

## **Institutionalization of technological innovations in the public sector of Bangladesh**

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### **ABSTRACT**

*After departing from the ideologies of traditional public administration, Bangladesh has experienced quite a few innovations in public administration. A practical illustration of that is the establishment of the Governance Innovation Unit under the prime minister's office and the A2i at the ICT division, the first innovation laboratory of its kind in the world. At the same time truly remarkable are the innovations achieved with the help of technology and information in the public sector, especially for a young country such as Bangladesh. Usage of technology is hoped to reduce the rigidity of service delivery, increase effectiveness and efficiency, and also at the same decrease the travel, cost, and visit for the service recipients. Institutionalization of these innovations is vital for making the innovations replicable throughout the whole sector and also for making them sustainable. This paper aims to examine and understand the state of institutionalization of technological innovations in the public sector of Bangladesh, investigate the strategies that are helping to attain that goal, and understand the challenges to the process of institutionalization. The design of the paper is qualitative as it employs rigorous content and document analysis and also incorporates data from expert interviews. The paper concludes with the remark that; Bangladesh has a long way to go in regard to institutionalize the innovations it has been taken and a particular set of planned strategies must be taken to make the innovations sustain and embed in the organizational culture of the public sector in Bangladesh.*

**Keywords:** Innovation, institutionalization, technology, e-services, A2i

### **INTRODUCTION**

Bangladesh has been experiencing a transition from the traditional rigid administration to an innovation-oriented, public-friendly administration in the last decade. Incorporating technology in the service process is thought one of the best way-outs towards being an efficient public sector and the prime factor for service process simplification. But, technology-based service process creation includes several preconditions to be fulfilled in the first place such as

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IT literacy of the public officials and service recipient, infrastructure, a lot of paperwork, etc. On the other hand, change resistance is a common phenomenon for any organization, specifically severe in public offices because there is a hypothetical assumption among the public officers is that, the new mode of operation to be more difficult for the officers and less tough for the service recipients. These matters make the institutionalization process inevitable for the public offices which are often overlooked after implanting any change in the public offices. The institutionalization process incorporates several strategies to be taken such as Sponsorship, commitment, etc. as identified by Achilles A. Armenakis, Stanley G. Harris, and Hubert S. Feild, 1999 and Paul S. Goodman, Max Bazerman, Edward Conlon, 1978. In this paper, we try to examine the state of the effort to institutionalize these new behaviors in the current administrative system.

## CONCEPTUAL FRAMEWORK

### Literature Review

Institutionalization has been a buzzword in the *Organizational Study* literature since long ago, approximately, since when *change management studies* came into existence. It simply can be compared to the third stage i.e. *refreezing* of Lewin's 'three stage model' of change management (Lewin, 1947). Institutionalization is divided into two phases and some factors influencing the degree of institutionalization such as reward system, group process, transmission mechanism, etc. are articulated in the very well-accepted paper 'Institutionalization of planned organizational change' (Goodman, Bazerman, and Conlon, 1978). Achilles A. Armenakis, Stanley G. Harris, and Hubert S. Field, 1999 provided a holistic model for institutionalizing changes in an organization in their paper 'Making change permanent: A model for institutionalizing change intervention'.

There is a remarkable number of studies have been found on technological innovation in the public sector of Bangladesh, e-government, and technological transformation of the government detailing their status, effectiveness, and failure in the literature. The paper 'E-governance of Bangladesh: Present Scenario, Expectation, Ultimate Target and Recommendation' by, as the title suggest, evaluated the state of the technological innovation in Bangladesh (Uddin, 2012). The paper 'Political Response to ICT Initiatives in Bangladesh: Diffident to Confident Steps' concluded that, ICT in the public sector getting institutionalized with a positive strong political attitude towards it (Hasan, 2017). Success and failure factors in technological innovation in Bangladesh are identified in the work of (Hossan, Habib, and Kushchu, n.d.). The study of (Hasan, 2015) was focused on e-government in the Bangladesh police which demonstrated particular weaknesses found in that particular e-government project he studied which led the program to be a partial failure. The work of Md. Fahami Ahsan Mazmum, Yukun Bao, 2014 discussed the present scenario of the e-government in the

health sector of Bangladesh and outlined the future direction for the betterment of the service delivery.

However, it gets clarified after scanning the available studies in the literature, there have been several research papers on the perception surveys, e-governance, and ICT policy but, Institutionalization has been the area that has been left out in the discussion of the transformation of the government to the electronic one, though being the most crucial part after the implementation of reforms. This paper aims to shed light on this area and to understand the degree to which technological innovations are aligned to the institutional culture of the public offices. Thus, this paper aims to answer the question,

*What is the current state of institutionalization of technological innovations in public sector in Bangladesh?*

In the light of this question we will also try to examine,

- i. What kinds of e-services are being offered right now?
- ii. Have they been able to be embedded in the current administrative settings?
- iii. What strategies or, steps are being taken in order to institutionalize these innovations?

## **THEORETICAL FRAMEWORK**

The framework of this study largely borrows from the work done by Paul S. Goodman, Max Bazerman and Edward Conlon in their paper, *Institutionalization of Planned Organizational Change* published in 1978, in the 'Research in Organizational Behavior Journal'. We examined the state of institutionalization of technological innovation in the public sector of Bangladesh following the two phases, a. Individual level b. structural level. We tried relate the current scenario in Bangladesh with the indicators provided within the both phase and to what extent they have been accomplished. The indicators in individual level include; 1. Decision to adopt, 2. Decision to continue. And the indicators in the structural level include; 1. Physical setting, 2. Social organization norms and goals 3. The cohesiveness of the social organization.

We, then, tried to relate the strategies and measures taken in the public sector of Bangladesh to the factors provided in the paper where availability of the factors is considered a 'step forward' in the process and absence of any is considered a lacking in the process. Strategies found in the public sector, is described in a different section.

## **OPERATIONAL DEFINITIONS**

### **Innovation**

Innovation can simply be understood as thinking outside the box or, going against the current. According to Druker (1974), innovation is the process of equipping with improved capabilities or increased utility. So, in a sense innovation can be seen as upgrading any present system to better suit the needs, but innovation is not only upgrading to the next best thing but also making that jump sustainable, efficient and worth the risk. In a more public setting innovation can be described as the formulation of adequate policies to attract foreign investment, create an innovation culture, facilitate the integration of new technologies, and support innovative small and medium-sized enterprises (SMEs) and creators and produce market innovations (Tenenbaum, 1999).

### **Institutionalization**

Institutionalization can be generally described as a process of embedding a practice in an institute for a long time. This can be described as the refreezing phase of Lewin's unfreezing-moving-refreezing model (Lewin, 1947). As described by Beer, 1976 institutionalization can be seen as the stabilization of change at a new equilibrium state through supporting changes in reference group norms, culture or organizational policy and structure. So, institutionalization can be understood as making a change sustainable for in the long run.

## **METHODOLOGY**

This paper focuses on the analysis of secondary sources i.e. content and document analysis. Primary data were also collected in the form of expert interview. Priority was given on examining the prior research, survey and other forms of literature in relevance to the central focus of the paper. Primarily, the sources were used as contents for this paper are research papers form of academic journals, newspaper articles, books, survey, and perception studies from the service providers of Bangladesh.

The expert interviews were conducted in the form of 'semi-structured interview'. Two experts in the e-governance sector were consulted for this paper. One is an e-governance specialist, who is currently working as a faculty member in the Department of Public Administration at the University of Dhaka. Another is a high ranking official of the Social Innovation Cluster at the A2i, ICT Division.

## **TECHNOLOGICAL INNOVATIONS IN PUBLIC SECTOR**

The Bangladesh of the 21st century is one of competition, efficiency, and better utilization of resources. The public sector is not outside the scope of this

revolution. With the increasing popularity of New Public Management (NPM), the public sector now has to compete with the much more efficient private counterparts. So, innovation of the age-old systems in the public sector to bring new life into them is a must. And in that regard, using cutting-edge technologies in favor of the public sector can finally bring greater competitive advantage to their side. That is the rationale behind the introduction behind the plethora of online and e-services that have been introduced in the last decade. Most noteworthy of these technological innovations are,

### **E-Nothi**

The traditional decision-making and information system in Bangladesh involve a lot of paper-based action. These paper-based actions are both time-consuming and resource-heavy. And the most complicating part of the process is that the involved paper-based files are vulnerable to tempering via environmental factors, accidental mishaps. These plagued the system for a long time. To combat this, with the launching of all the DESCs E-Nothi/E-Filing system was introduced by the A2i. DESCs E-Filing service has made the service delivery process easy by minimizing time, hassle, and money for citizens. It also reduces corruption and increases accountability of the government service delivery organizations, teams, officers, and staff (A2i, 2015).

### **The National Portal**

The national portal is a unique platform through which citizens can get access to information over various government offices of both central levels, such as departments, directorate, ministries, etc.; and local levels such as Union, Upazila, and District. To promote citizens' with regards to public information and services by providing a single window of access is the main objective of the national portal (A2i, 2016). The National Portal of Bangladesh is currently the largest web portal in the world, containing a total of 25000 websites. It was launched on 23rd June 2014 and has been operating ever since as means to make information more readily available for the general people.

### **DESC**

NESS (The National e-Service System) has introduced the District e-Service Center (DESC) which is an ICT facilitated one-stop service Centre in lieu of traditional paper based manual services at DC office (A2i, 2015). DESCs are now available in all 64 districts of the country that were launched on 14<sup>th</sup> November, 2011.

### **E-Mutation**

With a view to digitalizing the land information system, A2i designed and introduced an electronic or "e-mutation" service. The e-Mutation service, after several rounds of pilot tests, started its journey on February 2017 and by the end of November 2018, around 310 Upazila (out of 484) and 2,714 union land

offices (out of 4,554) had introduced this digital service (Hasanuzzaman, Lomborg, 2019).

### **VAT & Customs**

This sector has seen quite a few number of technological innovation and implementation of the innovations. Notable among these are

#### **VAT Online Project (VOP)**

The Government of Bangladesh approved a World Bank funded development project VAT Improvement Project (VAT Online Project) in 2014. The developing system by VAT Online Project connected 287 VAT circle offices, 84 divisional offices, 12 commission rates and two directorates. It works to ensure revenue mobilization and transparency in the VAT administration as well as a modern administration.

#### **Integrated VAT Automation System**

For VAT automation NBR introduced an Integrated VAT Automation System (IVAS) in 2014 which ensures the comprehensive improvement of customer convenience. It consists of five modules in total from which only the Registration Module and Return Module have been implemented and the rest of the modules are being processed to perform.

#### **Electronic Fiscal Device**

The National Board of Revenue (NBR) has taken an initiative to procure and install 10,000 electronic fiscal devices (EFD) in 13 types of business entities from the end of this year in a move to check value added tax (VAT) evasion.

#### **E-services in Taxation**

The national Revenue Board had launched online tax return filing system back in 1<sup>st</sup> November, 2016. Alongside the tax return system they have also introduced eTIN, ePayment, VAT Calculator, eBIN, iVAS, eAuction etc., systems which are readily available online without the need to go a public office.

## **STATE OF INSTITUTIONALIZATION OF INNOVATIONS**

### **The phases and our current phase**

#### **Phase 1: Individual level**

In this section, we would like to illustrate Bangladesh's current decision and commitment to adopt technological innovation to advance the public administrative efficiency and service delivery system. We begin by examining Bangladesh's decision to adopt technological innovations.

#### ***Decision to adopt***

1. The decision to adopt begins with the targeted demographics' ability to perform the new behavior. We can somewhat observe that the current administrative personnel have the capability to use technological innovations such as the e-filing system, VOP, National web portal, etc. The ability to use these innovations can be broken down into two distinct categories, supply, and demand for the services. There is, indeed, a supply of e-services and innovations but they are seldom specialized and tailored by capable personnel. Among the manpower engaged in various ICT-related jobs in different ministries and divisions only 25% of them are system analysts, 2% web developers, 2% web administrators, and 11% IT trainers (Babu, 2009). And on the other hand, the demand side also plays a pivotal role in actually making the services sustainable and creates a need for them to be institutionalized. The International Telecommunication Union had ranked Bangladesh 147th among 176 countries in their ICT development index in 2017 (ITU, 2017). This was a step down from 146th place in 2016. On the other hand the E-governance survey 2018 done by the United Nations has shown Bangladesh is a notable example of a country with a Very High-Online Service Index (0.7847) but a much lower E-Governance Development Index score (0.4862), placing the country in the Middle-EGDI level group. The EGDI score for Bangladesh was pulled down by low levels of development in TII and HCI (UNITED NATIONS DEPARTMENT FOR ECONOMIC AND SOCIAL AFFAIRS, 2019).
2. Extrinsic rewards such as pay, recognition, and approval are also a big factor for institutionalizing the new method (Goodman, Bazerman, and Conlon, 1978). Bangladesh is yet to adopt any specific reward system for using technology in the public sector in an individual level. But it is observed that the spearheading organization A2i has received various awards such as BASIS National ICT Awards 2019, in five categories (A2i, 2019) for their valiant efforts to bring technology-based innovation to the public administrative system in Bangladesh. Recognition like this helps to foster and institutionalize the changes.
3. Institutionalizing any new behavior in an organization requires commitment from all levels of the organization. The current ruling party since coming to power back in 2008 has back their claim of creating a *Digital Bangladesh* or better known as *Vision 2021*. This vision was an integral part of their election manifesto in 2008 (Bangladesh Awami League, 2008). They again recommitted to the vision, when they were reelected in 2018. Then there is also the commitment to achieve the goals stated in SDG by 2030 for which inclusion for technological innovations in the public sector is a must. As opined by e Mohamed Abul Kalam, Ph.D. former head, Department of Medical Sociology, Institute of Epidemiology, Disease Control &

Research (IEDCR) that the government needs to ensure that the whole of the public sector is fully supported by high-quality ICT infrastructure (Kalam, 2018). So, the political commitment and international pressure to follow through it are there. But individual commitment to actually internalize the new ways of working is another question altogether.

### ***Decision to continue***

The attractiveness of adopting the new technology has also played a vital part in keeping the decision to continue the decision to use them. The technology has been very attractive for the administration to adopt. For example, after implementing the E-Filing at the DESC in comparison with the previous system of DC office, the average time required to process service has been reduced by 8% (280 min to 210 min) in online service, average cost reduced by 86% and the visit was reduced by 33% (A2i, 2015). So, we can observe that introduction of the technology is truly an attractive alternative as it has made the administration more efficient. And thus it helps to keep up the pace of institutionalizing the new behaviors.

### **Phase 2: Structural Level**

The structural level is also important as for institutionalization to take complete effect it must be a part of the social structure. Individuals must perceive the new behavior to be appropriate for their culture and beliefs, see others conducting the new behavior and on the structural level they must believe that the organization will support their new work, this encourages them to adopt the new trend. In this premise, the communication system prevalent in the organization is an important part of institutionalization. We can view the state of the structural level from the following points,

1. The physical setting of the organization plays a vital role in the communication system within the organization. Compact offices restrict the natural communication between employees. A physical setting that facilitates the visibility of others' behaviors creates a necessary condition for the development of beliefs about appropriateness and group sanctions (Goodman, Bazerman, and Conlon, 1978). But open office environment is yet to be established in the Bangladesh public offices. This can be somewhat explained Greet Hofstede's cultural dimensions. Bangladesh has a high score (80) in power distance which means that Bangladesh accepts high power distance, people have their place in the hierarchy and centralization is popular (Hofstede Insights, nd). As such informal communication or things like open offices are yet to be encouraged.
2. Social norms and goals also play in the process of institutionalization of new behavior. And this has become an impediment for Bangladesh in



the long run for institutionalizing the e-services. For example, in a 2018 study for e-health acceptance in Bangladesh it was found that illiterate rural people were mostly unaware of e-health services and the higher educated rural people considered it as a temporary alternative to the mainstream health services, thus remain less interested (Hossain *et al.*, 2019). This represents a picture of the acceptance for e-services across Bangladesh. As the demand side wanes due to traditional beliefs and norms the supply side also feel less encouraged to follow through with their commitment to institutionalize the innovations.

## **THE FACTORS BEHIND INSTITUTIONALIZATION IN BANGLADESH**

This section will discuss and examine the strategies taken by the government in order to sustain the newly brought changes in the public offices on the basis of the factors provided in the article ‘Institutionalization of planned organizational change’ (Goodman, Bazerman, and Conlon, 1978) and strategies outlined in the article titled ‘Making Change Permanent: A model for institutionalizing change interventions’ (Armenakis, Harris, and Feild, 1999). A critical analysis thru’ cross-checking with factors may reveal the current state of progress towards the institutionalization of the changes.

*Training and Development* (Parson *et al.*, 1991) found that personal computer training is instrumental in order to institutionalize new technology-oriented behavior. It is very basic for any organization to educate their employee with the new strategy introduced. The public sector has shown some progress in this field. A study has found 8,686 civil servants have been trained (till December 2018) to build up capacity on the ‘e-Nothi’ system by A2i (Khatun, 2019). The trained civil servants, then, after getting back to their offices have arranged the training in their own offices to develop the capacity of other officers which is a very good practice as identified by our expert. Networking is also a very good strategy to diffuse the change throughout the sector.

### **Management of internal and external information**

This is crucial in regard to make a cohesive change management process in any organization (Armenakis, Harris and Feild, 1999). Intranet is a network among the offices of the public offices in Bangladesh. This can be considered one of the best developments to establish a connected technology-based public administrative system. This helps to manage internal and external information in an organized manner which helps the process of institutionalization.

### **Sponsorship**

Sponsorship plays a pivotal role in the process and to a large extent affects the degree of institutionalization. This refers to the matter of ownership and commitment of the owners towards a particular innovation. It is discussed above that, most of the technological innovations that have been brought in the

public sector of Bangladesh are initiated and supported by the A2i which has been an office under the prime minister's office till 2018. Thus, being backed by the highest echelon of the public organizations and supported by the government's flagship agenda, these innovations have been acquired great importance to be implemented and continued to be sustained. Withstanding the absence of other factors for institutionalization, the sponsorship factor plays a wider role in regards to embedding the technological innovations in the public sector organizations' mode of operation. It also can be understood in the light of the traditional bureaucratic characteristic '*servicing the political will*' by the bureaucrats in order to maximize the benefit as identified in the *Public Choice theory*. But, the shifting of A2i from PMO to ICT Division i.e. change of sponsorship may have significant effects which may require a complete series of strategies to be taken by the government in order to keep pace with the flow that has been in the line since the A2i came into operation.

## FINDINGS & ANALYSIS

We can begin our analysis of the state of institutionalizing the technological innovations from the *ability* of Bangladesh's administrative system to use the technologies. As we have presented in the first section of the study there is a lack of specialization for using the innovations in the *supply side*. Not enough IT personnel are present on the supply side to have an effective impact on changing the way people currently do their work. This situation is further backed by the lack of a proper legal framework to enforce technological innovations in public offices. As the e-governance specialist opined, the ICT policy and Secretariat Instructions, 2014 are there to foster the use of ICT in all sectors but these frameworks lack a proper enforcement mechanism and are not enough to institutionalize these practices in an organic social setting. This may be attributed to the traditional administrative tendency of the bureaucrats or, service providers being highly resistant to change. The interviewed official from A2i further added that though these rigid and resistant tendencies are obstacles that we have to overcome, in recent years there has been much more acceptance towards these innovations.

The ability also depends on the *demand side*. The demand side in Bangladesh, as in., the mass public also lacks proper awareness of the e-services in place for them. And even when they are aware of the services, the public tends to prefer the traditional service delivery system over the innovative one which demonstrates Bangladesh's cultural orientation as seen from the e-health survey. This may be the result of the improper publicity strategy of the service providers. And also an important contributing factor for this public resistance is IT illiteracy. As we can observe from the e-governance survey 2018, Bangladesh has a very high score for Online Service Index but a very low score for the e-governance Development Index score. As they found, this occurred due to low levels of development in the telecommunication Infrastructure Index and Human Capital Index. This

indicates that the demand side for technological innovations is still lagging. Here the official from A2i pointed out in the agreement to the e-governance survey that people are still not completely aware of the number of services that are being provided online.

*Rites and ceremonies* are some of the best strategies to institutionalize innovations in the organizational culture (Armenakis, Harris, and Feild, 1999). *Innovative fairs* arranged by the government like the Tax Fair, Innovation Fair are trying to bridge the gap between the demand and supply side by creating awareness and changing the behavior of the service providers towards the technological innovations through aligning them in the culture.

The current level of *commitment* towards embedding e-services in both the demand and supply side is enough to get things going but not enough to keep up the pace in the long run. The infrastructure and ICT policy is in line to operate new and innovative e-service but they don't contain any solid guideline for coordination efforts. The division of responsibility to encourage, operate and monitor these innovations is not clearly stated anywhere either. This creates a complex situation for spearheading any innovation. Quoting the expert in regards to this complex situation, "Policy owner is not visible". For example, the Chief Innovation Officer and his Innovation team introduced by the A2i in all the ministries are a welcome change but they give rise to a conflict of ownership between A2i and the ministries as the teams' line organization is the A2i. This makes them indifferent to take ownership of the ministry and the duty they perform in the ministry. This also contributes to keeping the transmission and socialization process of the Innovation officer and his team inside the ministry incomplete. Both of our experts agreed with the fact that the current level of commitment towards institutionalizing these innovations is not enough to create impactful marks.

In the case of HRM practices, a *selection* system can be used to institutionalize innovations by recruiting those individuals whose interest serves the present state of the organization (Armenakis, Harris, and Feild, 1999). The scenario in the public sector in Bangladesh does not reflect the higher authority's concern in this process. It recruits public officials through basic preliminary tests which are to examine their basic knowledge over some general subjects. Though public employers i.e. PSC and other organizations have recently decided to add a few (varies organization to organization) ICT-related questions in every recruitment test. As we analyzed and our expert remarked, those ICT-based questions are not enough to justify one's ability to operate in a technology-circumscribed environment. The e-governance specialist added that, the capacities of the public officials in the administration's peripheral offices are very poor.

The type of *reward system* has significant effects on the degree of institutionalization. It is pertinent that, motivation factors have a relative influence on the behavior of the officials. The government has been giving several prizes such as the Public Administration award, Prime Minister's award to the organizations and senior officers rather than to those who are

implementing the changes in the down supply level. This can be one of the dissatisfaction factors for the employee who are adopting this new mode of operation and getting nothing in return for their effort and may sabotage the whole core intention of fastening the service delivery. But there still is hope for a better reward system, as the official from A2i opined that the upcoming Annual Performance Appraisal Report system that is going to replace the Annual Confidential Report system will include a sector for marking the service provider's generation of innovative ideas and ability to adopt innovative behavior.

*Diffusion* refers to spreading the change adoption within the organization as well as throughout the whole sector. One of the most important tools for diffusion is *documentation* of the newly enrolled program. Documentation works as a communicating mechanism for the offices which adopted the same innovation as well as it helps diffuse the change throughout the sector being the guideline manual. The state of documentation of technological innovation is very poor in our country. Both of our experts again agreed that current documentation and diffusion practices for these innovations are not up to the mark.

Institutionalization is also propelled by *feedback systems*. As feedback systems create opportunities for learning and making changes in real-time processes. No properly documented feedback process could be found in the secondary sources; this suggests that the feedback process for these services is improperly managed. In the interview, the expert also agreed with this argument that we are yet to establish a complete feedback process for keeping track of the e-services.

## CONCLUSION

This study, almost, has been conducted on the basis of secondary data available in the literature which has been one of the most notable limitations of this study. As there has not been done any research of this kind i.e., which has investigated the internal scenario of any public organization of the country, there is a very poor amount of data found on the basis of the indicators selected from the theoretical framework. This study should be done on the basis of primary data including office visits, questionnaire surveys and interviews of the service providers which has been impossible for us in the absence of time and funding. But that does not invalidate the findings and points raised throughout the paper. The inclusion of technology in all walks of life is inevitable. The longer Bangladesh takes to adopt and institutionalize behaviors regarding usage of technological innovations the further it will lag behind in making a proper citizen-oriented civil service system. In this regard, the country must make legal frameworks to support and reinforce these innovations, make tangible reward systems that recognize and encourages these innovations and innovative behavior. Bangladesh has already started its journey towards e-governance but now it is imperative that the administration

commits to this stride and institutionalizes the innovations, so that things like regime change or institutional memory loss do not undo the hard work that has been put into it.

## BIBLIOGRAPHY

- A2i 2015, *A TVC+ Study on E-Filing Service of DESC*, Dhaka: Access to Information, Prime Minister's Office.
- A2i 2016, *A TVC+ Study on National Portal Service*, Dhaka: Access to Information, Government of Bangladesh.
- A2i 2019, *BASIS National ICT Awards held on Saturday: a2i claims 5 prizes!*[Online] Available at<<https://a2i.gov.bd/event/basis-national-ict-awards/>>
- Armenakis, AA, Harris, SG & Feild, HS 1999, 'Making Change Permanent: A model for institutionalizing change', *Research in Organizational Development*, vol. 12, pp. 97-128.
- Babu, HMM 2009, 'IT work plan for implementing digital Bangladesh (in Bengali)', vol. 18, no. 12, pp. 37-39.
- Bangladesh Awami League 2008, 'Election Manifesto of Bangladesh Awami League', 9th Parliamentary Election.
- Beer, M 1976, 'The technology of organization development', In: *Handbok of industrial and organizational psychology*. Chicago: Rand McNally, pp. 937-993.
- Parson, C, Lldcn, R, O'Connor, E & Nagao, D 1991, 'Employee rsopnses to technologically driven change: The implementation of office automation in service organization', *Human Relations*, vol. 44, no. 12, pp. 1331-1356.
- Hossan, CG, Habib, MW & Kushchu, I n.d., *Success and Failure Factors for e-Government projects implementation in developing countries: A study on the perception of government officials of Bangladesh*. s.l.:s.n.
- Druker, P 1974, *Managemen: tasks, responsibilities, practices*, New York: Harper & Row.
- Election, 2008, Available at<<http://www.albd.org/articles/news/31125/Election-Manifesto-of-Bangladesh-Awami-League,-9th-Parliamentary-Election,-2008>>.
- Goodman, PS, Bazerman M & Conlon, E 1978, 'Institutionalization of Planned Organizational Change', *Research in Organizational Behaviour*, September, vol. II.
- Hasan, MM 2015, 'E-Government Success And Failure: A Case Study Of Bangladesh Police', *Daffodil International University Journal Of Science And Technology*, vol. 10, no. 1-2, pp. 61-67.
- Hasan, S 2017, 'Political Response to ICT Initiatives in Bangladesh: Diffident to Confident Steps', *Public Affairs And Governance*, vol. 5, no. 1, p. 35. doi: 10.5958/2321-2136.2017.00003.0.
- Hasanuzzaman & Lomborg, B 2019, *Prioritising Land Information Service Framework (LISF) for stronger e-Mutation service*, [Online]

- Available at<<https://opinion.bdnews24.com/2019/09/10/prioritising-land-information-service-framework-lisf-for-stronger-e-mutation-service/>>
- Hofstede Insights (no date), 'What about Bangladesh?', Hofstede Insights, Available at<<https://www.hofstede-insights.com/country/Bangladesh/>>.
- Hossain, N et al. 2019, 'Factors Influencing Rural End-Users' Acceptance of e-Health in Developing Countries: A Study on Portable Health Clinic in Bangladesh', *Telemedicine and e-Health*, vol.25, no. 3, pp. 221–229. doi: 10.1089/tmj.2018.0039.
- ITU, 2017, *ICT Development Index 2017*, [Online] <<https://www.itu.int/net4/ITU-D/idi/2017/index.html>> Accessed 2019.
- Khatun, M J2019, *An Evaluation of 'e-Nothi' System in Government Office Management*, Dhaka: Project Management Team, A2i.
- Lewin, K 1947, 'Frontiers in Group Dynamics', In: *Human Relations*. s.l.:s.n., pp. 1-51.
- Mazmum, MFA & Bao, Y 2014, 'e-Health in Bangladesh: Current Status, Challenges, and Future Direction', *The International Technology Management Review*, vol. 4, no. 2, pp. 87-96.
- Tenenbaum, J 1999, *The need for establishing innovation and invention support structure for services in developing countries*. Bridgetown, Barbados, s.n.
- United Nations 2018, *United Nations E-Government Survey 2018*, New York: United Nations.
- Uddin, G 2012, 'E-governance of Bangladesh: Present Scenario, Expectation, Ultimate Target and Recommendation', Vol.3, no. 11, pp. 20.
- United Nations Department for Economic and Social Affairs 2019, *United Nations E-Government Survey 2018*, S.1: United Nations.



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