

## IT Skills Development Project and Economic Development in Bangladesh

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### *Abstract*

*Bangladesh is focusing to digitize the economy in line with latest technological development. "To meet the current industry demand of skilled labor in IT, many projects have been undertaken. This study investigates the impact of such skill development project in the economic growth of Bangladesh. Total 78 respondents were surveyed who were affiliated with LICT project of Bangladesh Computer Council. The quantitative approach has been used to analyze the data. The findings show there has been a gradual growth in the average domestic and export earnings. It is recommended that the IT industry in Bangladesh is becoming the most dynamic sector of the economy.*

**Keywords:** *IT in developing nations, IT skill development project, Economic Development, Bangladesh.*

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## **Introduction**

The information technology has been used as its infancy period since the 1980s (Fahad & Rashedur, 2017). IT has been characterized as an invaluable platform for economic growth attracting increasing attention from different governments around the world mainly from developing nations. IT has revolutionized the global economy with changes in different economic activities (Fakher, 2016; Kodakanchi, Kuofie, Abuelyaman, & Qaddour, 2006). Experience has showed that given the proper infrastructure, IT can be an enabler for socio-economic development (Latif et al., 2018). However, with respect to developing nations, the literature is limited in resources when it comes to assessing the impacts of IT investments on economic development although the evaluation of IT investments represents an important element for policy and decision-makers (Mustafizur & Fayaz, 2017). There is very little research on the impact of IT projects in the context of developing nations like Bangladesh. Therefore, current paper addresses important research need in developing nation through studying one of the biggest IT skill development project and their implications on economic development. The contribution from a research perspective is to report on some lessons learned and propose a set of recommendations for future implementations in similar developing nations' environments like Bangladesh.

Information Technology (IT) has turned out to be a transformative technology for any country's progressive economy (Iftekhar, et al., 2014). So, IT can be described as a new force comes into being which shapes up the future of the world by reducing terrestrial limitations, bringing culture and societies nearer to each other (Nasir & Kalirajan, 2016). As a result, the world is witnessing a revolution in IT specially post COVID-19 pandemic, the scope of which stretches far beyond the realm of the sector itself. In the past, countries like Europe, Africa, United States, Taiwan, Britain have attracted researchers time to time to conduct studies on the development of the IT sector and the economic growth of its country. All of the researchers have agreed that intensive use of IT tends to have a larger input to worker efficiency and hence contributes to national economic growth in IT industries. Thus, it is very important that further studies be directed to understand the contributions of knowledge transfer plans in growing IT skills by means of training and the impact of this knowledge transfer plans on creating up-to-date skilled employment (Falck, Heimisch, & Wiederhold, 2016; Garrido, Sullivan, & Gordon, 2010). This is because, knowledge is the key agent for transforming both our global societies and local societies (Hossain, Salam, Shilpi, & Officer, 2016). IT enabled sharing and development updated knowledge can have an impact on the skill for bridging the gap between actual performance and performance goal of an organization (Alamgir & Ahmed, 2011). For instance, the Bangladeshi IT sector has clearly made an impact on promoting the economy by facilitating association and cooperation among specialists (including sharing of learning and training tactics) and by supporting more effective and practical IT skill acquisition (Sakil, 2018). Moreover, in terms of developing nations, many researchers agreed that, developed nations showed a positive and significant relationship between IT, growth, and productivity, but that there was less evidence of such a relationship for developing nations (Cuarmal, Osmani, & Bhowmick, 2014; Fahad & Rashedur, 2017; Kamel, Rateb, & El-Tawil, 2009; Nasir & Kalirajan, 2016). Lower investment in IT as per GDP in developing nations and lack of completed infrastructure and knowledge base to support effective use of IT were the cause of the gap between developed and developing nations (Kamel et al., 2009). Therefore, it can be said that the IT infrastructure evolved to become one of the most critical factors driving productivity and growth in global economies with varying implications among developed and developing nations (Steinmueller, 2001). It is

important for developing nations not to isolate themselves from the changes occurring due to the developments in the IT globally (Bahraini & Quaffs, 2019; Fahad & Rashedur, 2017; Kamel et al., 2009).

### **ICT Growth and Bangladesh:**

The post pandemic new normal world witnesses a great transformation of society through global competition and the power of information technology. Today, the developing countries like Bangladesh has been one of the most striking targets to the foreign organizations seeming for several years in terms of her IT industry (Ahmed & Azim, 2016; Sakil, 2018).

According to The Daily Star online article published Muhammad Helal & Mahjabeen Rahman on December 03, 2016, prevailing big companies like Microsoft, Apple, Samsung, etc. are making massive investments in Asian countries to utilize the cost advantage. Bangladesh is also one of the potentials, with its huge under-utilized manpower which is inexpensive comparative to India, Malaysia and China, and thus it creates an established foreign investment platform with a nationwide IT infrastructure and skilled manpower.

However, to fully capitalize on the prospects offered by the international IT development, Bangladesh is expected to thrush heavily towards further skill development in the emerging technology to draw the attention of foreign investors competing with other technologically advanced and well financed Asian countries specially in align with fourth industrial revolution technologies. Moreover, in the recent few years the Government of Bangladesh has played a major role in promoting the IT sector as the next growth engine for Bangladesh. At the same time, the young entrepreneurs are encouraged to launch IT startup companies in Bangladesh. Both these efforts would create huge number of jobs and, consequently, helped Bangladesh to become a middle-income country by 2021 (Mustafizur & Fayaz, 2017).

Additionally, Considerable achievements in the IT sector have already been made over several years towards building a Digital Bangladesh and more initiatives are underneath plan to build Smart Bangladesh. In this era of Information Technology, since IT plays significant parts for everybody, it cannot be omitted from any of the job that is required for the human development. That is why support of IT is also important for both the literate and illiterate people. In the environment's viewpoint, it has been seen that, still majority of the people is illiterate in this developing country. It has an increasing adult literacy rate of 72.76% in 2016 whereas it was 47.08% in 2011. Therefore, it is observed that a significant percentage may be remaining behind the screen of IT (Ahmed & Azim, 2016; Mustafizur & Fayaz, 2017) Although, the requirement of literacy rate of this country is yet is to be more hyped, development of IC sector will encourage youth to seek better education emphasizing more IT training and generating higher income(Ahmad, Robabe, & Mohammad, 2015; Fahad & Rashedur, 2017). Bangladesh is also obtaining enormous remittances from exporting IT manpower around the globe and had earned an export target of USD 5 billion in the IT sector by 2021. Henceforth, there is a need for additional exercise to enhance the traditional skills knowledge base with a competency in IT use. IT professionals must be flexible and adapt traditional skills to incorporate the requirements of technological advances so that they can be fit towards the country's economy more and more. Keeping such huge changes in mind, many international organizations such as the World Bank funds billions of US dollars for IT skill development projects as a part of their lending programs and grant assistance to various countries (World Bank, 2003), one of such projects is LICT (Leveraging ICT for Growth, Employment and Governance). The project is described in brief

below:

**LICT Project:**

LICT Project was launched in February 2013, aiming to develop a vibrant and healthy IT industry in 5 years by identifying the strategies, programs and investments. Bangladesh Computer Council was the implementing agency of the project worth about Taka 572.48 crore. Of the total amount, the World Bank has provided \$70 million US dollars and the rest by the Government of Bangladesh. Skill development program was one of the key components of the LICT project designed to develop 34,000 skilled manpower. This iconic skill development project played a significant role in terms of building skilled human resource and creating employment opportunities and thus resulting to increase of revenue capital for country's development. The main objectives were essentially the development of young graduates with updated skills to perform in the future work market especially in IT as high skilled professionals are a demand in every country, which widens their job opportunities (lict.gov.bd, 2020).

Previous researches show that, substantial gaps exist between the areas of skill development training being received and the areas of training desired. IT industry in Bangladesh requires skilled manpower for its growth (Ahmed & Azim, 2016; Fahad & Rashedur, 2017; Mustafizur & Fayaz, 2017). The Skill development projects and program undertaken by the Government as well as by the private sector since 2015 to create industry ready IT personnel are not effective. The analysis of skills gap in the IT profession is not straight forward and requires a multi-dimensional approach (Ahmad et al., 2015). LICT project, that seek to improve employability outcomes of the current young generation as per market demand to keep a hand in the development of the country's economy. Therefore, this study attempts to fill this gap in skill development literature to achieve a greater understanding of the impact of this project on the economic development of Bangladesh. It aims to answer the following research questions, what is the impact of skill development project undertaken by the Government in Bangladesh in the economic development of Bangladesh?

**Methodology:****Sampling:**

The current study uses a quantitative approach to find out the results. The sampling method shall be a stratified random sampling. 78 current employees and employers from IT industry and Trainees and Trainers of those enlisted companies in Bangladesh took part in different trainings under LICT project were the respondents of this study. And those companies were enlisted within the 3 associations BASIS, BACCO and e-CAB. The list of registered member companies of each association served as the sample frame for the respective stratum. They were selected because; they have direct and practical experience in facing circumstances had better to say impacts of IT Skill Development Project, i.e. LICT. The researcher chose to do stratified random sampling because, target population of interest is significantly diverse (Neyman, 1934) and to give equivalent chance to be carefully chosen randomly to every subgroup named as strata, for equivalent proportion symbolizing to each stratum (Neyman, 1934; Rahi, 2017). The participants responded to the self-constructed questionnaire will be from IT sector of Bangladesh especially who were affiliated with LICT project. The data were calculated using SPSS 20.0 version using the frequency distribution such as; ratio, percentage and diagram. It is noteworthy to mention that; the findings of this paper are the result of the pilot study. Table 1.1 shows the total number of respondents from the three associations.

**Table 1.1 Numbers of Respondents**

BASIS	42
BACCO	17
e-CAB	19
Total	<b>78</b>

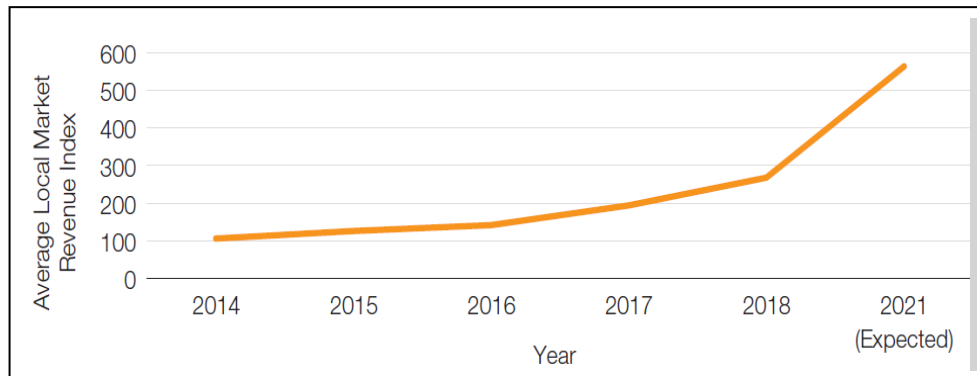
**Findings and Discussion:**

The LICT project was initiated in the 2013 and the implementation began in 2014, hence the researcher took a window of 5 years, i.e. from 2014 to 2019 to see the impact. The calculation was also done following the mentioned time range. The respondents mentioned in one of their answers that, the number of registered companies are growing higher with course of time. Table 1.2 shows the growth of the IT companies within these 3 associations, which can also be considered as a positive change in the revenue index of Bangladesh economy.

**Table 1.2: Growth of market Local revenue index (2014-2018)**

Stratum	2014	2015	2016	2017	2018	2021
BASIS	105	212	291	458	877	1210
BACCO	121	122	112	136	151	288
e-CAB	112	104	104	107	115	291
Overall IT Industry (m)	<b>112</b>	<b>132</b>	<b>147</b>	<b>199</b>	<b>274</b>	<b>569</b>

From the above Table 1.2, it can be understood that, every year more than 100 new ICT affiliated local companies were being registered by 3 associations respectively in the last five years, and it is observed that, with this growth rate by the end of digital Bangladesh vision year 2021, the number of IT companies will increase to more than five times on average than that of year 2014. Moreover, the grand mean (overall IT industry) local market revenue index of IT industry of Bangladesh was 106 in 2014, 126 in 2015, 141 in 2016, 194 in 2017, and 268 in 2018. This portrays that the local market revenue increased 2.68 times compared to revenue of IT Industry in 2013. It had an index of 563 in 2021, which is more than double that what is being earned as revenue at the base year. If divided by the stratum, it is revealed that every stratum experienced a growth in local market revenue generation. Among all of them, companies who are BASIS members only experienced the highest growth of local market revenue over the years. From 2017 onwards, companies who are BASIS members started to experience a greater rate of revenue. In 2018, the revenue was 8.75 times as the local market revenue earned by them in 2013. The slowest growth was experienced by companies who are members of e-CAB, who had a revenue index of 113 in 2018. In Figure 1.1 below, the visualization growth of the grand mean of the overall IT industry revenue index shows more in-depth idea of the of the growth condition of local market revenue index of IT industry.



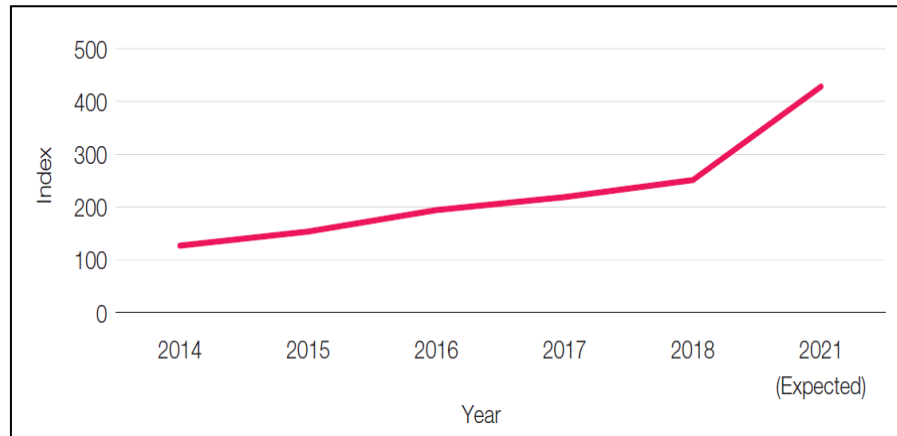
**Figure 1.1 Overall ICT industry Local Revenue Index (2014-2021)**

From Figure 1.1, it is observed that, the growth of local market revenue was increasing from 2013 to 2016. From 2016 to 2018, the graph of growth of local market revenue was steeper, meaning that the growth of local market revenue was higher during this time-period compared to that of 2013-2016. The ICT Industry of Bangladesh expects a far greater local market revenue growth by the year 2021, which is visualized by the steepest part of the graph. Not only the local revenue index shows the hype the average international export revenue index also has shown higher growth in its trend. The following Table 1.3 shows growth of the average international export revenue index more closely visualized with its overall grand mean.

**Table 1.3 Growth of market Export revenue index (2014-2021)**

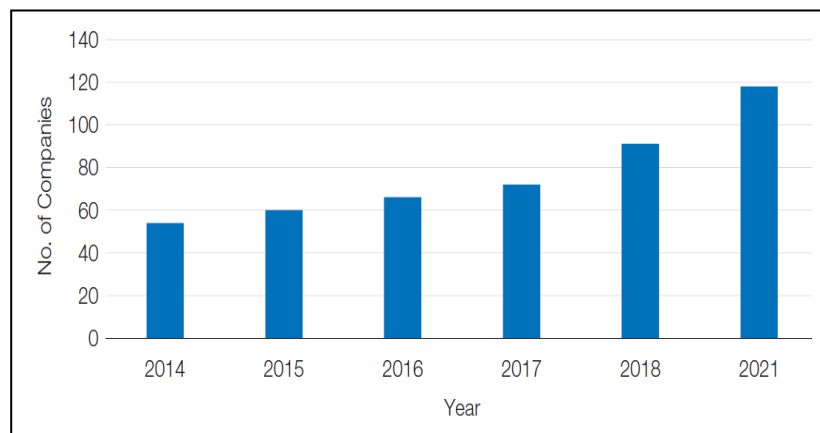
Stratum	2014	2015	2016	2017	2018	2021
BASIS	166	278	415	533	766	984
BACCO	112	145	166	184	216	233
e-CAB	132	151	172	153	115	259
Overall ICT Industry (m)	<b>128</b>	<b>156</b>	<b>197</b>	<b>229</b>	<b>241</b>	<b>419</b>

The Table 1.2 shows the number of registered companies in each of the associations responsible for International Export. The grand mean (overall IT industry) export market revenue index of IT industry of Bangladesh was 127 in 2014, 154 in 2015, 195 in 2016, 219 in 2017, and 251 in 2018. This portrays that the export market revenue increased 2.51 times compared to revenue of ICT Industry in 2013. It is expected to have an index of 429 in 2021. If divided by the stratum, it is revealed that almost every stratum experienced a growth in export market revenue generation, except for companies who are e-CAB members. Among all of them, companies who are BASIS members experienced the highest growth of export market revenue over the years. The revenue index of companies who are members of BASIS only is 164 in 2014, 279 in 2015, 416 in 2016, 534 in 2017, 756 in 2018, and is expecting 987 in 2021. In 2018, the revenue was 7.56 times as the export market revenue earned by them in 2013. The slowest growth was experienced by companies who are members of e-CAB, who had a revenue index of 113 in 2018. Companies who are e-CAB members faced a decline in export revenue from 2016 till 2018, where their index were 170, 150, and 112 in three years. In Figure 1.2, the average export revenue index.



**Figure 1.2 IT industry Export Revenue Overall Index (2014-2021)**

From the figure above (1.2), it is observed that the growth of export market revenue was increasing from 2013 to 2018 at a steady rate. The ICT Industry of Bangladesh expects a greater export market revenue growth to fulfill the vision of 2021, which is visualized by a steep rise of the graph. Additionally, for more in-depth information, a bar diagram has been visualized to understand the exact numbers of export (See Figure 1.3). In 2014, there were around 55 companies who exported products or services. It was 60 in 2015, around 70 in 2016, around 75 in 2017, and around 85 in 2018. This shows a gradual increase in number of exporting companies over the years. It is expected that the number will increase to around 120 by the year 2021. In comparison the local market, the export market should be higher to create the scope of faster economic development in Bangladesh.



**Figure 1.3 Number of exporting companies (2014-2021)**

**Conclusion:**

From the above discussion this paper directed that, Bangladesh clearly has the opportunity to develop its IT-based economy. The country’s IT industry development and circulation stream are way far behind than those of the developed countries. However, the swiftness of progress is in good condition. In the era of the Digital Economy, there is no doubt that the IT industry is becoming the most dynamic sector of the economy, surpassing traditional industries. Few

researchers agreed that, with the integration of the world market, it is obvious that developed nations will outsource more and more of their labor-intensive products and service production to the developing countries (Berger & Frey, 2016; Kamel et al., 2009; Meng & Li, 2002) . Hence, being a developing country, these circumstances may lessen the concern of Bangladesh over the displacement effect of IT acceptance. To participate in these markets, however, Bangladeshi enterprises will need to develop the IT links to integrate themselves into the supply links being created for these activities. So, Bangladesh should focus on emerging technologies to capture the fresh market.

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