two groups of non-NTFIII SMEs by using recall information from the midline survey: 1) SMEs that applied but that were not accepted to the programme, and 2) SMEs that did not apply to the programme. The comparison is made in terms of business size, sales, female ownership, number of export destinations, and share of exports in sales. The NTFIII project in Bangladesh clearly selected high export potential companies. First, the median NTFIII firm size was about double of non-NTFIII SMEs. Second, median NTFIII firm sales were about USD 223 thousand which is 1.5 times higher than that of rejected SMEs, and two times of SMEs that did not apply. Third, NTFIII SMEs reported that the share of exports in their sales was around 62% versus a share of 32% among rejected applicants and 19% among non-applicants. Finally, NTFIII SMEs also exported to more markets; a median 4.4 markets versus 1.8 for rejected applicants and one for non-applicants.

Few SMEs exist that meet export readiness selection criteria and were supported by NTFIII. We use the criteria to match NTFIII SMEs with non-supported SMEs for our analysis (see <http://www.intracen.org/NTF-III-Bangladesh-Companies/>) and estimate the effect of NTFIII project on supported SMEs. The matching analysis shows that the number of not supported SMEs that are big, specialised on exports with female managers is low in the sector. This implies that the NTFIII project in Bangladesh supported a very special group of SMEs from the Bangladesh IT and ITES sector.

Empirical results confirm that SMEs with female managers were given priority in the selection to the project. The fraction of NTFIII SMEs with female owners was about 13%. This is nine percentage points higher than the fraction of female-owned SMEs in non-NTFIII SMEs. However, the difference in the share of female employment between NTFIII and non-NTFIII SMEs is not statistically different than zero.¹² These findings are in line with the selection criteria of NTFIII SMEs.

¹² We note that the difference may not be statistically different due to low number of NTFIII SMEs in the study.

Table 3.2 Comparison of business characteristics of NTFIII SMEs and non-NTFIII SMEs before the NTFIII project, 2014, results from midline survey

	<i>NTFIII</i>		<i>Non-NTFIII SMEs</i>				<i>Comparison</i>	
			<i>Rejected applicants NTFIII</i>		<i>Non-applicants</i>		<i>Rejected applicants vs. NTFIII</i>	<i>Non-applicants vs. NTFIII</i>
	<i>N</i>	<i>Median/average</i>	<i>N</i>	<i>Median/average</i>	<i>N</i>	<i>Median</i>		
Firm size (Total employment), median	39	49.0	58	23	409	21.0	26.0^	28.0^
Annual sales (USD 1,000), median	37	222.8	34	156.2	254	91.8	66.6	131.1^
Average share of exports in sales (%)	38	62.7	43	32.3	380	19.6	30.3***	43.0***
Average # of exporting countries	39	4.4	53	1.8	404	1.0	2.5***	3.4***
Average female ownership (%)	39	12.8	58	3.4	415	3.4	9.4 *	9.4***
Average fraction of female workers (%)	39	13.4	56	16.7	400	19.7	-3.3	-6.3

*** statistically significant at 1% level, ** statistically significant at 5% level, * statistically significant at 10% level. ^ indicates statistical significance from the comparison of medians between 2 groups.

A close-up photograph of a person's hands and face as they work on a dense, chaotic network of colorful Ethernet cables (blue, orange, purple, green, pink, grey) plugged into a server rack. The person is wearing a white shirt with blue stripes. A large white number '4' is overlaid on the right side of the image, partially covering the person's face and the cables. The background is slightly blurred, showing more of the server rack.

4

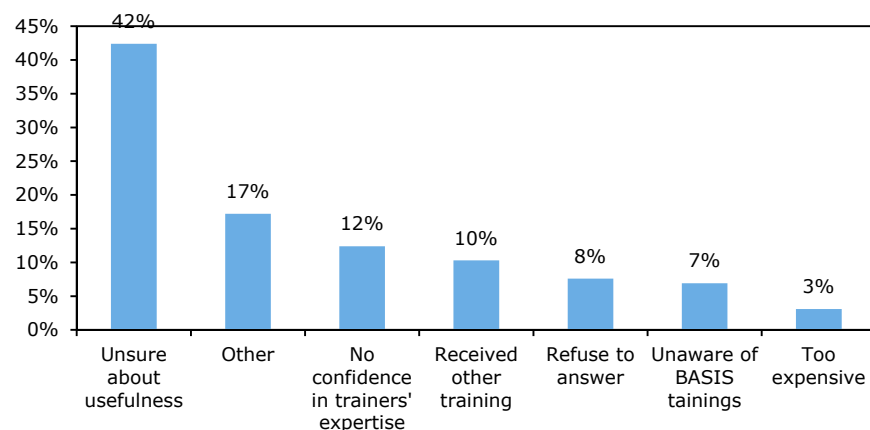
ITC's contribution
to SMEs through
BASIS

Chapter 4 ITC's contribution to SMEs through BASIS

4.1 Services and training delivered by BASIS¹³

BASIS provides a variety of training and services. We categorised BASIS training into four groups: technical training, project management training, export marketing plan training and executive level training. The BASIS services include corporate tax exemption, being represented in the IT catalog, discount on SoftExpo fair participation, sector advocacy services, import remittance, e-commerce Alliance Activity, Standard Chartered Bank Account Services (SCBEQR) account service, BASIS/BRAC credit card, virtual card for DBBL, and office space services.

Figure 4.1 Fraction of firms by reasons of not participating in BASIS trainings, firms that have not participated in BASIS/BITM trainings are used, results from midline survey.



¹³ This Chapter is mainly based on Brown Sophie (2017), Impact of Business Association Services and Training Programs on Export Performance: Evidence from Bangladesh IT and ITES Sector, Master thesis submitted to University of St. Gallen.

More than two-thirds of BASIS members sector have benefited from a BASIS service or training. As of 2016, 72% of the firms that participated in the midline survey had used a BASIS service or participated in a training. About one third of the firms participated in both.¹⁴

Uncertainty about the usefulness of BASIS training is the most important reason for not participating. About 42% of firms have not participated in any BASIS training. Figure 4.1 shows the distribution of reasons for not participating. Forty-two per cent of firms that did not participate in the training state that they are not sure about the usefulness of the BASIS training. Another 12% of firms that did not participate in the training state they have not participated because they do not have confidence in trainers' expertise.

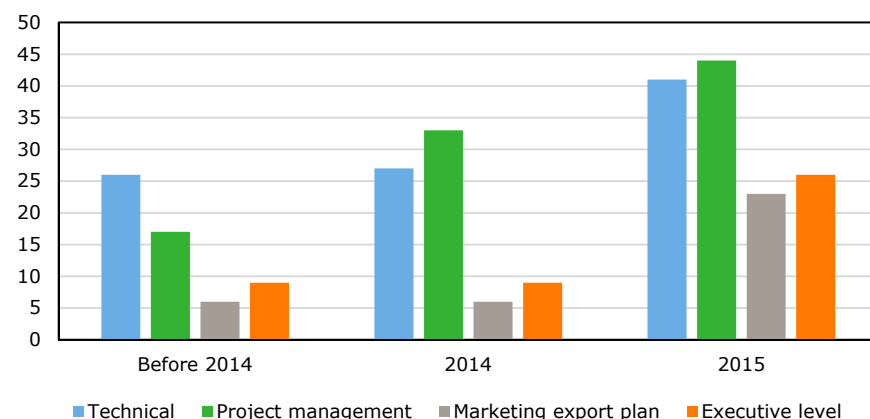
ITC's institutional support to BASIS aimed to improve overall use and the quality of BASIS services, and increased participation to the training. ITC's institutional support helped BASIS to establish a results measurement system that enabled BASIS to monitor its internal performance. Moreover, with the institutional support, BASIS established focus groups to improve relationships with members and service management. We expect that these changes in BASIS, thanks to ITC support will increase the use and the quality of BASIS services and participation to trainings (NTFIII programme progress reports; 2014, 2015, and 2016).

Participation in BASIS training improved during the course of ITC support. Firms participate most often in the Project Management training, which offers a worldwide recognised PMP certificate. It gives firms the opportunity to learn a variety of management skills in leading and managing projects with timing, budget and resource constraints. The second most popular training is the technical training providing advice and skills on different

¹⁴ We have not used endline survey for this analysis, because only a non-randomly selected sub-sample of large BASIS member population participated in that survey.

IT areas such as Operating System Development, Java, software development, SQL, design, etc. The total number of firms in our sample that participated in training increased each year (Figure 4.2). Participants to the export marketing plan training, which was facilitated by ITC and BASIS, increased fast after the NTFTIII project started in 2014; from 2014 to 2015 17 new firms in our sample participated in the training.

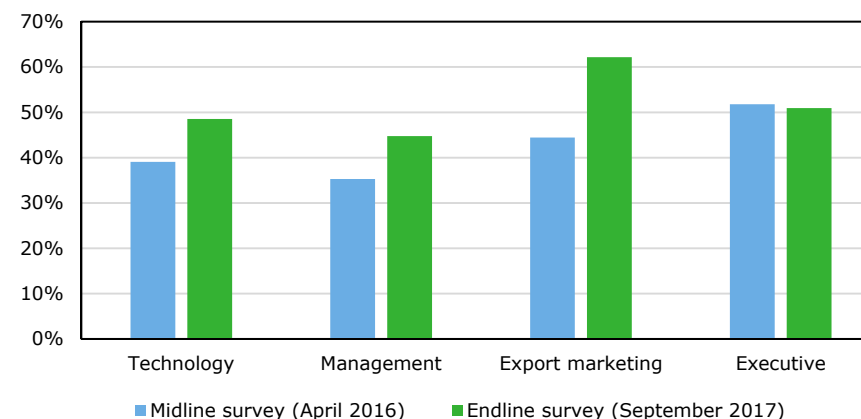
Figure 4.2 Number of firms by training and year, *results from midline survey*



In the period that BASIS received ITC's institutional support, the firms have started to perceive BASIS services as more useful. Of the different trainings provided, firms find the Export Marketing most useful (Figure 4.3). ITC (and CBI) facilitated the export marketing training by training the trainers of BASIS-BITM. Sixty-two per cent of the firms that participate in the export marketing training found the training useful versus less than 52% of the firms that participate in other trainings. The fraction of firms that find the export marketing training useful increased by 18 percentage points (from 44% to 62%) while the fraction of firms that find the technology and management training increased by 10 percentage points. These increases are statistically significant at 5% level. Findings from the in-depth interviews show that some SMEs may not have found the training useful because they think it does not

have an up-to-date curriculum or was not designed according to the needs of SMEs.

Figure 4.3 Fraction of firms that have found BASIS training useful, *results from midline survey*



The use of BASIS services among firms that are aware of the services is below 50%, although the firms that use them are satisfied. About 60% of surveyed firms benefited from at least one of the services offered by BASIS. Table 4.1 summarises the level of awareness, number of firms that used it, usage rate (share of users/share of aware firms) and satisfaction for each service. Awareness and use of services are highest for corporate tax exemption and lowest for SCB EQR account service;¹⁵ 52% of firms use tax exemption service of BASIS providing corporate tax exemption until June 2019 for BASIS members. For most services usage rate among the firms that are aware of the services is below 50%. Satisfaction rates, however, are high; firms which found the service effective for the business is above 95% for all services.

¹⁵ BASIS and the Standard Chartered Bank offer a Foreign Currency Exporter's Retention Quota (ERQ) Account and Taka Account to individuals, firms and professionals involved in service export in non-physical form such as business services, research services, web and software development, etc. The facility allows the customer to keep the received payments in both foreign (USD) and local (BDT) currencies and allows for easy transfer of the money abroad.

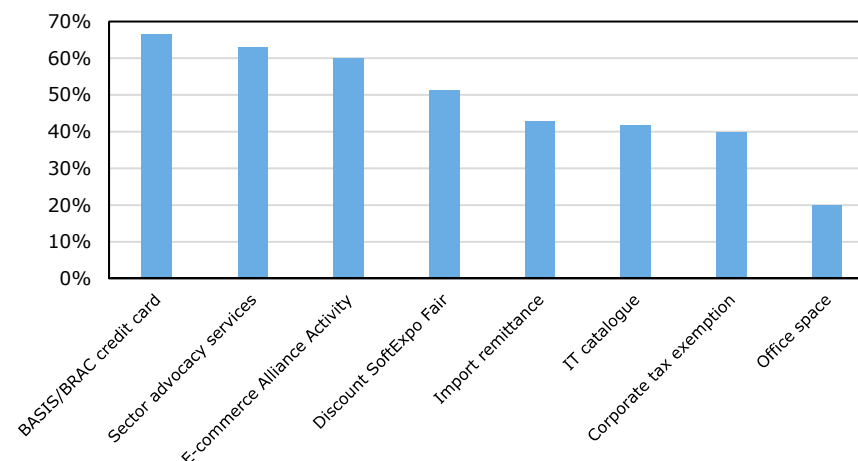
Table 4.1 Service awareness, usage, satisfaction rate for BASIS services, midline survey

	Awareness	Use	Use among firms that are aware of the services	Satisfaction rate
Corporate tax exemption	74%	39%	52%	98%
IT catalogue use	68%	34%	50%	97%
Discount SoftExpo Fair	68%	33%	48%	99%
Sector advocacy services	69%	32%	46%	97%
Import remittance	60%	26%	44%	99%
E-commerce Alliance Activity	61%	26%	43%	98%
SCB EQR account service	52%	17%	33%	100%
BASIS/BRAC credit card	66%	22%	33%	96%
Virtual card for DBBL	61%	20%	32%	97%
Office space	68%	19%	28%	96%

In the period of 2014-2017 BASIS services reached more firms with all its services. Figure 4.4 shows the growth in the use of BASIS services from 2014 to 2017. The use of BASIS/BRAC credit services, sector advocacy services and e-commerce alliance activity grew over 60%. There was also a strong increase in the use of the offered discount to participate in Soft-Expo fair (51%), import remittance¹⁶ (43%), IT catalog services (42%), and corporate tax exemption services (40%). The increase in the use of office space supplied by BASIS is the least although still 20%. In this period BASIS was supported by ITC.

¹⁶ Bangladesh government controls imports and capital outflow, so the firms cannot freely purchase software from other countries. Import remittances provided by BASIS help firm to purchase software licences from other countries. Any organisation registered or incorporated in Bangladesh and purchasing software through electronic delivery, can apply for this service.

Figure 4.4 The growth rate in the use of BASIS services from 2014-2017, calculations by using midline and endline survey.



4.2 The relationship between use of BASIS services and training with export competitiveness

BASIS contributes to export performance through different types of training. We compare the export performance of firms that participate in BASIS trainings to those that do not. We measure export performance through export propensity (whether a company exports or not) and share of export in total sales (0-100).¹⁷ To compare similar participating and not participating firms in terms of firm size, productivity, age, and foreign ownership we use a matching technique.¹⁸ Tables 4.2 reports the results. Firms that participate in one of the BASIS trainings are 28 percentage points more likely to sell their

¹⁷ We also measure the export performance through exports and sales and do not find any significant relationship between using BASIS services and participation in BASIS trainings and export and sales performance of the firms. This may be because firms did not report their sales numbers.

¹⁸ The matching characteristics for BASIS include foreign ownership instead of female ownership, because the use of BASIS services is more likely to be related to foreign ownership than having a female owner. We report nearest neighbour matching to compare the matched firms. The results are robust to using other estimation methods such as OLS, OLS with controls, Kernel, and radius.

services in foreign markets. Also, the share of exports in sales is about 11 percentage points higher for the firms that participate in training than the firms that have not participated in a BASIS training.

Table 4.2 The difference in the export performance between the firms that have and that have not participated in BASIS training by training type, comparison of matched firms, estimates are from midline survey.

Training category	Export propensity		The share of exports in total sales (0-100)	
	A significant difference in the levels between participating and not participating firms in 2015	Size of the difference (percentage points)	A significant difference in the levels between participating and not participating firms in 2015	Size of the difference (percentage points)
Any BASIS training	+ and statistically different than zero at 10 per cent level	28 percentage points	+ and statistically different than zero	11 percentage points
Export marketing plan training	+ and statistically different than zero at 10 per cent level	37 percentage points	+ but not statistically different than zero	
Project management training	+ but not statistically different than zero at 10 per cent level		+ but not statistically different than zero	
Technical training	+ and statistically different than zero at 10 per cent level	27 percentage points higher	+ but not statistically different than zero	
Executive training	+ but not statistically different than zero	-	+ but not statistically different than zero	

ITC contributes to the export performance of the firms by also facilitating the export marketing plan training in BASIS. The firms that take part in the export marketing plan and technical training are more likely to

export than others. Particularly the firms that have taken part in export marketing plan training are 37 percentage points more likely to export when compared with firms that did not take part in the training.

Table 4.2 (continued) The difference in export performance between the firms that have and that have not used BASIS services by service type, comparison of matched firms by firm size, age, productivity, and foreign ownership constant, estimates are from midline survey.

Training category	Export propensity		The share of exports in total sales (0-100)	
	Difference in levels between using and not- using firms in 2015	Size of the difference (percentage points)	Difference in levels between using and not- using firms in 2015	Size of the difference (percentage points)
Used any BASIS service	+ but not statistically different than zero		+ (not significant)	
Used BASIS financial services (BRAC credit card, SCB ERQ account, virtual card)	+ (significant) at 10 per cent level	27%	+ (not significant)	22%
Used BASIS promotional services (Advocacy, a company profile in IT catalog)	+ (not significant)	16%	+ (not significant)	12%
Used BASIS networking services (E-commerce alliance activities, discounted participation fee)	+ (not significant)		+ (not significant)	
Used other BASIS services (Tax exemption, office space, import remittance)	+ (not significant)		+ (significant) at 10 per cent level	16%

The use of BASIS financial services and promotional services is positively related to export performance. Overall, using any BASIS service and export performance are positively associated, but this association is not statistically different from zero (Table 4.3). Firms that use export promotion services are 16 percentage points more likely to export, and their share of exports in sales is 12 percentage points higher than in the firms that do not use these services and have similar characteristics. The firms that used BASIS financial services are also more likely to export and share of exports in sales is higher. Here we note that these result do not imply a direct causal relation from the use of BASIS services to exports. The firms that have already exported may use the promotional services more than other firms. We also note that we use data from the midline survey to measure the relationship between export performance and BASIS services and trainings. This relationship might have gotten stronger but was not captured in the endline survey.

5



ITC's contribution to knowledge and business practices

Chapter 5 ITC's contribution to changes in knowledge and business practices

5.1 Changes in knowledge and practices

The NTFIII project contributed to a change in knowledge and business practices for most SMEs. For about 80% of the NTFIII SMEs, the project contributed to one or multiple areas of knowledge and business practices. From 2014 to 2017, 29% of SMEs reported a positive change in knowledge which was influenced much or very much by NTFIII, and 54% of SMEs report a positive change in knowledge which was influenced little or somewhat by NTFIII. The fraction of SMEs that report no positive change in knowledge and/or no NTFIII influence on change is 17%. Results were very similar for the contribution to practices.

Figure 5.1 Perceived NTFIII project contribution to change in knowledge, 2014-2017, results from endline survey

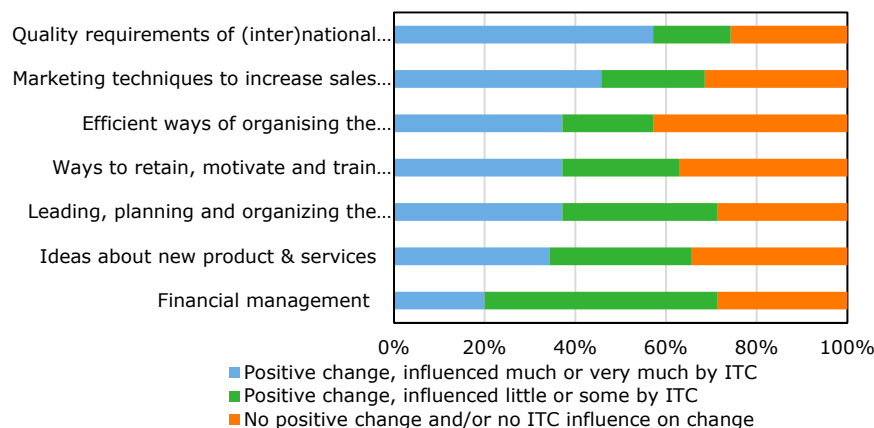
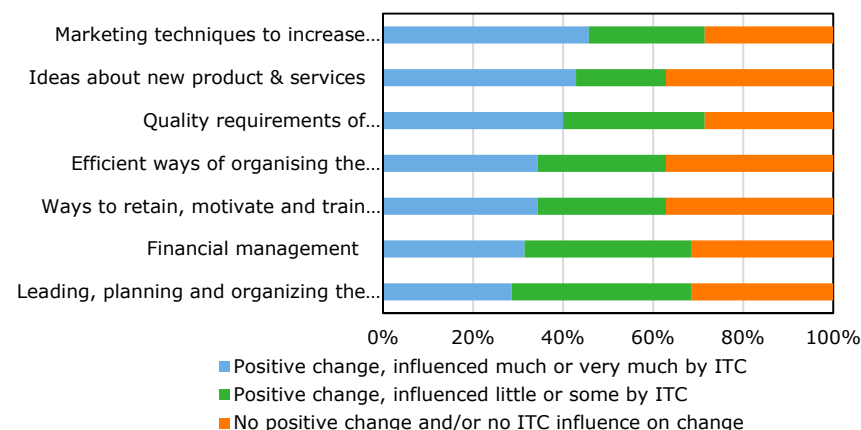


Figure 5.2 Perceived NTFIII project contribution to change in practices, 2014-2017, results from endline survey



Most contribution of the NTFIII project on knowledge is reported in the areas of quality requirements of international buyers and marketing techniques to increase sales. The share of SMEs that report a positive change in knowledge in these areas and much or very much influenced by the NTFIII project on that change is more than 40% (Figures 5.1 and 5.2). Forty-three per cent of the NTFIII SMEs report a positive change in practices and much or very much influence of the NTFIII project on ideas about new products and services. The NTFIII project's contribution to knowledge is lowest in the area of financial management. The contribution to practices is the lowest in the area of leading, planning and organising the business. About 20% of NTFIII SMEs reported a positive change (very) much influenced by ITC in financial management knowledge and about 29% in

leading and planning business practices. This is not surprising because the project focuses less on these areas compared to others. Our statistical analysis shows that the relationship between the contribution to knowledge and practice areas is strong,¹⁹ implying that change in knowledge leads to improved business practices in NTFIII SMEs.

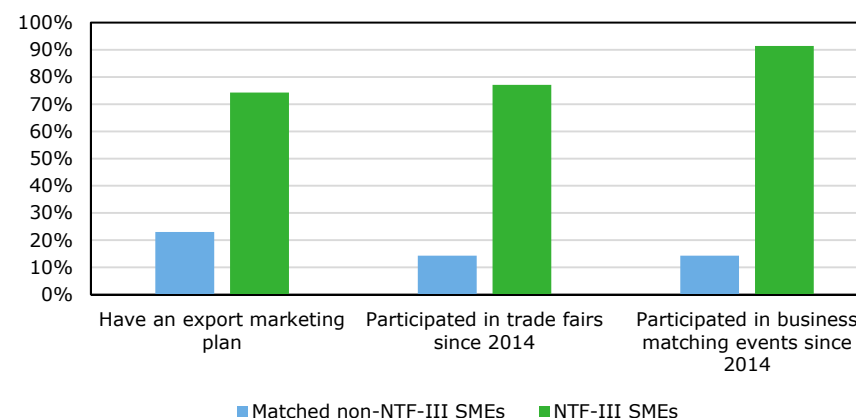
5.2 Adoption of business practices

The NTFIII project contributed to export practices in three ways:

(i) Training and coaching SMEs to prepare firm-specific export marketing plans; (ii) facilitating the participation of NTFIII SMEs in trade fairs, and (iii) business matching events to meet (potential) clients. We compare NTFIII SMEs with unsupported SMEs that have a similar business size, export performance, and orientation towards female employees and owners (Figure 5.3). We find that about 74% of NTFIII SMEs have an export marketing plan while only 23% of the matched non-NTFIII SMEs have such a plan. Seventy-seven per cent of NTFIII SMEs participated in trade fairs, and 91% of NTFIII SMEs participated in business-matching events since 2014. However, the fraction of similar non-NTFIII SMEs that participated in these events since 2014 is much smaller (about 14%).²⁰ During these trade fairs and business matching events average NTFIII SMEs linked with about 13 new business contacts and signed three new contracts, showing that the NTFIII project increased the export potential of SMEs.

Most NTFIII SMEs found the export marketing plan support of ITC and business matching events organised by ITC very useful. Informal in-depth interviews with the project participants showed that while preparing the export marketing plan they prepared and improved their promotional materials and communication skills with the new clients. They also stated that they had the opportunity to participate in B2B matching events and trade fairs and to present their products and services in these events.

Figure 5.3 Fraction of SMEs that have an export marketing plan, that have participated in trade fairs, and that have participated in business matching events since 2014 by support, *estimates from endline survey*



NTFIII has a positive impact on the development of marketing plans.

To estimate the impact of NTFIII on good business practices such as record keeping, having verified financial statement, general marketing plan, social media account, etc. we compare the change in business practices of NTFIII SMEs from 2014 (before the project) to 2017 (after the project) with similar non-NTFIII SMEs. Table 5.1 presents the results. The estimates show that NTFIII has a positive impact on having a written marketing plan. The difference in difference estimate shows that NTFIII increases the likelihood of having a marketing plan by 42 percentage points.²¹ Thanks to the NTFIII SMEs improved financial verification and learning from clients. Similar non-NTFIII SMEs have also started to catch up from 2014 to 2017 in business practices such as having business promotion material (from 64% to 73%) and having a website (from 91% to 95%), while many NTFIII SMEs have already applied these practices at the beginning of the project

¹⁹ The correlation estimates for NTF contribution on knowledge and practices are above 0.5 for all knowledge areas except efficient organisation of business. All correlation estimates are statistically significant at the 1% level.

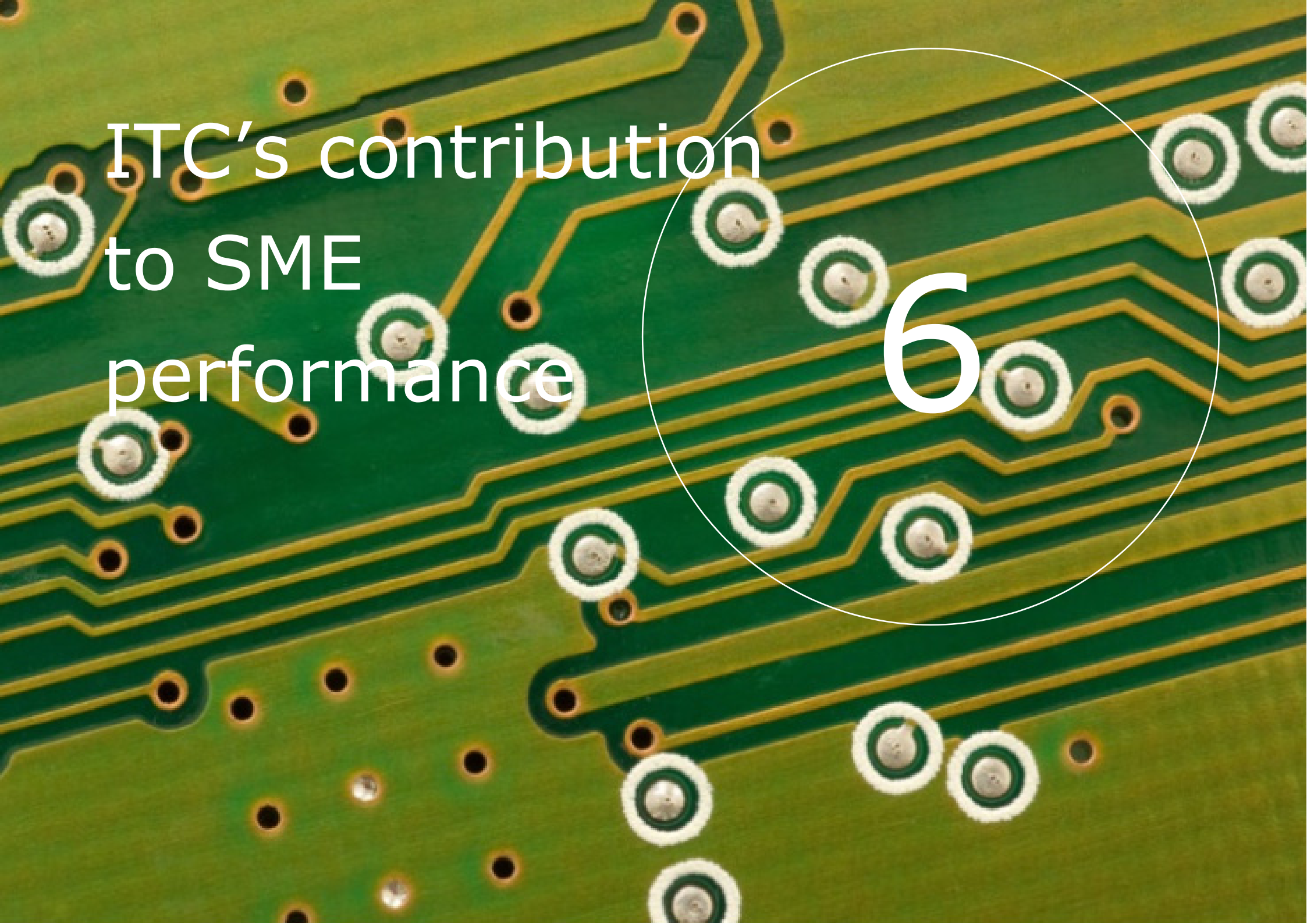
²⁰ These differences between NTFIII firms and matched non-NTFIII firms for export marketing plan and participation in trade fairs and business matching events are statistically significant. Results are available upon request.

²¹ The average treatment effect on treated estimates from propensity score matching are robust to these estimates but effect size is smaller about 11 percentage points.

Table 5.1 The average fraction of businesses adopted business practices by support, year, and the impact estimates by business practices, estimates from midline and endline survey.

Business practices	2014			2017			Difference in differences (6)-(3)
	(1)	(2)	(3)	(4)	(5)	(6)	
	Matched non-NTFIII SMEs	NTFIII SMEs	Difference (2)-(1)	Matched non-NTFIII SMEs	NTFIII SMEs	Difference (5)-(4)	
Record keeping via firm or computer	77%	89%	11%	82%	89%	7%	-5%
Verified financial statements	77%	94%	17%	55%	82%	28%	11%
Written marketing plan	77%	71%	-6%	50%	86%	36%	42%**
Website	91%	100%	9%	95%	100%	5%	-5%
Promotional material	64%	94%	31%	73%	91%	19%	-12%
Social media account	86%	100%	14%	86%	100%	14%	0%
Learning from client	86%	80%	-6%	91%	91%	1%	7%
Quality assurance system	68%	63%	-5%	82%	83%	1%	6%

* Statistically significant at 5 per cent level



ITC's contribution to SME performance

6

Chapter 6 ITC's contribution to SME performance

6.1 Export, business, and employment performances

NTFIII contributes to the likelihood of exporting. The fraction of exporters among NTFIII SMEs (89%) is higher than among matched non-NTFIII SMEs (60%) (Table 6.1) in 2016. NTFIII SMEs also have more foreign clients with long-term contracts than the matched non-NTFIII SMEs, and these differences are statistically significant.

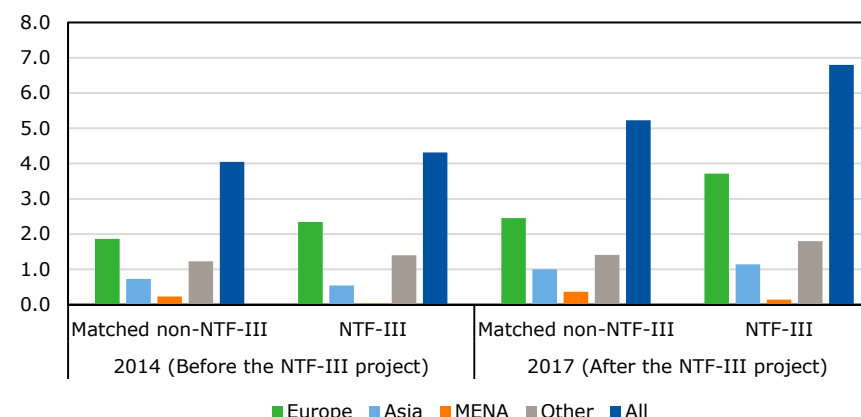
Table 6.1 The fraction of SMEs that export services and the number of foreign clients by support status, results from endline survey

	Matched non-NTFIII SMEs	NTFIII SMEs
The fraction of exporters in 2016	60%	89%
Number of foreign clients in 2016	9.9	10.0
Number of foreign clients with long-term contracts in 2016	3.8	5.9

NTFIII promotes entry to new export markets. We mapped the number of markets (countries) that NTFIII SMEs and non-NTFIII SMEs exported to in 2014 and 2017 by region (Figure 6.1). Before the project started, on average SMEs had exported to about 4 different markets. NTFIII SMEs entered into about 3 new export markets in total from 2014-2017 and had experience in 7 different export markets by 2017. However, non-NTFIII SMEs did not catch up with the new market entry performance of NTFIII SMEs; matched non-NTFIII SMEs entered into 1 new market from 2014-2017 and had experience in about 5 export markets by 2017. NTFIII SMEs were particularly successful in entering

European markets. Our more advanced models confirm that new (European) market entry is indeed an important impact area.

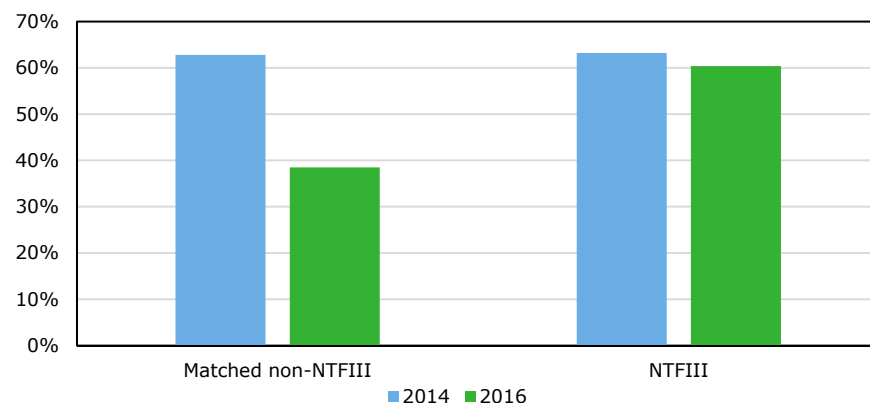
Figure 6.1 The number of markets (countries) that an average NTFIII and matched non-NTFIII SMEs have ever exported to, by support status, region and time, estimates from midline and endline survey.



The importance of export in the sales stayed similar for NTFIII SMEs while it decreased for non-NTFIII SMEs. The share of exports in the sales of NTFIII SMEs is about 60% in 2014 and 2016. However, the share of exports in the sales of non-supported SMEs decreased by 25 percentage points (63% to 38%) from 2014 to 2016 (Figure 6.2). This decrease might be explained by the increasing internal sales market; this was also confirmed by some SMEs during the in-depth interviews. Our statistical analysis of matching models shows that this difference is statistically significant. The share of European

markets in total exports also stayed similar for NTFIII SMEs while it decreased by 8 percentage points for non-NTFIII SMEs from 2015 to 2016.

Figure 6.2 The average share of exports in sales, by support status and year, estimates from midline and endline survey.



NTFIII SMEs perform better in export and sales than non-NTFIII SMEs, however the difference is not statistically significant. The annual exports of NTFIII SMEs grew by 109% from 2014-2017 while the annual exports of matched non-NTFIII SMEs grew by 69% (48%), implying that there is a 39 percentage point difference in the export performance between the two groups. However, we could not detect that this difference is statistically different from zero in our statistical analysis (Table 6.2). Two factors may cause the insignificance of these results. First, the measurement for exports and sales are from 2016, so we measure the project impact for a rather short period, two years after the project started.²² Second, our sales and export

²² Evidence from in-depth interviews shows that some NTFIII firms signed new contracts in 2017, supporting this argument.

measurements may be imprecise, as companies were reluctant to share sales data with the enumerators.²³

NTFIII contributed to generating permanent (female) employment.

The average employment with a permanent contract grew by 23% in NTFIII while it fell by 35% in similar non-NTFIII SMEs. The growth in the female employment is very similar to the overall employment (36%) for NTFIII SMEs and (-29%) for similar non-NTFIII SMEs. The statistical analysis shows that the difference between NTFIII and other similar SMEs in generating employment is statistically significant. For temporary employment, we cannot reach a robust finding. This implies that in a period where other SMEs decrease employment NTFIII SMEs employed new (female) employees.

Table 6.2 Growth in business outcomes before and after NTFIII project by the SME groups[±], estimates from midline and endline survey.

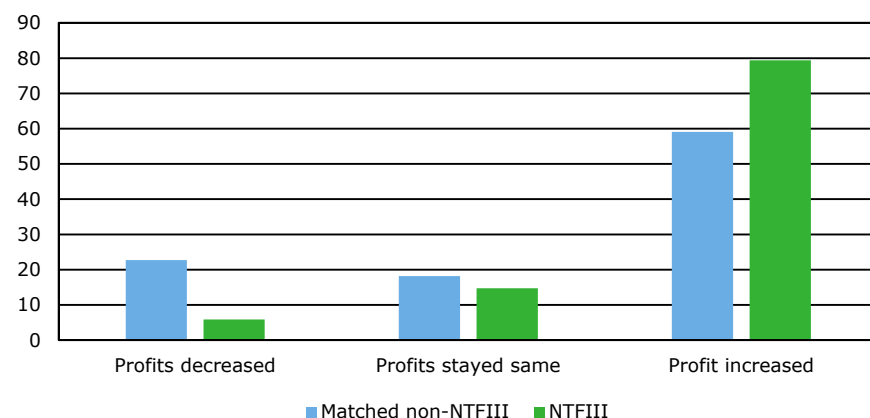
	NTFIII SMEs	Matched non-NTF SMEs	Difference
Annual exports	109%	69%	39%
Annual sales	83%	48%	35%
Permanent employment	23%	-35%	57%*
Temporary employment	-11%	9%	-20%
Permanent female employment	36%	-29%	65%*
Temporary female employment	17%	16%	1%

[±] For annual exports and sales estimates are from 2014-2016 period. For employment indicators they are from 2014-2017. * indicates statistical significance at 5% level. Estimates are from matching the difference in differences analysis.

NTFIII project also improves growth in business profits. The fraction of NTFIII SMEs that experienced a profit increase in 2016 relative to 2015 is about 30% higher than among the matched non-NTFIII SMEs (Figure 6.3), and this result is statistically significant according to our matching models.

²³ Many firms have not shared their (exact) sales (and thereby export) figures in the survey. This may be one of the reasons of not finding statistically significant estimates for sales figures.

Figure 6.3 The fraction of SMEs by support status and profit change in 2016 relative to last year, estimates from endline survey.



6.2 SME practices and export performance

Improvement in the adoption of export practices contributed to the increased export performance of NTFIII SMEs. We explore the relationship between the business and export practices adopted by NTFIII SMEs and the improved export performance of NTFIII SMEs through correlation analysis. We find all export practices to be positively correlated with access to new export markets, growth in the share of exports, and annual exports from 2014-2017 (Table 6.3). The strongest and statistically significant relationship is between participation in business matching events and growth in exports in 2014-2017. Having a written marketing plan is also significantly related to change in export intensity after the NTFIII programme.

Evidence from in-depth interviews confirms that marketing plan training by the NTFIII project changed business practices of the SMEs. Most businesses that participated in the interviews found the export marketing plan training very useful, because they prepared and improved their promotional material in the trainings and improved the communication with the new clients. Businesses have become more selective in the projects with their clients after the training. They now focus on longer-term projects.

Table 6.3 The correlation between practices in 2016, access to new export markets, growth in the share of exports in sales, and growth in exports from 2014-2017, estimates from endline survey.

Practices in 2016	New export markets, 2014-2017	Growth in the share of exports in sales, 2014-2016	Growth in exports, 2014-2016
Written marketing plan	0.15	0.30*	0.30
Participation in trade fair	0.22	0.08	0.14
Participation in the business matching events	0.05	0.13	0.37 [#]

[#] indicates statistical significance at 15% level.

Table 6.4 NTFIII direct support effect on estimates between practices, access to new export markets, growth in the share of exports in sales, and growth in exports from 2014-2017, estimates from midline and endline survey.

Group	NTFIII project effect (NTFIII SMEs vs. matched non-NTFIII SMEs)			
	New export markets, 2014-2017, number		The share of export markets, 2014-2017, percentage points	
	Estimate	Statistically different than zero at 5% level	Estimate	Statistically different than zero at 5% level
Big	1.1	No	6.3	No
Small	0.6	No	-4.5	No
Specialised on exports	1.65**	Yes	18.8	No
Not specialised on exports	0.89	No	-6.0	No

** indicates statistical significance at 5% level. Big(small) SMEs employ more(fewer) than 22 (sample median) employees. Specialised SMEs have a share of exports in sales more than 27%.

Programme participants enlarged their business network through the trade fairs and business matching events organised by NTFIII. Evidence from the interviews confirms that project participants stated that they linked up with new foreign clients in the business matching and trade fairs. Some participants were followed up by those new foreign clients and managed to close business deals with them. These events also had indirect networking effects. Some participants were referred by the new clients to other businesses, and they closed business deals with those as well.

The effect of the NTFIII project on export performance is more pronounced for SMEs that are specialised on exports, and smaller firms not specialised on exports did not benefit from the support as much.

We compare whether the project performs better in stimulating the export performance of the SMEs when the SMEs are specialised in exports (share of exports in sales was high before the programme) or bigger in terms of employment (Table 6.4). Within the sample of specialised SMEs, NTFIII SMEs started to export to about two more new markets than matched non-NTFIII SMEs and this difference is statistically significant. However, within the sample of not-specialised SMEs, NTFIII SMEs started to export to one more new market than the matched non-NTFIII SMEs. The impact of the project varies similarly between bigger and smaller SMEs. Nevertheless, none of these estimates is statistically significant.

Conclusions

7



Chapter 7 Conclusions

To unleash the full export potential of the Bangladesh IT and ITES sector, it is key to provide information about the export markets and to increase the competitiveness of the sector. Export of the IT/ITES sector of Bangladesh is growing strongly, but does not compete in terms of volume with larger exporting countries. Half of the firms in the sector are already exporters and many firms are willing to export (to new markets). However, strong competition and a lack of information about the export markets are the most important barriers to export.

NTFIII aims to enhance export competitiveness through capacity building of TSIs and SMEs and to create linkages in selected target export targets. The NTFIII project aimed to lower those barriers to export and increase the export competitiveness of the sector by institutional support to BASIS and by directly supporting selected SMEs with a series of export promotion activities. The project institutionally supported BASIS to improve service provision and quality and directly supported selected SMEs through facilitating B2B events and trade fairs, coaching sessions, and export promotion training for the SMEs.

The contribution of ITC to the export competitiveness is analysed using panel data from more than 300 SMEs. Four key assumptions underlying the project's intervention logic were identified related to a selection of high potential SMEs; the contribution of support to SMEs' knowledge and practices (direct and through BASIS); and increase in export performance. We analysed these assumptions using data from over 30 directly supported SMEs, 250 other firms in the IT/ITES sector and in-depth interviews. The counterfactual at firm level builds on a statistical comparison among NTFIII SMEs and non-NTFIII SMEs. ITC's contribution through BASIS was analysed by linking institutional support provided to export performance of SMEs.

The project directly supported SMEs that are bigger, more experienced in exporting services, and more likely to have a female owner than the

average firm in the sector. The first evaluation question is related to the assumption is that NTF III selected SMEs that are more likely to respond positively to support. The majority of Bangladesh IT/ITES sector firms are small-sized firms that employ skilled software developers and low-skilled ITES workers. The role of women is limited in the sector. Among these firms, the NTFIII project in Bangladesh selected export-ready SMEs with a larger number of employees and a higher share of exports in sales and gave priority to the SMEs with female managers in the selection for the project. This provides support for the assumption that SMEs that are more likely to respond to the support are selected for the NTFIII project.

ITC indirectly contributed to the export competitiveness of the sector through its institutional support BASIS. ITC's institutional support BASIS aimed at improving the services of BASIS to its members. A second evaluation question, therefore, related to the assumption that BASIS training and support enhanced firm knowledge and practices. During the course of the support, more members participated in BASIS training, benefited from the services and found BASIS training more useful. The PRIME research found that the use of BASIS services and participation in the training can contribute to the export competitiveness of the members. Particularly participation in exporting marketing plan training and the use of financial and promotional services of BASIS is positively associated with the export performance of the SMEs. Therefore, by helping BASIS to improve its service quality, ITC's institutional support contributed to the export performance of the sector.

Export promotion training improved SMEs' knowledge and business practices on marketing techniques and quality requirement of international buyers. A third evaluation question related to the assumption that individual firm coaching improves firm knowledge and practices. The findings from the research show that individual coaching to the SMEs and the training sessions made a positive contribution to the business knowledge and practices of SMEs. Almost all SMEs report at least one area to which NTFIII

project contributed. ITC improved business practices of SMEs that are key to improve export performance. SMEs that are supported by NTFIII are more likely to adopt improved business practices, such as participating in business matching events, trade fairs, and having a written (export) marketing plan that is key to improve export performance, than similar but not supported SMEs. The project improved the participation in business matching events by 75, having an export marketing plan by 50, and participation in trade fairs by 63 percentage points. The perceived project contribution on business areas like finance, ideas about new business practices, and leading and organising business was perceived to be lower.

The improved business practices in NTFIII stimulates the exports and business performance of NTFIII SMEs, particularly of SMEs that are specialised in exporting; however smaller SMEs that are not specialised in exporting do not benefit from the support as much. The

fourth and final evaluation related to the assumption that improvements in knowledge and business practices improve the SMEs' export performance. The business practices of having an export marketing plan, participation in trade fairs and business matching events help SMEs to enter 2 new export markets and increase the export and sales performances. The NTFIII project thus improves business profits. The effect of the project is more pronounced for the SMEs that are more specialised in exporting services than small SMEs or SMEs that are not specialised in exporting.

Increased export and profit improved total employment and led to employment of new female employees. The NTFIII project, on average, increased the permanent employment by 50% and the permanent female employment by 69%. This increase was the equivalent of about 20 new employees, of which 3 were female. The effect on female employment is important because the potential for female employment seems higher in the sector. For example, it is now 21% versus an overall average of 28% in Bangladesh.

Creation of new long-term contracts with foreign clients and permanent employment and improved services of BASIS may support the sustainability of programme impact in the long term. Through the direct support to selected SMEs, the project facilitated the generation of long-term contracts with foreign clients and permanent employment. Moreover, the sector organisation (BASIS's) service provision to its members improved over the course ITC's institutional support. These impacts can contribute to sustainability in the long term.

NTFIII may have spill-over effects through increased exports and employment in the sector. Our difference in differences analysis showed that ITC had a positive effect on the export and employment performance of the NTFIII SMEs, implying that without NTFIII export marketing plan trainings and business matching events the SMEs may not have increased the export performance and growth in employment. The increased exports and employment can generate spill-over effects to the Bangladesh economy through domestic supply chains of IT and ITES economy and increased household expenditures of the IT and ITES sector employees.

The potential for spill-over effects to other SMEs in the sector is, however, limited. ITC selected SMEs with high export potential that are more likely to respond to the support. Our matching analysis shows that there are few SMEs that are similar to the high export potential SMEs. Therefore it is not likely that many SMEs in the sector take up the good business practices that ITC introduced to the sector.

Overall, ITC contributed to the Sustainable Development Goals by promoting the export performance of the IT/ITES sector. NTFIII increased export competitiveness of the Bangladesh IT and ITES sector (SDG8 and SDG9) and permanent (female) employment (SDG5 and SDG10) through direct support to selected SMEs and ITC's institutional support to BASIS. This impact is expected to be sustainable for the 32 NTFIII SMEs that signed a long-term contract with the foreign clients and 23 NTFIII SMEs that employed new permanent employees from 2014 to 2017.

Recommendations

8



গ্রাহক সেবা নিশ্চিতকরণে
কম্পিউটার পণ্যের
বিক্রয়োত্তর সেবা
সর্বোচ্চ ১ বছর
কার্যকর হয়েছে ১লা ডিসেম্বর ২০১৪

গ্রাহক সেবা নিশ্চিতকরণে
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Chapter 8 Recommendations

ITC should benefit from the structure and components of the NTFIII project in Bangladesh in the implementation of future projects. The evaluation shows that NTFIII in Bangladesh improved the business practices of supported SMEs which stimulated exports and business performance. Specifically, SMEs that were specialised in exporting benefited most from the project. Therefore, ITC should utilise the experiences from the NTFIII project in Bangladesh, particularly in the development of export marketing plans for SMEs and successful business matching events, in future projects. One area where these programmes could improve in relates to female employment. New programme components may help to promote female employment in countries similar to Bangladesh.

ITC could increase their impact at sector level by differentiating in project components to also meet SMEs that are less experienced in exporting. NTFIII in Bangladesh supported a small and special group of SMEs that are bigger and more experienced in exporting; and, on average, had a high impact on SMEs that are specialised in exporting. For a greater aggregate sector level impact, ITC could target a larger number of SMEs including smaller firms that are not experienced in exporting. This requires that the project components should be adapted according to the needs of those firms. For instance, the project may offer capacity building activities such as export marketing plan training to the firms not experienced in exports while offering participation in business matching events only to the firms experienced in exporting services.

ITC may increase contribution to business practices by emphasising more on financial management, human resources, and business organisation. The evaluation shows that the NTFIII project in Bangladesh contributed to the practices in marketing techniques and quality requirements, but less to practices in financial management, human resources, and business organisation. This corresponds to the overall view of SMEs as 'technical entities'. However, SMEs may be better able to translate new knowledge and

practices into improved export positioning, especially on the long run, if general areas of running a business are also improved.

ITC could improve their support to TSIs, and thus their impact in the sector, by helping TSIs to raise awareness of their services. Our findings show that uncertainty and not being aware of TSI services are major bottlenecks in using available services. For instance uncertainty about the usefulness of BASIS training is the most important reason for not participating in BASIS training; moreover, many firms were not aware of BASIS services. ITC may help TSIs similar to BASIS to design a communication strategy that clarifies the benefits of TSI services for TSI members.

The long-term impacts of projects similar to NTFIII, and the sustainability of these impacts, should be investigated three years after the projects ends. This evaluation only considered short and medium-term impacts of the project. However, some NTFIII project firms signed contracts in the last year of the project. Moreover, many other supported firms established business links with foreign clients that may result in new business contracts with those clients in the long term. Furthermore, the sustainability of the project impact can be assessed only several years after the project ends. To better understand the sustainability of the impact of its programmes, ITC could consider measuring the performance of firms after the programme ends.

Adjustments to ITC's monitoring system could improve the organisation's capability to measure impact and use monitoring for strategic decisions. The analysis in this report was almost entirely based on information collected by the WUR team. A similar analysis can be done more cost effectively using monitoring data from an implementing agency. This does imply the monitoring systems used should be appropriate in terms of data access, indicators and timeliness. For example, ITC could show better in its KPIs that programmes helped to improve business performance and management – the immediate and intermediate outcomes. Finally, the

experience of PRIME and PRIME-ITC shows that regular communication about the findings from the collected data in the form of meetings, workshops and 'sense-making' sessions is needed to make it relevant for strategic decisions.

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