

PRACTICE OF ELECTRONIC SERVICE IMPLEMENTATION IN HIGHER EDUCATION INSTITUTIONS OF ETHIOPIA

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Abstract

The main objective of this study is to assess the practice of implementing electronic services in Ethiopian higher education institutions. The study adopted a descriptive type of research design in conjunction with a quantitative research approach. A multistage sampling technique was used to acquire the relevant data from 364 selected graduate program students. The acquired data was evaluated using descriptive statistics by considering the number of occurrences per item and its percentages, and the average of items and its standard deviation using Stata-16 software. The study's findings showed that electronic service implementation has a potential advantage for educational provision regarding flexible access, greater speed, unlimited service time, and accuracy by using technology to assist teaching. However, the practice of electronic service implementation is weak. In fact, there is a web presence in the universities, the active functionality in terms of interaction, transaction, transformation, and full integration was at a low stage. Therefore, the active involvement of students, employees, and the management body of the universities are needed to improve the E-service implementation of the universities. Likewise, continuous training should be given for students and employees to improve their commitment towards E-service implementation.

Keywords: Electronic Service Implementation, Ethiopia, Higher Institution, Students.

I. INTRODUCTION

Electronic service is supplied by information and communication technology and allows people, businesses, and government sectors to have unlimited access to available organizational information. By streamlining and rearranging operating procedures, it can reduce expenses and levels of organizational processes (Kvasnicova et al, 2016). Many advantages exist for using electronic services to save money and improve government service operations, such as increased efficiency, cheaper transaction costs, greater transparency, and better services for residents (Solinthone & Romyantseva, 2016).

Globally, Electronic Service Implementation (ESI) is one of the key drivers of globalization and development. It has become a significant source of innovation and improvement of organizational service delivery. It can potentially affect every aspect of objective achievements and customer satisfaction by transforming traditional service delivery into modern service delivery. In order to deliver a service with greater speed and accuracy, the implementation of electronic service appeared to be getting a serious point (Kim-Soon et al, 2014). However, developing countries encountered many challenges during E-service implementation compared to developed countries (Apleni & Smuts, 2020; Desta et al., 2019).

Developing countries implement E-service lower than they planned. About 85% of implementations were unsuccessful (Ingram et al., 2018). This indicated that E-service delivery in developing countries lags compared with developed countries, which needs further research.

Universities are the primary organizations that provide E-services. Regular evaluation and appraisal of their E-Services supplied to stakeholders could help them keep up with the quick change of learning technology and service provision diversification (Koudiki & Janardhanam, 2017). However, the trend of examining E-Service implementation quality and status of universities is very weak (Ingram et al., 2018). Ministry of Innovation and Technology of Ethiopia (MITE) has been highly motivated to implement and sustain E-service implementation by making it a principal agenda in achieving 2030 Ethiopian Sustainable Development Goals (SDG) (Tolla, 2018). Therefore, the main target of this study is to evaluate the practice of E-service application in higher institutions of Ethiopia.

2. Literature Review

The study tried to assess the practice of electronic service implementation in higher institutions. The practice of E-service implementation has several stages. The stages of e-service implementation refer to the levels of website development in providing services. In this regard, literature was found to vary using the terminology and contents of the stage that should be concluded in each (Alshehri & Drew, 2010). The common growth model of E-service implementation, which different scholars developed, was listed as follows:

2.1. Presence

This level is characterized by a simple information-providing, inactive Website, which is frequently referred to as "brochureware," implying the same amount of functionality as a physical brochure. It offers static material, no customization, and provides information digitally. It is the first and simplest way for residents to get started with E-Service, but it also provides the fewest possibilities. An excellent model is a basic website that provides basic information about an organization, such

as mailing address, hours of operation, and phone numbers, but has no collaborative competencies (Lee, 2013).

2.2. Interaction

The interaction stage includes digital communication or digital transformation of information. Even though interactive Web-based initiatives have greater competencies, their capacity to modernize organization activities remains restricted. The majority of interactions is simple and revolves around the exchange of information. These efforts are intended to help customers avoid making a journey to an office or making a phone call by making routinely requested information and documents available 24 hours a day, seven days a week. These tools may comprise commands for accessing assistance, printable papers that can be downloaded and returned to an organization, or contact via e-mail to answer simple questions. In the interaction stage, simple exchanges between government and citizen, government and business, or government agency to government agency are accessible. Customer's inquires via e-mail can take as an example here (Vermesan & Bacquet, 2017).

2.3. Transaction

The transaction stage includes service like online transaction and back office integration. These efforts are more complex than simply providing information and they represent the types of e-government activities that are often associated with it. Clients can complete assignments entirely online at any time of day or night. These systems successfully build self-service operations for tasks including license renewals, tax and fee payments, and procurement contract bid submissions. Despite the fact that participation is larger than in second-stage projects, the activities still involve a one-way information flow (either to government or to the client, depending on the activity). Electronic responses are, on the whole, very regularized and generate predictable results. Transactions such as paying taxes or fees, paying for license renewals online or bidding on procurement contracts are all available during the transaction stage (Sun et al., 2015).

2.4. Transformation

For E-Service endeavors, transformation is the highest phase of progression. At this level, initiatives make full advantage of technology's potential to transform the way government services are conceived, structured, and delivered. These projects would have strong customer relationship management capabilities, allowing them to respond to a wide range of questions, concerns, and requests. One of these programs' distinguishing features is that it allows for the free flow of information and collaborative decision-making across federal, state, municipal, public, and commercial partners. To put it another way, transformative e-Government initiatives usually aim to eliminate organizational barriers that promote agency-centric solutions in favor of customer-centric ones. Some proponents suggest that, at its most advanced level, e-government might reform, merge, and/or replace current agencies with virtual ones. Rethinking how government functions are envisioned and arranged is the highest phase, which is most closely related to the concept of governance. Allow citizens and government entities to interact and communicate with each other over the internet in a two-way fashion. It gives service customers the option of paying taxes, birth certificates/passports, applying for ID cards, renewing licenses, and other related community to government activities online seven days a week, 24 hours a day (Kiflie & Filmon, 2019).

2.5. Networked Presence

In terms of online e-based service projects, the seamless stage is the most advanced. It comprises direct user integration into the administrative process as well as active user participation in the administrative process. It is most commonly referred to as seamless E-Service stage since it integrates government to government, government to community, and community to government interactions. The administration encourages residents to make informed decisions and is willing and able to engage the public in a two-way open dialogue. Using interactive features such as web comment forms and innovative online consultation approaches, the government aggressively solicits citizen opinion on public policy, lawmaking, and democracy

participatory decision making. This level of the paradigm presupposes entire collaboration of public sector institutions, as well as awareness of the notions of participatory democracy, collaborative decision-making, and citizen empowerment as a democratic right (Casalino, 2014).

3. Research Methodology

The study was conducted in Ethiopia. In Ethiopia, there are both public and private Colleges and Universities. But, the study was conducted at public universities. Some of the public universities are Adama University, Addis Ababa University, Adigrat University, Aksum University, Ambo University College, Arba Minch University, Asosa University, Bahir Dar University, Bule Hora University, Debre Birhan University, Debre Markos University, Debre Tabor University, Dilla University, Dire Dawa University, Gonder University, Haramaya University, Hawassa (Debub) University, Jijiga University, Jimma University, Mada Walabu University, Mekelle University, Metu University, Mizan Tepi University, Semera University, Wachamo University, Welkite University, Wolaita Sodo University, Woldiya University, Wollega University, and Wollo University (<https://addisbiz.com>)

This study used descriptive research design. This is due to the fact that descriptive research design fits for the research objective when it is about assessing or summarizing variable of the study (O'leary, 2004). The population of this study was graduate students who are attending selected government universities of Ethiopia. As per the report of selected Universities, there are 4010 graduate program students were currently enrolled. Accordingly, the representative sample size was determined by using Yamane (1967) formula as follows:

$$n = \frac{N}{1 + N(e)^2}$$

Where: n = Sample size

$$n = \frac{4010}{1 + 4010(0.05)^2}$$

N = Total Population

$$n = 364$$

e = Sampling Error

After determining the sample size, the researcher used a multistage sampling

procedure. In the first stage, three universities such as Hawassa University, Addis Ababa University, and Adama University were selected purposively because of their experience and the existence of large numbers of graduate programs. In the second stage, colleges were stratified. In the third stage, departments were selected purposively based on the number of students they had. In the fourth stage of sampling, an individual respondent in each sample department were selected using systematic random sampling technique to ensure that there is no over or under-representation in the sample as it is in the sampling frame (Bhattacharjee, 2012).

Closed-ended questionnaire was prepared, revised, and administered based on the objectives of the study. The questionnaire was administered to selected students in their respective Universities. The questionnaire was prepared to collect information on E-service

implementation and its determinants. The questionnaire was prepared, and the reliability of the research questionnaire was tested using Cronbach's alpha coefficient. The collected data were entered in statistical software called Stata for Windows-16. The data was evaluated using descriptive statistics by considering the number of occurrences per item and its percentages, and the average of items and its standard deviation.

4. Results and Discussion

The data which was collected from sampled respondents were analyzed and presented. The study's primary purpose was to assess the practice of electronic service implementation in higher institutions of Ethiopia.

Table 1: Perception of Respondents on Web presence

No.	Statements	SDA		DA		N		A		SA	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1	The university has an up-to-date functional official website	0	0.0	6	1.6	15	4.1	218	59.9	125	34.3
2	The university website allows visitors a downloadable form	0	0.0	7	1.9	30	8.2	164	45.1	163	44.8
3	The university's programs, calendars, schedules are available on website	132	36.3	143	39.3	69	19.0	13	3.6	7	1.9
4	There is access to update information and news through the university website	4	1.1	51	14.0	15	4.1	232	63.7	62	17.0
Overall mean (SD)						3.59(.396)					

Note: SDA= Strongly disagree, DA= Disagree, N= Neutral, A= Agree, SA= Strongly agree

As presented in Table 1, the overall average value of web presence is 3.59 with a standard deviation of 0.396. This showed that the mean value is greater than 3.4 which relied on agreement level based on statistical data composition techniques of mean score ranges

for five-point Likert scale questions. Therefore, the sampled respondents in the study area perceived that there is good web presence. This indicated that website is available and provide services like department choice and electronic library.

Table 2: Perception of Respondents on Interaction

No.	Statements	SDA		DA		N		A		SA	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1	Students and staff can access their profiles from the university website	117	32.1	187	51.4	48	13.2	9	2.5	3	0.8
2	Submission of online applications is possible	58	15.9	156	42.9	88	24.2	56	15.4	6	1.6
3	Teachers can submit students' academic result online	4	1.1	42	11.5	36	9.9	211	58.0	71	19.5
4	Students can see their academic result online	120	33.0	103	28.3	52	14.3	51	14.0	38	10.4
Overall mean (SD)						2.64(.634)					

Note: SDA= Strongly disagree, DA= Disagree, N= Neutral, A= Agree, SA= Strongly agree

As presented in Table 2, the overall average value of interaction is 2.64, with a standard deviation of 0.634. The result showed that the mean value is greater than 2.6, which relied on a neutral level based on statistical data

composition techniques of mean score ranges for five-point Likert scale questions. Therefore, the sampled respondents in the study area perceived that the university interaction in E-service implementation was not satisfactory.

Table 3: Perception of Respondents on Transaction

No.	Statements	SDA		DA		N		A		SA	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1	There is a transaction between the university and its stakeholders	110	30.2	135	37.1	91	25.0	18	4.9	10	2.7
2	There is an online response for service requests through the website.	1	0.3	42	11.5	59	16.2	167	45.9	95	26.1
Overall mean (SD)						2.99(.676)					

Note: SDA= Strongly disagree, DA= Disagree, N= Neutral, A= Agree, SA= Strongly agree

As presented in Table 3, the overall average value of transaction is 2.99 with a standard deviation of 0.676. This showed that the mean value is less than 2.6 which relied on neutral level based on statistical data

composition techniques of mean score ranges for five-point Likert scale questions. Therefore, the sampled respondents in the study area perceived that the E-service transaction was inadequate and its progress is too slow.

Table 4: Perception of Respondents on Transformation

No.	Statements	SDA		DA		N		A		SA	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1	The low-level hierarchies are	146	40.1	148	40.7	60	16.5	8	2.2	2	0.5

	linked to the higher-level system with E-service										
2	There is integration among the E-services across different administrative boundaries	76	20.9	169	46.4	106	29.1	11	3.0	2	0.5
3	There is an online dialogue between the university and its stakeholders	124	34.1	171	47.0	61	16.8	6	1.6	2	0.5
Overall mean (SD)						1.95(.540)					

Note: SDA= Strongly disagree, DA= Disagree, N= Neutral, A= Agree, SA= Strongly agree

The result of Table 4 indicates that the overall average value of transformation is 1.95 with a standard deviation of 0.540. This showed that the mean value is less than 2.6 which relied on disagreement level based on statistical data

composition techniques of mean score ranges for five-point Likert scale questions. Therefore, the sampled respondents in the study area perceived that the university has low commitment on transformation.

Table 5: Perception of Respondents on Networked Presence

No.	Statements	SDA		DA		N		A		SA	
		n	%	n	%	n	%	n	%	n	%
1	There are online consultation services through the website	127	34.9	160	44.0	57	15.7	19	5.22	1	0.3
2	The university has a well-designed website and other social media platforms	137	36.8	147	40.4	68	18.7	14	3.9	1	0.3
3	The e-services platforms facilitate the interaction	113	31.0	166	45.6	64	17.6	19	5.2	2	0.6
Overall mean (SD)						1.94(.564)					

Note: SDA= Strongly disagree, DA= Disagree, N= Neutral, A= Agree, SA= Strongly agree

The result of Table 5 indicates that the overall average value of networked presence is 1.94 with a standard deviation of 0.564. This showed that the mean value is less than 2.6 which relied on disagreement level based on statistical data composition techniques of mean score ranges for five-point Likert scale questions. Therefore, the sampled respondents in the study area responded that the networked presence was at infant stage.

Table 6: The overall summary of E-service implementation practice

Variables	Mean	SD
Web presence	3.59	0.396
Interaction	2.64	0.634
Transaction	2.99	0.676
Transformation	1.95	0.540
Networked presence	1.94	0.564
Overall summary	2.62	0.562

The overall summary results showed that the first three stages of E-service implementation, such as web presence, service interaction, and service transaction, were at the beginning, whereas the last two stages of E-service implementation, such as service transformation, and networked presence, were at the adoption

stage and had not yet begun to be implemented for service delivery. As a result, the introduction of E-Service delivery in universities was in its infancy.

5. Conclusion

Electronic service implementation has a potential advantage for educational provision regarding flexible access, greater speed, unlimited service time, and accuracy by using technology to assist teaching. However, the practice of electronic service implementation is weak in higher Learning Institutions of Ethiopia. There is web presence in the universities that allows basic information provision, service interactions through e-mail to deliver and receive information, student's Information Management System to deliver, receive, process, and store student's academic information, and e-library to deliver books through digital instruments. However, the active functionality of E-services in terms of interaction, transaction, transformation, and full integration were at the infant level and its progress is too slow. Therefore, active involvement of, ministry of education, management body of the universities, employees, students are needed to improve the E-service implementation of the universities. Likewise, continuous training should be given for management, students and employees to improve their commitment towards E-service implementation.

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