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# Factors Affecting the Growth of the ICT Industry: The Case of Bhutan

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**Abstract.** The ICT industry that consists of IT and IT- Enabled Services (ITES) components has been contributing significantly to the economy of many countries globally. Due to its importance, understanding factors affecting the growth of this industry is critical for developed and developing countries. Currently, there is still a limited understanding of relevant factors and their influence on the IT/ITES industry growth in developing countries. Bhutan, in particular, is a small developing country that is striving to build this industry to diversify its economy. This study is the first study that explores factors affecting the growth of the IT/ITES industry in Bhutan. Qualitative research involving different stakeholders is employed to gain an understanding on factors facilitating and inhibiting the growth. The study findings indicate that Human Resources, Policy, Infrastructure, Foreign Direct Investment (FDI) and Culture are particularly crucial for Bhutan's context. Due to the uniqueness of Bhutan, this study helps drive the development of the industry and enhance the current understanding in this area particularly in the context of developing countries.

**Keywords:** IT/ITES industry, ICT industry, Developing countries, Bhutan.

## 1 Introduction

Information and Communication Technology (ICT) has revolutionized the global economy by enabling cross border businesses [1]. The ICT industry comprises of two components: Information Technology (IT) and Information Technology-Enabled Services (ITES). The IT component encompasses IT application and engineering while the ITES component includes services offered through electronic means [2]. The Gartner's forecast for 2016 IT spending is projected to be US\$3.54 trillion, reflecting a huge market for the ICT industry [3]. This industry contributes significantly to a country's economy and creates valuable employment. A study by UNCTAD in 2008 shows that in developing countries, the service sector inclusive of IT/ITES accounted for 51% of gross domestic product (GDP) and 35% of employment [4]. Beside increasing employment and boosting GDP, the ICT industry has a ripple effect on the development of the country through the need for efficient ICT infrastructure, transport infrastructure, educational infrastructure and enabling policy reforms. To emphasize the two important components of the ICT industry, the term IT/ITES industry is explicitly used in the remainder of the paper.

The existing literature identifies several factors affecting IT/ITES industry growth in both developed and developing countries. However, most of them are focused on developed countries such as Ireland, Israel or Singapore where the industry is well established or favorable factors exist in promoting the industry development. Although a few studies focus on developing countries (e.g. India, Philippines and Thailand) but those countries have different contextual factors. In addition, though most studies have adopted qualitative study, they differ in depth and data collection methods. The majority relied on secondary resources and only a handful of studies involved empirical data. Hence, considering the uniqueness of Bhutan as a country and the fact that the IT/ITES industry in Bhutan is still at the early stage of growth, it is necessary to understand the contextual condition of Bhutan and identify relevant key factors affecting the development of the industry. It would be impractical to assume that critical factors identified in other studies will also be applicable in Bhutan. The importance of considering contextual differences in understanding a particular phenomenon has been well recognized in the literature [5,6].

Therefore, this research aims to explore factors affecting the growth of the IT/ITES industry from the perspective of key stakeholder groups. The following questions are addressed in this study:

*What are the key factors affecting the growth of the IT/ITES industry in Bhutan?*

*How do these factors affect the growth of the IT/ITES industry in Bhutan?*

A qualitative research involving interviews with major industry stakeholders is adopted as a research method to enable a detailed investigation of the industry from all perspectives. In addition, multiple secondary resources are also used to enrich the understanding obtained from the interviews. The study findings indicate that Human Resources, Policy, Infrastructure, FDI and Culture play a crucial role in the growth of Bhutan's IT/ITES industry. Currently, the first four factors in Bhutan are at a formative state and have impeded the growth of the industry. By contrast, Culture appears to be conducive for the growth of the IT/ITES industry in Bhutan. We identify a number of issues pertaining to Culture, but they appear to be relatively easy to address. Based on the findings, a number of recommendations are proposed to facilitate the growth of the IT/ITES industry in Bhutan.

The study contributes to both researchers and practitioners. For researchers, the study synthesizes useful factors affecting the growth of the IT/ITES industry. The study also enriches the existing studies by conducting an in depth qualitative study in a unique context. For practitioners, the study reflects the criticality of collaboration among stakeholders and strategic implementation and customization of each factor for successful growth of the industry. This paper is structured as follows. First, it presents the background, the opportunity of the global IT/ITES industry, the motivation for conducting this study, followed by a literature review. Then an overview of current state of the industry in Bhutan is presented. The research methodology is then briefly outlined, followed by the research findings and discussion. Finally, we conclude the paper by outlining implications, study limitations and future research work.

## 2 Literature Synthesis of Factors Affecting the IT/ITES Industry Growth

The IT/ITES industry has a tremendous potential to contribute to a country's GDP, employment generation and overall development. However, different countries face diverse challenges to grow the industry. There are also various factors that drive the development of this industry differently across countries [1,7,8]. To identify possible factors affecting the growth of the IT/ITES industry, existing studies related to development of IT/ITES industry were examined. We searched for studies using Google scholar and various online databases such as Computer and Applied Sciences Complete (EBSCO), Engineering Village and Web of Science (ISI). The keywords used for the searches include 'factors affecting IT/ITES industry development' and 'factors impacting ICT industry growth'.

There were plethora of papers related to IT/ITES industry but we only selected papers that were related to factors affecting the IT/ITES industry growth. Although the literature reviewed is not extensive, it is adequate to provide an overview of existing studies on this subject. The synthesis of factors affecting the growth of the IT/ITES industry identified from our literature analysis is presented below with brief explanations.

**Human Resources.** This industry is driven by human capital as a key component for production of knowledge or ideas [10,11]. For example, previous studies indicate that the IT/ITES industry in India advanced rapidly because of the availability of a large, well educated, high quality, English speaking workforce [1,9,10]. Similarly, the study by Carayannis & Sagi [7] highlights that one of the key factors contributing to the success of the IT/ITES industry is the possession of a highly-skilled worked force. Furthermore, Philippine's strength is in the ITES segment which is enabled by the availability of a large pool of highly-educated English speakers [11,12]. Previous studies also indicate important role played by government in offering incentives such as education and training grants [7,11] to build the human resources for this industry.

**Foreign Direct Investment (FDI).** The presence of FDI in a country adds value to its IT/ITES industry growth [16] and offers a "demonstration effect" to the host countries [9,13,15]. FDI brings in superior technologies, expertise, money, and ideas which developing countries generally lack. Hence, this is believed to be the largest type of equity flow in developing countries [12,17]. Thus, many developing countries depend on FDI to sustain their economic growth [17]. Another benefit of FDI is that it enables local businesses to compete or take part in the global market [17].

**Infrastructure** is broadly divided into ICT infrastructure and Technology Park infrastructure.

**ICT infrastructure.** An efficient ICT infrastructure is essential for facilitating and supporting IT/ITES industry growth [5,12,14]. For instance, Singapore's success in attracting multinational companies (MNC) is because of the high investment in creating efficient infrastructure [18]. Cost of ICT infrastructure including cost of internet access is another crucial element affecting the IT/ITES industry growth [7]. Higher cost impedes adoption of ICT in a country, while reliable ICT infrastructure attracts

FDI [17]. India's low infrastructure cost is attractive and has also enabled the rapid growth of entrepreneurs [9]. Usually ICT infrastructure is either deregulated or privatized for maintaining service efficiency and low access cost as in the Philippines, Singapore and Ireland cases [14,18,19].

**Technology Park.** The technology park can promote knowledge transfer for developing and marketing high-technology products. It also facilitates promotion and commercialization of products [7,8]. A study by Harbi et al. [8] indicates that such parks attract and defuse the need to have proximity/location attractiveness. India established special economic zones equivalent to technology parks to facilitate rapid growth of its IT/ITES industry, increase exports and counter the infrastructure issue [21]. Thailand established software parks to accelerate the development of its software industry [5,9,20]. Technology parks played a crucial role for the industry growth in the Philippines by attracting manpower, FDI and local investment [11,12].

**Policy.** Policies such as fiscal incentives that includes tax advantage, subsidy and regulatory environment encourage the growth of the IT/ITES industry [5,7,11]. Policy can be used to attract FDI to establish subsidiary companies, increase FDI production and encourage collaborations with local firms [11]. Policy should also consider the local conditions such as protection and support for local firms' growth [7]. Countries such as the Philippines, Korea, Japan, Taiwan and India give preferential treatment to local firms' development while promoting FDI [7,12]. Furthermore, policy should promote entrepreneurial culture and encourage local firms to internationalize [11,19]. Finally, strong coordination among various stakeholders is required to ensure policy effectiveness [19].

**Culture.** Culture in this study refers to bureaucracy and work ethics. Culture plays a role in ensuring "what and how things get done" [20]. High level of bureaucracy affects the efficiency, flexibility and innovativeness for the industry growth as was the case of Thailand [5]. However, India has bureaucratic structure with a disciplined approach to work [9] but in addition India also possesses work culture that is similar to western culture where majority of the IT/ITES businesses emanates [1]. The study by Trauth [20] states that global investments introduce global culture such as high standard work ethics to the workplace that enhances the development of domestic industry in a country.

**Geographic Location.** Country location affects the direction of the trade [14] such as Poland and Ireland are strategically located near other regions with a rapid growth in ICT and have experienced significant business benefits [7]. However, the study by Heeks [11] argued that location relates to export only and do not impact industry growth focused on IT products and services [15]. Dedrick and Kraemer [17] also indicates that countries with favorable geographic location have an advantage for a successful hardware industry as in the case of Thailand's successful hardware industry. Furthermore, in the case of India, location did not affect the industry growth, but rather the difference in time and distance offered an advantage [1,9]. This factor, however, is compensated with the advent of technology parks that facilitates access to markets and counter the infrastructure issues [21].

**Domestic IT use.** An increase in domestic IT use most likely increases investment in the IT/ITES industry and promotion of the local IT industry [15,18]. However, in Thailand, domestic IT consumption was less yet the industry was booming [18]. Thus not a significant relation seems to be there between domestic IT use and the success of the industry [16,18]. Therefore, this factor is not relevant if a country is focused on external market or if the local market is small [16,17,18]. For instance, despite low domestic IT use, India has a fast growing IT industry [14,16] and it is the small market size and low profitability that forced entrepreneurs to focus on export activities [9].

**Economic Development.** A country's level of economic development determines the size of the local IT/ITES market and the quality of infrastructure [17]. The greater the economic development, the greater the quality of infrastructure in supporting the growth and use of IT [18]. The pace of economic development and technical capabilities contributes to the success of the IT/ITES industry [1]. However, the study by Dedrick and Kraemer [17] states that this factor is affected by the country's policies and is thus closely related to government policies.

**Research and Development (R&D).** A correlation may exist between industry attractiveness and R&D initiatives [7]. However, Harbi et al. [8] argue that R&D activities do not determine the success of the IT/ITES industry but it promotes innovation in the industry. However, the study by Bhattacharjee & Chakrabarti [10] noted that, recently there have been increasing investments in R&D in India that contribute to the growth of the IT/ITES industry.

**Access to finance.** Access to finance is important where the focus is on supporting startups, innovation, entrepreneurship and for maintaining growth of existing firms necessary for IT industry development [1,8,12,15]. Further, this factor is linked with IT industry ranking [15] which contributes to branding of the industry in specific countries.

**Political stability.** In developing countries, politics influence transition to an information society [17]. A country's political stability influences private sector decisions, especially whether to invest in setting up IT/ITES businesses [5]. A study by Dedrick & Kraemer [17] considers the IT/ITES industry to be a high risk business and political stability represents trust to investors [13].

**IT Export, Sale and Production.** The success of the IT/ITES industry is measured by the ability to produce and export technology related products [18]. This factor also imposes limitations to countries which enforce protectionism, competition and lack of support for exporting products [17]. Furthermore, an export strategy is expensive and only viable for larger global companies [17].

### 3 Current state of the IT/ITES industry in Bhutan

Bhutan is a small country positioned between China and India, with a population of 757,042. Bhutan connected to the global information and communication technology (ICT) only in 1999 and thereafter prioritized ICT. The prioritization of ICT is also to

diversify and create a sustainable economic development which is currently dependent largely on hydropower and tourism. Furthermore, Bhutan's late entry is believed to give the advantage of being able to learn from other countries, and leapfrog to enter into global IT/ITES business within a short period of time. However, according to the study by Infocomm Development Authority (IDA), Bhutan's IT/ITES industry ecosystem is "loosely defined" with lack of clarity about what comprises this industry which has resulted in slow growth of this industry [22]. The industry is dominated with retail in computer products with minimal usage of domestic skills. Significant amounts of work are also outsourced to companies outside the country and local companies leverage overseas skills with very limited usage of local resources and competency [22].

Government implemented numerous initiatives that enabled the development of the IT/ITES industry. For example, ICT infrastructures specifically telecommunication and internet access were promptly established. As of 2015, the mobile penetration has reached 87% and 62% internet penetration [23]. E-government services were introduced and ICT literacy and adoption programs were conducted across the country to all level of the society. Further, to enhance the entrepreneurship culture, an incubation center was established in technology park [24] beside few other agencies providing support to entrepreneurs. Several policy reforms were also made to create an enabling environment for the IT/ITES industry. In 2008, Bhutan initiated a private sector development (PSD) project funded by the World Bank which focused on a holistic approach to development of the IT/ITES industry [24]. Through the project, a technology park was built, skills development initiatives were undertaken with international and local firms and financial environment reforms were also undertaken [24]. As of 2014, approximately three FDI firms have established business in the technology park and lately there has been an increase in the establishment of service focused small domestic IT/ITES firms.

## **4 Methodology**

This study aims to explore key factors affecting the IT/ITES industry growth in Bhutan from the perspective of multiple stakeholder groups. Because of the exploratory nature of the study, qualitative research method is considered to be the most appropriate for this study since it enables in depth investigation of the phenomenon of interest [28]. The unit of analysis for the study is each key stakeholder group. The stakeholder groups comprises of Government, IT/ITES Consultants, Private Sector and Telecom Operators.

Data collection involved interviews as a primary source, along with multiple secondary sources including government reports, industry reports and news clippings. The main instrument was semi-structured open-ended questions. The interview questions were developed based on the research questions for the study. Interviews were non-directive allowing freedom and flexibility to respond. Each interview took approximately one hour. For data analysis, the transcribed interviews were analyzed using qualitative techniques as suggested by a number of qualitative research method-

ologists [25,26]. Open coding was first conducted to identify the key themes relevant for answering the research questions, followed by axial coding to establish relationships between the themes identified. Selective coding was finally conducted for additional evidence to support the key themes.

Based on Yin [26] and Neuman [25], construct validity in this study is addressed through the use of multiple sources of evidence, a comprehensive review of relevant literature, and the use of case study repository to establish a chain of evidence. To maximize external and internal validity, a rigorous data collection procedure and systematic data analyses were performed. Reliability is ensured through the development of appropriate interview protocol and pilot test of the questions with relevant practitioners to assess the clarity of the questions and identify errors and possible biases [26].

## **5 Findings and Discussion**

The analysis of the interview data indicates that Human Resources, Infrastructure, Policy, FDI and Culture are considered to be the most notable factors affecting the industry growth in Bhutan. Country's Accessibility and Cost of Operation were two additional factors identified to be important for Bhutan's IT/ITES Industry growth. The two additional factors identified are likely due to the geographical position of the country and higher dependency on import of raw materials. Therefore, as compared to the previous studies, there are added challenges for Bhutan which were not encountered by other countries studied in the past. All these factors were then further assessed to explore how they affect the IT/ITES industry growth in Bhutan. Based on the analysis, a number of recommendations are proposed to address those important factors to contribute to the industry growth. The new factors that have impeded the industry growth, however, are still challenging to address.

### **Culture**

#### *Focus on enhancement of work ethics*

The finding related to Culture indicates that Culture is conducive for the industry growth. The reasons cited by stakeholders on their beliefs are Bhutan does not have a difficult bureaucratic system and work ethics is closely related with a reward system.. Stakeholders also felt that in comparison with the international industry standards, Bhutan still needs to improve on the work ethics as people in Bhutan are laid back and non-competitive. They rationalized that this might be due to local business not having to follow strict corporate disciplines. All participants believe that work ethics is directly related to remuneration and motivation and that additional training and orientation within the corporate culture can address the issue of work culture. In addition, the private sector also plays a crucial role in attracting people to this industry and improving work ethics. The literature suggest, financial incentives, professional development and career progression can attract people to the industry and improve works ethics [10,20].

### **Human Resources**



#### *Building skilled Human Resources*

Based on the finding, Bhutan lacks skills in the IT segment which has impacted the industry growth. The main reason cited for skills shortage in IT segment was due to mismatch in university curriculum and market needs. As a strategy by Singapore on building its talent pool, necessary IT curriculum were embedded within the school systems itself [19]. In countries like India, Ireland, Poland and the Philippines, government collaborated with private sector and universities to address the issue of mismatch in university curriculum and market needs as well as provided grants for skills development [1,7,12,13,20]. Therefore, Bhutan could take a similar path by introducing IT curriculum in the education system and establishing linkages among government, academia and industry to build skilled human resources that meet the industry demand.

#### *Creating opportunities and platform for IT/ITES professionals*

An interesting observation from the study is that there is lack of opportunities and platform for professionals in this area to develop their skills. One of the example cited was, generally the domestic firms subcontract their IT projects to firms outside Bhutan. This might be the result of uncertainty within the industry and inability of both government and the private sector to foresee business opportunities in this industry which may be dissuading stakeholders from creating opportunities and platform for this industry [22]. Therefore, firms consider quick gains utilizing cheaper resources from outside. Further, absence of opportunity was also referred to dearth of environment for innovation and entrepreneurship in the country. Although Bhutan has established incubation facilities as a platform to promote entrepreneurship [24], but there has been little uptake. This might be due to absence of financial support for entrepreneurs as access to capital is necessary to promote entrepreneurship, innovations and to maintain the growth of existing firms [8,12,16]. Hence, effort towards creating an enabling platform and opportunities for professionals in this industry is essential to build the skilled human resources.

#### **FDI**

#### *Creating enabling environment for FDI*

Majority of the stakeholder groups perceived that Bhutan lacks an enabling environment to attract FDI despite of having enabling policies supporting FDI. Study participants cited that it is lack of coordination in policy implementation which is impeding attractiveness. Further, consistent support and examination of FDI's health, to check if FDI is facing any issues, is missing in Bhutan. In addition, there has been limited association between FDI and local companies thereby creating an unhealthy environment. Therefore, as stated in the study by Mitra [13], strategic alliances between local and FDI companies are necessary to expand the IT/ITES industry. Furthermore, policies should be used as a tool for sharing the risk with FDI, for example fiscal incentives to make the cost of operation competitive for FDI companies. The government also has a crucial role in policy implementation to ensure the stated FDI benefits are delivered to maintain the attractive environment for FDI.

#### **Infrastructure**

#### *Improving ICT infrastructure to meet the industry standards*

Majority of stakeholder groups raised reliability, redundancy and cost of ICT infrastructure as the foremost issues that was also highlighted in several government reports [22,24]. By contrast, Singapore's attractiveness stems from having an efficient ICT infrastructure [19]. Most of the literature considers the efficiency and cost of ICT infrastructure to be crucial for attractiveness [1,5,7,18]. Study participants suggest that introduction of a third international gateway, coming via a completely different international route, will resolve the issue of reliability and redundancy. Alternatively, in order to provide uninterrupted services, Indian companies set up multiple business sites within and outside India [1]. So until the third gateway is installed, Bhutan could perhaps be positioned as business continuity planning (BCP) location for FDI or to address the redundancy issue within, the Bhutan's industry could consider other countries as a BCP for their business.

The prohibitive cost of bandwidth (internet) has been another challenge for Bhutan. Study participants proposed introducing a third telecom operator or subsidy from government to make access affordable. However, subsidy is not a sustainable strategy and as previous studies have reflected deregulation and privatization of the state-owned telecom operator as a successful strategy in reducing cost and improving the quality of service [1,19,20]. Thus, deregulating and privatizing Bhutan's state-owned telecom operator might provide competition, increase quality and reduce cost.

#### *Leveraging Technology Park to foster the industry growth*

The technology park is increasingly valued in creating an overall ecosystem and replaces unreliable public infrastructure [2,7,8]. However, the study participant's contend that technology park in Bhutan has little to no impact on the industry growth as well as slow in creating a fully operational park. This is perhaps due to absence of collaboration between the FDI and domestic firms because the technology park is more focused towards attracting FDI. On the contrary, countries such as India, Singapore and Taiwan established technology parks with an export-oriented focus [21] irrespective of domestic or FDI firms. In both India and Thailand, technology parks were also established to promote rapid growth in the IT/ITES industry [1,5]. Similarly, Bhutan could take a balance approach by encouraging both FDI and domestic firms to leverage the technology park. This can be possible through offering a tailored economically suitable package for domestic firms to locate at technology park.

#### *Policy*

##### *Policies need to facilitate growth of domestic firms*

The finding of this study indicates policies are more focused on attracting FDI and neglected the growth of local IT/ITES firms. This is in contrast with the literature, which suggests that any nations striving to build this industry had policies and strategies that always balanced the development of both local and FDI companies because local companies are considered a long term investment for sustainability [12,17,20]. For example, Japanese government ensured protection and support for the domestic market to compete globally and Korean government's policy gave preferential treatment to local companies [17]. Furthermore, literature claims that policy should be developed based on the country's environment [5,17]. This is clearly lacking in Bhutan.

tan's case. Therefore, Bhutan needs to realign the policies to balance the growth of the industry through creation of enabling business environment for both FDI and domestic firms. The collaboration between private sector and government also needs to be strengthened. This can be achieved through strengthening the national IT association as identified in previous studies [1,2,22].

#### *Encouraging stakeholder collaboration for effective policy implementation*

The government has introduced various policies to enable the development of the IT/ITES industry. Such policies create attractiveness for the IT/ITES industry as supported by previous studies. Such policies can also address the cost of operation factor [1,5,7,18]. However, despite creating such an enabling environment, the industry growth has still not been impressive as expected. This indicates the need for ensuring the successful implementation of such policies. The literature claims that the efficiency of government in administration and coordination of policy is one of the reasons for Singapore's success in growing its industry. Singapore has also established a special agency to overcome compartmentalization of government effort [19]. Similarly Bhutan needs to consider eliminating coordination issues through taking Singapore's path or through development of application systems to integrate all the stakeholders for policy implementation thus ensuring collaboration.

#### *Accessibility to the country*

This has been identified as a factor that can impact the growth of the industry in Bhutan. It is a new factor that has not been mentioned in previous studies. The reason could likely be due to the geographical position of the country since Bhutan is a landlocked and mountainous country with limited accessibility. The national airlines are only allowed to fly in and out of the country, which are also limited in numbers and frequency. Bhutan has only one international airport providing air connectivity to five countries. The airport allows only the country's airline to operate and thus have two airline companies. By surface transport there is exit to India only. The challenge faced by this industry is travel time taken to and from Bhutan. The stakeholder group cited that for this industry, travelling to the business locations has to be easy with minimal turnaround time to reach the destination. This is by far a challenge that stakeholder groups felt is difficult to address and to an extent a factor that is deterring FDI investment into the country.

#### *Cost of Operation*

The participants cited cost of general operation to be a factor that can impact the growth of the industry. This factor again was not mentioned in previous studies likely due to the kind of countries that were studied. Bhutan is different with added challenges like the cost of operation which is high as compared to the region with similar or better facilities and service than Bhutan. Bhutan mostly imports raw materials and products for consumption therefore, the high cost can also be due to import of raw materials for all the facilities and services offered. The cost of operation excludes cost of internet access and cost of operation at the technology park. The cost of operation is related with cost of living, cost of hiring, cost of travel and real estate cost. Generally, the cost of operation in Bhutan is extremely high comparable with metropolitan cities in India and region but with less facilities and choices. Thus, the cost of opera-

tion was identified by stakeholder groups as a factor that is positioning Bhutan as an unattractive business location for this industry and is still challenging to address.

## 6 Conclusion and implications

This study provides a useful synthesis of factors affecting the growth of the IT/ITES industry. It is also a first study conducted in the context of Bhutan, employing a qualitative approach. Two additional factors, Country's Accessibility and Cost of Operation have been identified for Bhutan's context, which are likely to be important factors for countries similar to Bhutan. As indicated in this study, all the factors identified as key influential factors, though have been consistent with previous studies, the state and effect of each factor differs slightly across contexts. For example, for Thailand, Policy did not have impact on the success of the IT industry [18], whereas for Bhutan, Policy seems to play a crucial role in the growth of the industry.

For researchers, the study synthesizes useful factors affecting the growth of the IT/ITES industry. The study also enriches the existing studies by conducting an in depth qualitative study in a unique context that was not explored in earlier studies. This study also reaffirms previous studies' recommendation that one size fit all is not possible for understanding factors affecting the development of IT/ITES industry in different countries [5,17]. The applicability and influence of each factor varies from country to country. For practitioners, the study reflects the criticality of strategic implementation of each factor for successful growth of the industry. The study also presents the need for strategic collaboration and customization of the factors according to the environment of the country. This study is also an eye-opener in showcasing the need for strategic alliance among the government, private sector and academia.

However, there are limitations to this study due to time and resource constraints. This study is only a preliminary study with limitation in total number of participants and the number of stakeholder groups. For instance, the study could also include consumer stakeholder group. Nevertheless, the preliminary understanding obtained from this study is valuable to recognize the IT/ITES industry in Bhutan and its development. Further, the two new factors identified in this study have set context for further study to analyze if the identified factors are important for the industry growth as these factors has not been explicitly studied in detail for other countries. For Bhutan, this study has also laid a path for future in depth study in this area.

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