

Contribution of BPATC's Digitization Initiatives to its Core Values

Afroza Parvin

Md. Akram Ali

ASM Riyad Hassan Gourab

Tania Moon

S. M. A. Moudud Ahmed

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Bangladesh Public Administration Training Centre

Submitted by

Afroza Parvin

Md. Akram Ali

ASM Riyad Hassan Gourab

Tania Moon

S. M. A. Moudud Ahmed

Declaration

The research team, consisting of 05 members, was led by team leader Afroza Parvin. S. M. A. Moudud Ahmed guided the team to develop a conceptual framework. Md. Akram Ali led the data collection. Tania Moon guided the data entry and analysis team. ASM Riyad Hassan Gourab contributed as the Research Manager and led the report writing teamwork.

Abstract

Bangladesh Public Administration Training Centre (BPATC) is the apex training centre in the country to provide training to the civil service officers of government, non-government and autonomous organizations. As the government of Bangladesh is trying to have digitization in each and every sector, BPATC has also taken many digitization initiatives with the intent to make the training facility modern, user-friendly, and state-of-the-art. The primary purpose of this paper is to determine the extent of the contribution of digitization initiatives of BPATC to its core values. The scope of the study is to find out whether the digitization initiatives are aligned with the core values and the extent of their contribution to the core values. For conducting this research, a combination of data sources has been used for the research. Primary data has been collected from the target population using both Quantitative and Qualitative techniques and Secondary data has been collected from relevant literature. A structured questionnaire has been developed by analyzing some research papers for conducting the quantitative analysis and for qualitative data key informant interviews (KIIs), in-depth interviews (IDIs), and focus group discussions (FGDs) have been conducted using semi-structured interviews. In this study, the total sample size for the quantitative survey was 300 of which 100 were faculty members and staff and 200 were course participants. Analyzing the results, it can be said that digitization has a highly positive or moderately positive contribution to the shared core values of BPATC. The conclusion of this study would aid the policymakers to find out the areas they need to focus on for the improvement of digitization initiatives.

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Table of Contents

1.	Introduction	1
1.1	Background	1
1.2	Problem Statement.....	2
1.3	Rationale of the Research.....	2
1.4	Research Objectives.....	2
1.5	Scope of the Research.....	3
2.	Literature Review.....	4
2.1	Organizational Values	4
2.2	Shared Values in BPATC.....	6
2.3	Digitization Initiatives in BPATC.....	7
2.4	Digitization and Organizational Values	10
3.	Research Methodology.....	13
3.1	Study Areas and Population.....	13
3.2	Sources of Data	13
3.3	Quantitative Method	13
3.3.1	Sample Size Calculation	14
3.3.2	Quantitative Sample Distribution	14
3.4	Qualitative Method.....	14
3.4.1	KII	15
3.4.2	IDI	15
3.4.3	FGD.....	15
3.4.4	Qualitative Sample Distribution.....	16
3.4.5	Qualitative Respondent selection.....	17
4.	Findings	18
4.1	Demographic Analysis of the Respondents	18
4.1.1	Type of Participants	18
4.1.2	Male-Female Ratio.....	18
4.2	Contribution of the Digital Initiatives to the Core Values of BPATC.....	19
4.2.1	Contribution of ERP to Core Values of BPATC	19
4.2.2	Contribution of Library Automation System to Core Values of BPATC.....	27
4.2.3	Contribution of Online Classroom System to Core Values of BPATC.....	35
4.2.4	Contribution of Clinic Management System to Core Values of BPATC.....	42
4.2.5	Contribution of Digital Attendance System to Core Values of BPATC.....	50
4.2.6	Contribution of E-Ticketing to Core Values of BPATC.....	58
4.3	Key Findings	66

5. Recommendation and Conclusion	69
5.1 Recommendations	69
5.2 Conclusion.....	72
References	75

List of Figures

Figure 1: Types of Organization Values.....	5
Figure 2: Percentage Distribution of the Types of Participants.....	18
Figure 3: Male-Female Ratio of the Participants	19
Figure 4: Percentage Distribution of Stakeholders' Awareness on ERP	20
Figure 5: ERP's Contribution Score Average to Discipline	20
Figure 6: Perception of ERP's Contribution to Discipline.....	22
Figure 7: ERP's Contribution Score Average to Integrity	22
Figure 8: Perception of ERP's Contribution to Integrity	23
Figure 9: ERP's Contribution Score Average to Innovation	24
Figure 10: Perception of ERP's Contribution to Innovation.....	24
Figure 11: ERP's Contribution Score Average to Learning for Result	25
Figure 12: Perception of ERP's Contribution to Learning for Result.....	26
Figure 13: ERP's Overall Contribution to Core Values	26
Figure 14: Percentage Distribution of Stakeholders' Awareness on Library Automation System.....	27
Figure 15: Library Automation System's Contribution Score Average to Discipline	28
Figure 16: Perception of Library Automation System's Contribution to Discipline.....	29
Figure 17: Library Automation System's Contribution Score Average to Integrity	30
Figure 18: Perception of Library Automation System's Contribution to Integrity.....	31
Figure 19: Library Automation System's Contribution Score Average to Innovation.....	32
Figure 20: Perception of Library Automation System's Contribution to Innovation.....	32
Figure 21: Library Automation System's Contribution Score Average to Learning for Result.....	33
Figure 22: Perception of Library Automation System's Contribution to Learning for Result..	34
Figure 23: Library Automation System's Overall Contribution to Core Values	34
Figure 24: Percentage Distribution of Stakeholders' Awareness on Online Classroom System	35
Figure 25: Online Classroom System's Contribution Score Average to Discipline.....	36
Figure 26: Perception of Online Classroom System's Contribution to Discipline.....	37
Figure 27: Online Classroom System's Contribution Score Average to Integrity	38
Figure 28: Perception of Online Classroom System's Contribution to Integrity.....	39
Figure 29: Online Classroom System's Contribution Score Average to Innovation.....	39
Figure 30: Perception of Online Classroom System's Contribution to Innovation	40
Figure 31: Online Classroom System's Contribution Score Average to Learning for Result....	40
Figure 32: Perception of Online Classroom System's Contribution to Learning for Result	41
Figure 33: Online Classroom System's Overall Contribution to Core Values	42
Figure 34: Percentage Distribution of Stakeholders' Awareness on Clinic Management System.....	43
Figure 35: Clinic Management System's Contribution Score Average to Discipline.....	44
Figure 36: Perception of Clinic Management System's Contribution to Discipline	45
Figure 37: Clinic Management System's Contribution Score Average to Integrity	46
Figure 38: Perception of Clinic Management System's Contribution to Integrity.....	46
Figure 39: Clinic Management System's Contribution Score Average to Innovation.....	47
Figure 40: Perception of Clinic Management System's Contribution to Innovation	48
Figure 41: Clinic Management System's Contribution Score Average to Learning for Result.....	48
Figure 42: Perception of Clinic Management System's Contribution to Learning for Result ..	49
Figure 43: Clinic Management System's Overall Contribution to Core Values.....	50

Figure 44: Percentage Distribution of Stakeholders' Awareness on Digital Attendance System	51
Figure 45: Digital Attendance System's Contribution Score Average to Discipline	51
Figure 46: Perception of Digital Attendance System's Contribution to Discipline	52
Figure 47: Digital Attendance System's Contribution Score Average to Integrity.....	53
Figure 48: Perception of Digital Attendance System's Contribution to Integrity	54
Figure 49: Digital Attendance System's Contribution Score Average to Innovation	54
Figure 50: Perception of Digital Attendance System's Contribution to Innovation	55
Figure 51: Digital Attendance System's Contribution Score Average to Learning for Result ..	56
Figure 52: Perception of Digital Attendance System's Contribution to Learning for Result ...	57
Figure 53: Digital Attendance System's Contribution to Core Values	58
Figure 54: Percentage Distribution of Stakeholders' Awareness on E-Ticketing System	58
Figure 55: E-Ticketing System's Contribution Score Average to Discipline	59
Figure 56: Perception of E-Ticketing System's Contribution to Discipline.....	60
Figure 57: E-Ticketing System's Contribution Score Average to Integrity	61
Figure 58: Perception of E-Ticketing System's Contribution to Integrity	62
Figure 59: E-Ticketing System's Contribution Score Average to Innovation	62
Figure 60: Perception of E-Ticketing System's Contribution to Innovation.....	63
Figure 61: E-Ticketing System's Contribution Score Average to Learning for Result	64
Figure 62: Perception of E-Ticketing System's Contribution to Learning for Result.....	65
Figure 63: E-Ticketing System's Overall Contribution to Core Values	66

List of Tables

Table 1: Quantitative Sample Distribution	14
Table 2: Qualitative Sample Distribution	16
Table 3: Recommendation Matrix	69

1. Introduction

1.1 Background

Bangladesh Public Administration Training Centre (BPATC) is the apex training Centre in the country to provide training to the civil service officers of government, non-government and autonomous organizations. BPATC has taken many digitization initiatives with the intent to make the training facility modern, user-friendly, and state-of-the-art. Faculties, staff, and participants of the courses are frequently using these digital platforms. Those who are not motivated or capable of using digital platforms are encouraged by BPATC to use the platforms.

The spirit of liberation war, fundamental principles of state policy, and patriotism are in the Centre of all the activities of BPATC and the Centre always thrives to infuse these spirits among the participants and its employees. To ensure that, BPATC maintains seven core values in all its operations. They are:

- Discipline
- Integrity
- Inclusiveness
- Professionalism
- Innovation
- Team Spirit
- Learning for Results

The contribution of the digitization initiatives to its core values has not been studied yet. A wide range of literature is very optimistic about digitization throughout the world (Karim et al., 2011; Rahman, 2016; Roztocky and Weistroffer, 2011; Sey, 2015; Zunguze, 2007). However, digital optimism has been questioned by many researchers (Davis, 2011; Harris, 2016; Ullah, 2016a, 2016b). Toyama (2011) noted both the arguments from these two groups are only partially true; digitization can have a substantial and evident impact in some cases. However, the impacts were not always guaranteed.

1.2 Problem Statement

BPATC has implemented a lot of digitization initiatives to improve its working culture and environment. To date, no study has been carried out to measure the contribution and alignment of these initiatives to the core values of this centre. The current study was focused to identify the extent to which digitization initiatives of BPATC contribute to its core values.

1.3 Rationale of the Research

BPATC has taken a lot of initiatives to digitize its operation. These initiatives were taken based on the decisions of meetings and the expectations of the stakeholders. No need assessment study was conducted before taking the initiatives. That is why, it is not well documented and studied whether the digitization initiatives of BPATC are aligned to its core values. As no need assessment study was conducted before initiating the digitization platforms, it is necessary to find out whether the digitization initiatives are aligned with the core values and to what extent they contribute.

1.4 Research Objectives

Broad Objective

To determine the extent of contribution of digitization initiatives of BPATC to its core values

Specific Objectives

- To prepare a list of digitization initiative of BPATC
- To determine whether the digitization initiatives in BPATC are aligned to its core values
- To find out which digitization initiative of BPATC contributes to which core value
- To find out the degree of contribution of the digitization initiatives to maintain the core values.
- To recommend ways to improve the digitization initiatives

1.5 Scope of the Research

This research did not evaluate the performance of the digitization initiatives. Rather, this research found out whether the digitization initiatives are aligned with the core values and the extent of their contribution to the core values. Any performance of the digitization initiatives which is not contributing to the core values was out of the scope of the study.

2. Literature Review

2.1 Organizational Values

According to Lešnik (2008), organizational values are a much more tangible concept than it seems though many researchers theorize it as a 'soft' concept. An organization has its own value system just like every human community (Kenny, 1994). Andolšek (1995) tried to establish a relationship between individual values and organizational values and she concluded that Individual values form organizational culture since organizational values are one of the determinants of organizational culture. She also proved that organizational values grow from individual values. Pfeiffer and others (1985) also confirm that organizational value creation is the process of establishing the philosophy of the organization that is embedded in the organization's culture. Simmerly (1987) extracted similar findings from his research and agreed that organizational values grow from the way of communication, mode of conduct, and decision-making styles and these organizational values evolve from the organizational cultures.

According to Svetlik (2004), to establish a strong base for the development of an organization, management should push the organizational values into the employees for inspiring employees with creative energy toward the desired goal. Cingula (1992) defined organizational values as the perception of the employees about what is good for an organization, current needed action within the organization, and future action of the employees. From his research, Cingula (1992) put emphasis on the mission and strategic goals of the organization to better describe the values of the organization.

Based on the findings from many behavioural scientists it can be mentioned that organizational values are formed from the set of individual values of the managers and the first step of discovering the organizational values is to find out the personal values of the members of the organization. Collins (1996) said that organizational values could not be seen as 'set' rather they can be discovered because organizational values could be revealed from the individual behaviour of the managers. Bell (2007) defined organizational values as a set of acceptable or expected norms or bounds of behaviour for the individual members of an organization.

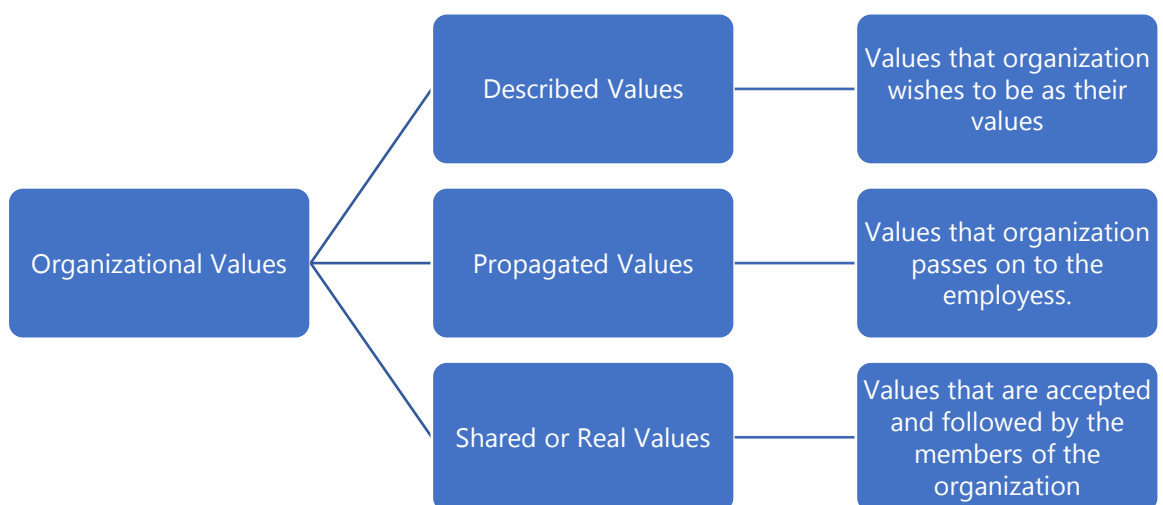
By scrutinizing previous research findings, Titov (2017) proposed that organizational values can be divided into three groups - described, propagated, and real (shared) values that are mutually hierarchically bound.

Described values are the values that an organization desires to see within the organization and the organization expects its employees to have these values without concentrating on their propagation or implementing these values in everyday practices.

Propagated values can be defined as the values the organization endeavours to communicate with the employees and strive to implement in the day-to-day actions of the organization. Organizations put some rewards for the presence of the values within the employees and management defines the importance of the values to the employees.

Real or shared values are the values used in the real work and decision-making process. Organizations first introduce the values to employees by describing them and after describing them, the organization strives to implement or make the employees accustomed to the values in day-to-day behaviour. The employees accept some or most of the values and they exert some particular type of behaviour to express those values. The values that have been accepted by the employees can be defined as shared or real values.

Figure 1: Types of Organization Values



2.2 Shared Values in BPATC

Bangladesh Public Administration Training has seven organizational values i.e. discipline, integrity, inclusiveness, team-sprit, professionalism, innovation, and learning for results. These can be referred to as described values. Two focus group discussions have been conducted with faculties and staff to identify the shared values in BPATC. According to the opinion of the participants of FGDs discipline, integrity, innovation, and learning for results are the shared values that are followed by all the members of BPATC during carrying out day-to-day activities. Discipline as a value is patronized by BPATC and strictly followed by the participants, faculties, and employees. All the faculties and employees work with honesty, integrity, and utmost dedication to achieve the vision and mission of the organization. According to participants of two FGDs, BPATC always strives for innovation so that it can inspire civil servants to be creative in the way of delivering service to the citizen by reducing Time-Visit-Cost for the respected service. As an apex training institution, it provides training to all its faculties and employees and always inspires its employees to learn for results. All these shared values are written on BPATC's website and developed by organizational leadership and adopted by all the members of the organization. We did not include inclusiveness, professionalism, and team spirit as shared values as the respondents opine that exercise these values depend on the personal characteristics of employees and staff and these values can be considered as propagated values of BPATC.

Learning for results is a core value of BPATC. Data collected from KIIs and FGDs with the faculties and staff represent that 'learning for result' is practiced in all the activities of BPATC and can also be considered as a shared value. Learning for result can be defined as a process of learning by demonstrating and practicing which provides result-oriented practical knowledge. It can also be termed result-based learning or result-oriented learning. As a training institute, BPATC always tries to incorporate new technological advances (cisco/ Webex/Zoom/Kahoot), management theories, and practices (NPM, TQM, APA, NIS, innovation, GRS, Citizen charter, etc) in its day-to-day activities and training programs to facilitate world-class training standard. BPATC always try to provide its own faculty, staff, and participant with updated knowledge and experiences. As an apex training institute, it always values result-based learning. BPATC always tries to innovate and replicate best practices in its compound so that the

participant can get acquainted with these systems to achieve the competencies to replicate these best practices in their workplaces.

2.3 Digitization Initiatives in BPATC

The digitization procedure of BPATC started formally in 2014. A project titled ‘Digitization of BPATC Project’ was introduced in 2014. The project managed to grab the attention and interest of the BPATC officials as the Honourable Prime Minister inaugurated the project. This project established the preliminary ICT infrastructure which sparked digitization in BPATC. This project introduced the wireless network system, computer laboratory, and laptops for all participants in BPATC. From the qualitative data, we found the following digitization initiatives in BPATC:

- Enterprise Resource Planning (ERP) System
- Library Automation System
- Online Classroom System
- Clinic Management System
- Digital Attendance System
- E-Ticketing System

ERP

BPATC has introduced an Enterprise Resource Planning System (ERP). It has eight major functions:

- Performance Management Information System (PMIS)
- Computerized Training Management System (CTMS)
- Transport Management System (TMS)
- Store Management System (SMS)
- Accounts & Financial Management System (A&FMS)
- Dormitory Management System (DMS)
- Computer Equipment Management System (CEMS)

All the faculties, staff, and participants have to use this ERP. The faculties and staff of BPATC have to use it for their regular office activities. The personal information of all the faculties and staff is managed through ERP. Vehicle requisition, store item

requisition, salary bill submission, computer accessories requisition, etc. are also done through ERP. The course management is done through ERP. The class schedule is prepared and distributed through the system. Participants have to submit their assignments in the system. All the course materials are stored in the system. That is why, all the core stakeholders except Grade 17 to Grade 20 employees of BPATC are ERP users.

ERP has its own challenges as well. No need assessment was conducted before introducing the system because the top management instructed us to develop the platform and the developers had a very limited time. Now, the demand for online management is growing and changing day by day. Keeping up with the ever-growing demand for online management modules is getting very difficult.

Library Automation System

BPATC's library automation system includes membership management, a book issue and submission system, book cataloging, online search system, among others. RFID tags have been incorporated into more than eighty thousand books. Users can issue books from this system. The system sends them a reminder to submit the books. If the books are not submitted on time, the system keeps sending the issuers reminders. Each user of the library facility has a card. The system issues books against the card.

Though the library automation system is fully functional, and the users can get the benefit of the automated system, it has some maintenance-related challenges. Firstly, the license of the system is not renewed periodically. So, if anything happens, the Centre will not be able to claim the benefits of the licensed system. Secondly, the RFID printer is not being used. RFID printer prints RFID for every book, journal, and other item in the library. Library personnel and users find and locate these items through RFID. As the printer is not being used, any required change for already printed RFID is not possible. At the same time, new entries and new tagging are not feasible.

Online Classroom System

BPATC arranges classroom sessions mainly through two platforms, Zoom, and Cisco Webex. These online platforms became popular in BPATC during the Covid 19 pandemic. BPATC was forced to switch its sessions from a physical presence to an online presence. The Centre started online classroom platforms with the participants of

different courses with officers. As the pandemic prolonged, the staff also became familiar with the online platforms and even staff training began online. In some cases, all the sessions in a course were conducted online.

Even before the pandemic and the introduction of online platforms like Zoom and Cisco Webex, BPATC's ERP system had some features of an online classroom system. Though the physical presence of the participants and speaker was an absolute necessity in ERP, classroom materials and assignment submissions were online through ERP. However, after the introduction of Zoom and Cisco Webex, the online presence system through these platforms became known as an online classroom system and the other features like session material distribution and assignment submission became secondary. Now, almost all the stakeholders in BPATC perceive Zoom and Cisco Webex as online classroom systems. In addition, they do not consider features that a real online classroom system has but Zoom and Cisco Webex do not, as features of an online classroom system.

Clinic Management System

The clinic management system in BPATC helps to manage the clinic system. The service recipients have to be registered to this system. This system tracks all the medicines issued by the clinic to the recipients. There is a kiosk in front of the clinic. The service recipients can pay for the basic diagnostics available in the clinic from this kiosk.

The main problem with this system is it is not developed in a web-based language. That is why the kiosk in front of the clinic is the only platform that the recipients can use. In addition to that, as it is not developed in a web-based language, it cannot be incorporated into the ERP or any other web-based system. Furthermore, the prescription made by physicians is sent electronically to the compounder for delivery of medicine. If the stock matches the brand name of the prescribed medicine it doesn't require manual entry. When the stock does not match the prescribed brand name and regular medicine is asked without a prescription it needs a manual entry. It is found that no medicine is delivered without entry to the system.

Digital Attendance System

The top management of BPATC has introduced a digital attendance system for faculties and staff. The previous system involved signing on the attendance register every day. There was no record of the exit time. The digital attendance system records both entry and exit times. It has two types of inputs, fingerprint and identity card. The hardware can read both fingerprints and the chip in the identity card. Fingerprint inputs were widely used before the pandemic. The top management instructed us to avoid fingerprints and use identity cards when the pandemic started.

Implementing the digital attendance system in the Centre was not very easy. Though the faculties and staff use it regularly, in many cases, they use it only for entry. They often forget to use it for the exit. There is another problem that hinders the smooth implementation of the system though it is not a technical issue. When the pandemic started, a few of the users started taking advantage of not using fingerprints. They gave their identity cards to their colleagues to give attendance on their behalf. The number of such users is perceived to be very insignificant. However, the issue was there.

E-Ticketing System

E-Ticketing System is a digital system of payment introduced in BPATC to reduce the hassles of petty cash transactions. Cash transactions incur in BPATC for bus/vehicle fare, diagnostic payments, payment for agricultural goods produced in BPATC, and so on. The system uses a card that is issued to each faculty and staff. They can top it up when more balance is required.

In the beginning, there was resistance from the drivers and bus helpers. It was a twofold resistance. Firstly, drivers and helpers are not digitally literate enough to be introduced to this system with ease. Secondly, petty cash transactions offered opportunities to take some money from the transactions which the system restricts. Apart from the resistance, the system has its own drawbacks. The users have to visit the relevant section physically to top up the balance. In addition to that the hardware used in this system often malfunctions.

[2.4 Digitization and Organizational Values](#)

A doctoral thesis titled “The Relation between Digital Technology and Values Thinking through Multiple Technologies” revealed an enhanced understanding of the

relationship between digitization and organizational values by using empirical materials from the Swedish government. The study reached three conclusions by performing a narrative analysis of the result of five papers with respect to the research question “How can we understand the relation between digital technology and values?”

Conclusion 1 revealed that one way of understanding the relationship between digital technology and values is by convergence. Two narratives are presented around this convergence: digital technology as a flexible, neutral tool and as an autonomous, transformative force: a machine. Although subject to several tensions, ambiguity, level of decentralization, and centralization technology enables democracy and efficiency and serves and demands adaptation. The narrative of the machine also represents calls for adaptation by both individuals and society. In the public sector, such adaptation includes an uncertain transformation of values relating to professionalism.

Conclusion 2 stated that another way of understanding the relationship is to recognize digital technology as a paradigm through the study of norms. The narrative that is generated within this paradigm builds on the notion of a digital society for all. If norms like the human condition, humanities are ignored or missed the only outcome in technology is only a change in the terminology that is associated with the slightly altered technology.

Conclusion 3 represents that a third way of understanding the relationship between digital technology and values is by the shift between value congruence and value divergence, which constitutes two contrasting narratives. In a state of value congruence, digital technology is related to technological and economic progress and is perceived as enabler for all values. The divergent narrative tells that values can be realized if society adapts. The interplay between these narratives affects the way we perceive value realization.

The study also mentioned that in a state of value congruence technology enables the realization of values meanwhile values justify the expansion of technology (Sundberg, 2009). The values spoken in the technological society are simply there to justify what is, or, they are generalities without consequence; or technical progress realizes them automatically as a matter of course (EIIul, 1962).

The motivation of the doctoral thesis of Leif Sundberg was a) the need to develop the theoretical basis of digital government, b) a missing empirical link between narratives

of digital technology, and research on values, and c) a societal need to examine the legitimacy of vast expenditure on digital technology, with uncertain value. The main contribution of this study was a) establishing an enhanced theoretical understanding b) by generating a theoretical understanding a link between digital technology and values can be empirically established c) the societal need can be fulfilled by increasing democratization of norms that influences policies for digital technology. The research also recommended further research to explore the expectation for these technologies in the public sector and other areas and on digital technology in the public sector policy enactment, which conforms how daily practices conform to policies (Sundberg,2009).

3. Research Methodology

This research is exploratory in nature. Both qualitative and quantitative data were used in this research. For qualitative data collection researchers used KII, IDI, and FGDs as data collection techniques. On the other hand, survey method was followed for quantitative data collection.

3.1 Study Areas and Population

All the users of BPATC digitization initiatives were the study population. This includes:

- Existing Course Participants
- Faculty Members and Staff

The data collection was conducted in BPATC, Savar, Dhaka.

3.2 Sources of Data

A **combination of data sources** was used for the research. Therefore, to conduct this particular research, the data sources were:

1. **Primary data** from the **target population** using both **Quantitative** and **Qualitative** techniques.
2. **Secondary data** from relevant literature

To collect the required data/information following techniques were adopted with specific target respondents for each of the target groups:

1. **Quantitative data** – Quantitative data was collected by surveys using structured questionnaire
2. **Qualitative data** – Key Informant Interviews (KIIs), In-depth Interviews (IDIs), and Focus Group Discussions (FGDs) were conducted to collect qualitative data using semi-structured interviews.

3.3 Quantitative Method

For quantitative sampling-related methods, surveys were conducted using a structured questionnaire.

3.3.1 Sample Size Calculation

The questionnaire survey was conducted among the participants, faculties, and staff of BPATC.

To have a representative sample the following formula is used to capture all the target indicators.

$$n = \frac{Z^2 pq}{e^2} \times Deff$$

p = Expected value of the indicator= 50%

q = (1- p)

e = Margin of error = 10%

Deff = Design effect =1

Z-score = 1.645 at standard of 90% confidence interval

Thus, keeping the assumptions mentioned above, the required sample size for the study was calculated to be 276 which is then rounded to **300**. Therefore, the total sample size for the quantitative survey was **300**.

3.3.2 Quantitative Sample Distribution

Following is the target population-wise sample distribution:

Table 1: Quantitative Sample Distribution

Respondents	Total
Participants from existing courses	200
Faculty members and staff	100
Total	300

3.4 Qualitative Method

Both quantitative and qualitative data are important to triangulate the findings derived from the study. Qualitative data provided such insights which helped further program design. Therefore, different qualitative techniques were utilized to collect data from

The responses from the qualitative discussion provided in-depth understanding of certain types of practices that may not be possible to elicit from closed-ended survey questions alone – so, qualitative interviews allowed us to probe deeper into survey responses. All qualitative discussions were analyzed to bring out key perceptions on the different aspects probed.

different kinds of stakeholders and target groups. For qualitative data, the following tools were used:

- Key Informants Interview (KII)
- In-depth Interview (IDI)
- Focus Group Discussions (FGDs)

3.4.1 KII

KIIs provided important information that was not easily captured in statistics or documents. Another important reason for selecting KIIs as one of the measures to collect qualitative data was that they aided in being familiar quickly with the study area and obtaining in-depth information within a short time. Avoiding the employment of a long time in data collection, especially while conducting the unstructured interview, and encouraging respondents to provide concrete information for the sake of the research was also possible through the KIIs. Key Informant Interviews (KIIs) were conducted with the following stakeholders:

- Member Directing Staff
- Course Advisor (Core Course)
- Director
- Course Director (Core Course)
- System Analyst/Assistant System Analyst
- Deputy Director (Finance)/ Assistant Director (Procurement)
- Programmer/ Assistant Programmer
- Course Coordinator (Core Course)

3.4.2 IDI

The IDIs were conducted using semi-structured guidelines with the following groups:

- Faculty members
- Participants from existing courses
- Staff

3.4.3 FGD

Focus group discussions were conducted to gather a wide variety of information across a larger number of target populations with breadth and depth. The groups were

composed of 8-10 participants. Focused questions were asked to the participants in order to encourage discussion and expression of differing opinions and points of view regarding their perception of the issue.

FGDs were conducted with:

- Faculty members
- Staff

3.4.4 Qualitative Sample Distribution

For the qualitative part, respondents were selected following a purposive sampling technique to collect data from relevant personnel. All the faculty and staff in BPATC are not directly involved with the implementation of the digitization initiatives. That is why, the personnel related to the implementation of digitization initiatives were interviewed purposively. The sample distribution for the qualitative approaches was as follows:

Table 2: Qualitative Sample Distribution

Techniques	Respondents/Areas	Total
KII	Director	1
	System Analyst/Assistant System Analyst	1
	Deputy Director (Finance)/ Assistant Director (Procurement)	1
	Programmer/ Assistant Programmer	2
	Course Coordinator (Core Course)	2
Total KII		7
IDI	Faculty members	1
	Participants from existing courses	1
	Staff	1
Total IDI		3
FGD	Faculty members	1
	Staff	1
Total FGD		2

3.4.5 Qualitative Respondent selection

Respondents/participants of IDIs, KIIs, and FGDs were selected based on their willingness to participate in this research and their availability. The purposive method was utilized in this study.

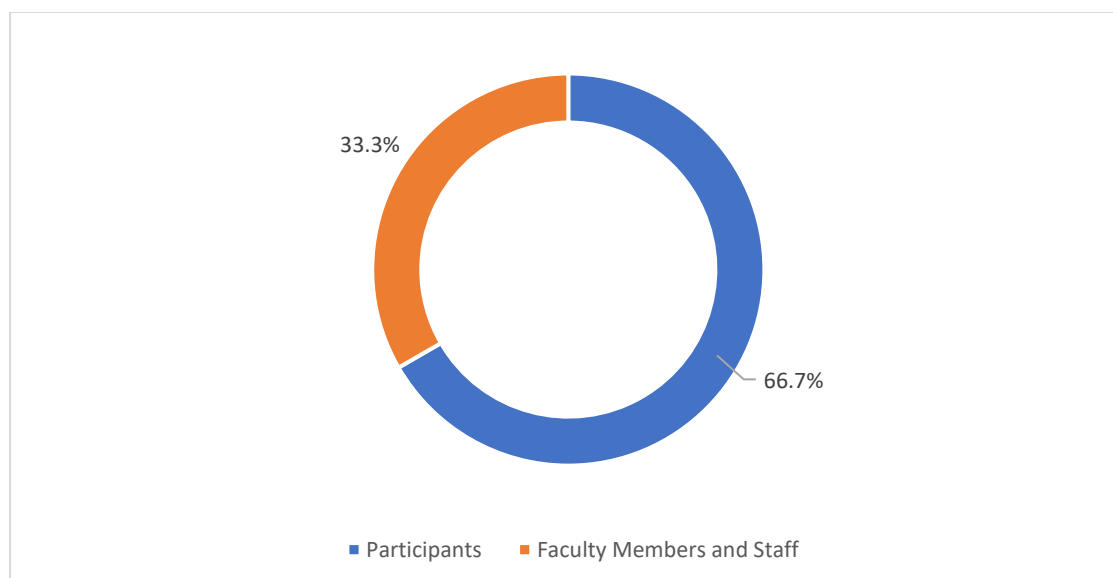
4. Findings

4.1 Demographic Analysis of the Respondents

4.1.1 Type of Participants

The graph states the type of respondents interviewed for gathering quantitative data for the study. A total of 300 respondents were interviewed and they were divided into two groups. Among them, 200 respondents were participants in training courses of BPATC which comprises two-third (66.7%) of total respondents, and the rest 100 respondents were from the faculties and other employees which comprise one-third of the total respondents. As BPATC is a training centre most of the beneficiaries are participants in different courses that's why the majority of the respondent was interviewed from participants.

Figure 2: Percentage Distribution of the Types of Participants

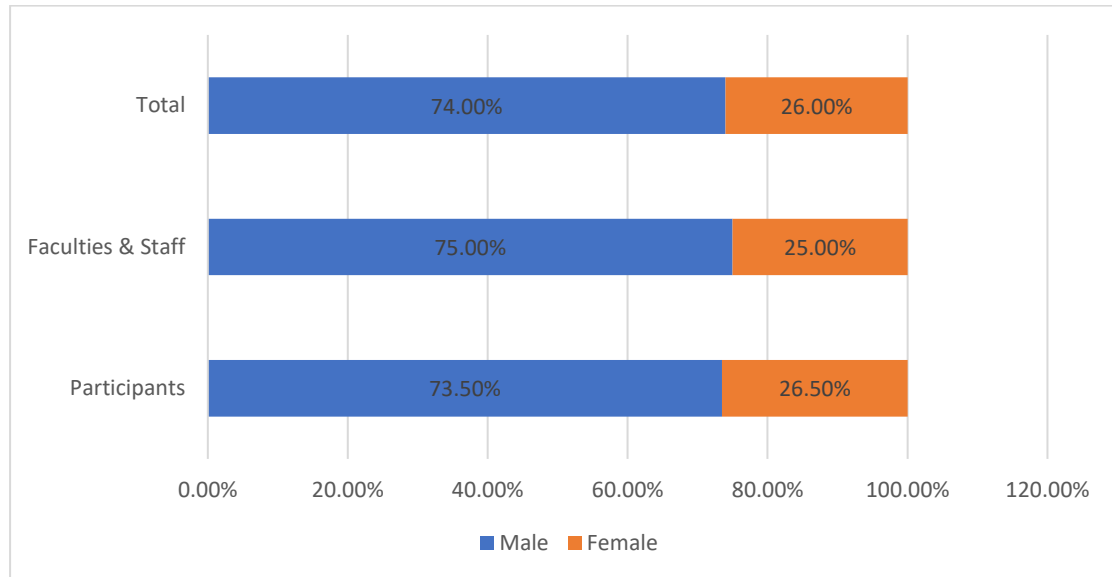


4.1.2 Male-Female Ratio

The pictorial representation demonstrates Male- female ratio of the respondents. It is stated before that the respondents were divided into two groups i.e. participants and faculties and staff. Among the participants' group majority of the respondents i.e. 73.5% respondents were male and 26.5% were female. On the other hand, the ratio of male respondents was threefold compared to the female respondent. There were 75% male and 25% female respondents among the faculty the staff group. In addition, the total

ratio of female respondents was only 26.5% of the total respondent and male respondents were 73.5% which comprises three-fourths of the total respondent.

Figure 3: Male-Female Ratio of the Participants



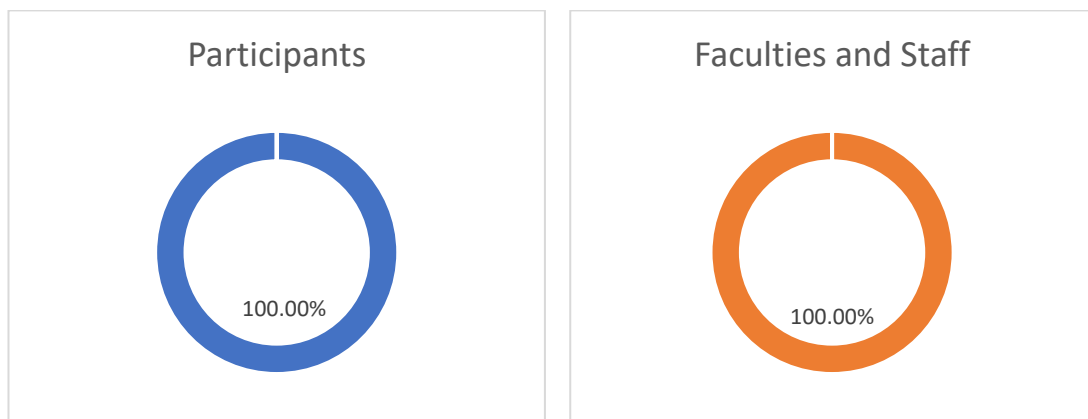
4.2 Contribution of the Digital Initiatives to the Core Values of BPATC

4.2.1 Contribution of ERP to Core Values of BPATC

4.2.1.1 Stakeholders' Awareness on ERP

The respondents were asked whether they know about Enterprise Resource Planning (ERP). Irrespective of the 300 respondents either from participants of training courses or from BPATC faculty members and staff, all of them knew about the ERP as it is an immensely used web application in BPATC. From the qualitative data, it was found that the reason behind knowing about this system by the participants is that they have to submit all of their assignments, reports, and research write-ups to the concerned Module Director through this system for plagiarism checking and final evaluation. Furthermore, they have to submit daily speaker evaluation reports using this system. In terms of faculties and staff, they have to accomplish daily office activities with regard to transportation, store, ICT, or most of the service rendered from the Service Section etc. using the ERP.

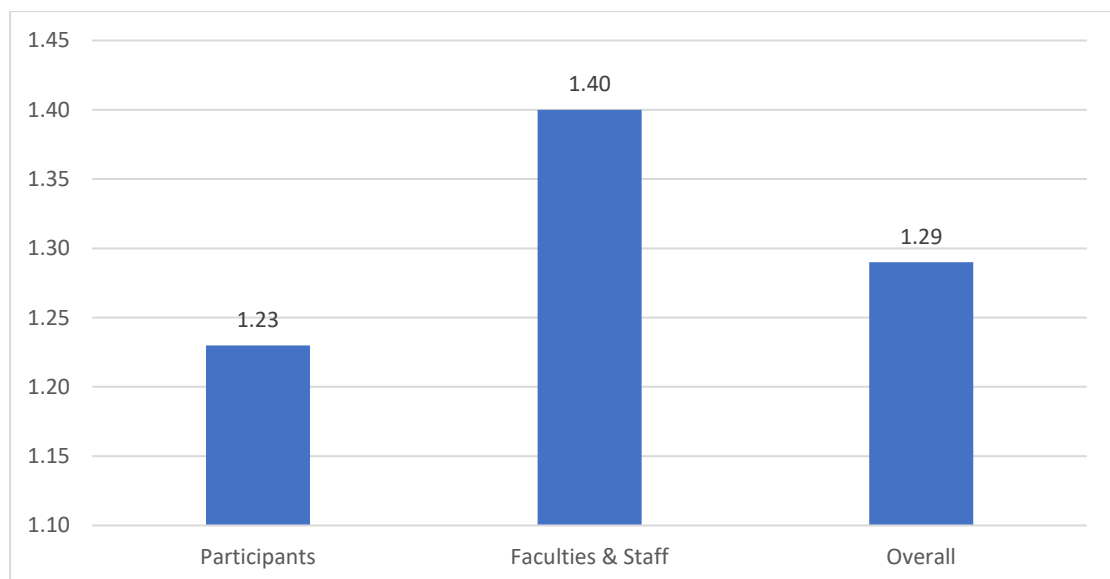
Figure 4: Percentage Distribution of Stakeholders' Awareness on ERP



4.2.1.2 ERP's Contribution to Discipline

The interviewees who are aware of certain digitization initiatives were asked to rate the degree of contribution by the digital initiatives to the core values of BPATC using a 5-point Likert Scale (Highly Negative Contribution= -2, Moderately Negative Contribution= -1, No Contribution= 0, Moderately Positive Contribution= 1, Highly Positive Contribution= 2). The scores are then averaged to understand their perception regarding the contribution of digital initiatives to the core values of BPATC.

Figure 5: ERP's Contribution Score Average to Discipline

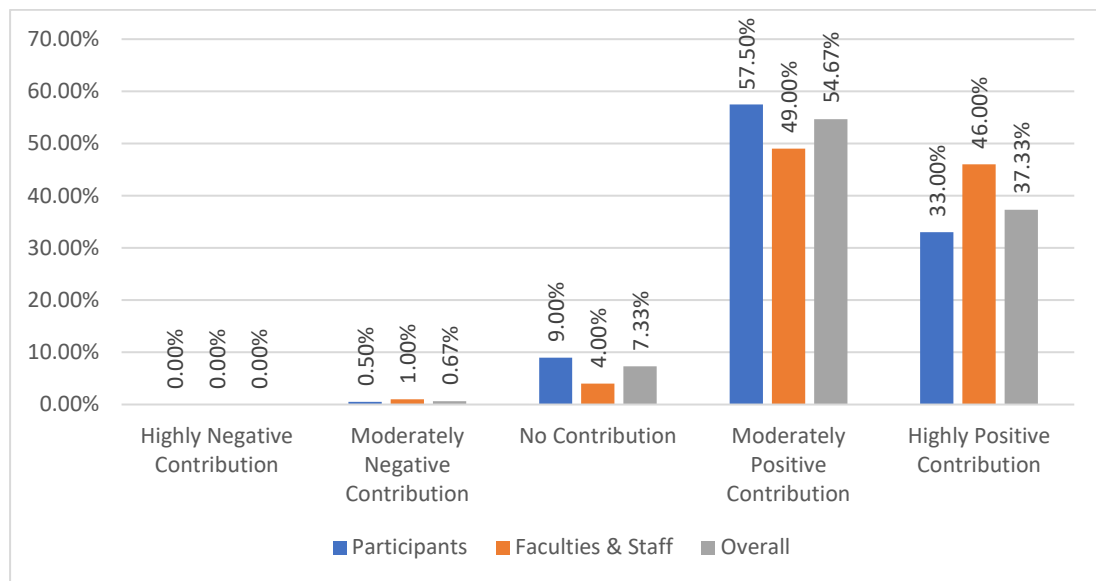


The above bar chart of ERP's contribution score average to discipline shows that both groups of respondents view the contribution of ERP to discipline positively. The

average is significant as it scores 1.29 on a scale ranging from -2 to +2. Moreover, the faculty and staff group is more positive as they show a high score average (1.40) in comparison to the participants' group (1.23).

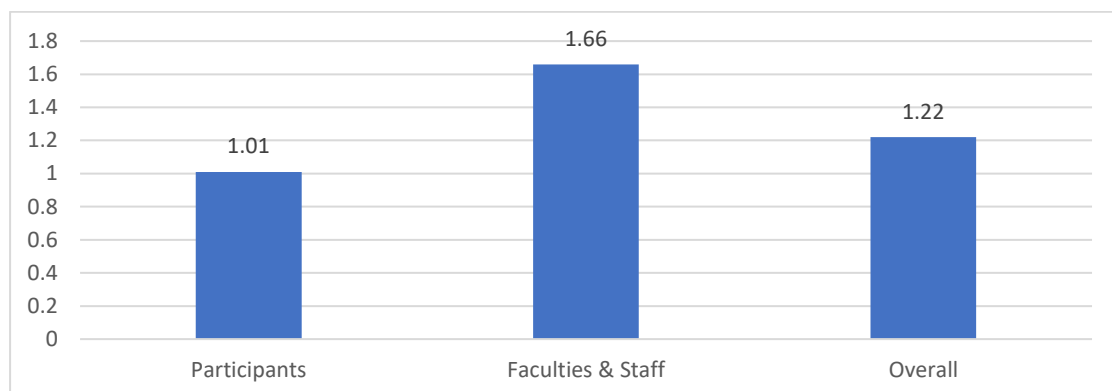
From the perception of ERP's contribution to the discipline graph, it can be inferred that none of the participants and faculty members has agreed to mention the highly negative contribution of ERP to discipline where a very insignificant number of respondents (about 0.67 respondents including participants, faculty & staff) perceived moderately negative contribution. 7.33 percent of respondents agreed that existing ERP does not have any impact on the discipline and among them, significant respondents are from the participant's group. The majority of the respondents (54.67 percent) posit that ERP has a moderately positive contribution to the discipline. Among the respondents, 57.50 percent of the participants and 49 percent of the faculty and staff have agreed upon this term of correlation. And finally, 37.33 percent of the respondents agreed that ERP has a strong positive contribution to the discipline. Among the faculty members and staff, 46 percent of the respondents agreed with this proposition. As the faculty members and staff are to use the ERP in their day-to-day activities frequently, they have accustomed to the system rigorously and so they have a better understanding of the usability of the ERP. Because of the usability, faculty members and staff mentioned that ERP has a highly positive correlation with discipline. For the same reason, the contribution score of ERP to discipline by the faculties and staff is higher (1.40) than that of the participants (1.23).

Figure 6: Perception of ERP's Contribution to Discipline



4.2.1.3 ERP's Contribution to Integrity

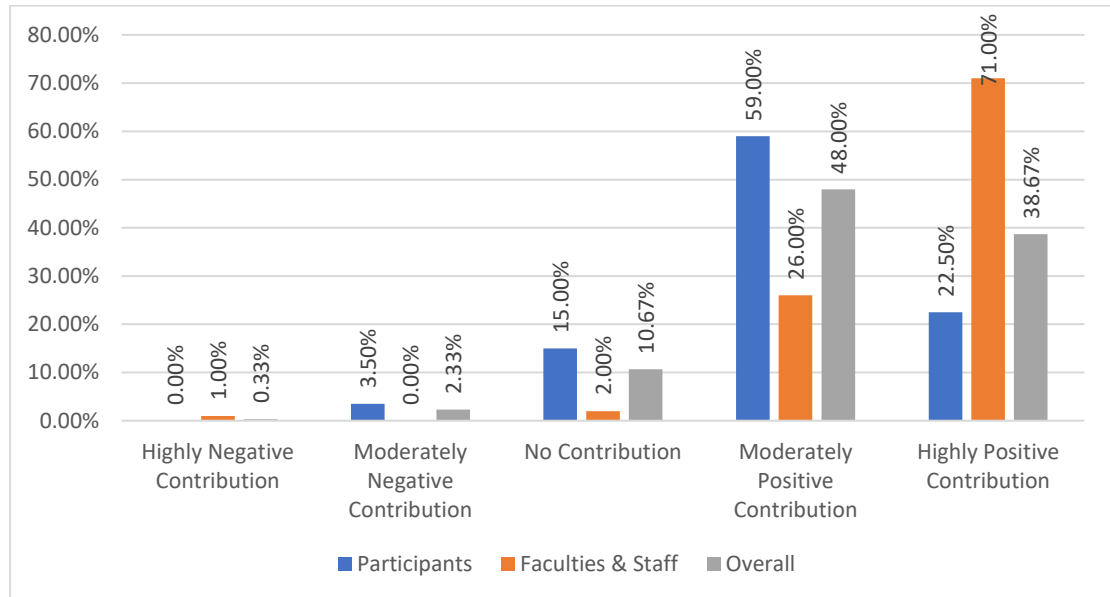
Figure 7: ERP's Contribution Score Average to Integrity



From the ERP's contribution integrity chart, it can be summarized that the highest portion of the respondents (about 48 percent) have agreed to the proposition that ERP have a moderately positive contribution to integrity. Among the participants, 59 percent of them have agreed that ERP has a moderately positive contribution. As participants have a limited view of the integrity confirmation of the BPATC, they tend to have a moderate impact on the initiative. But among the faculty members and staff, as they have a broader view of the ERP initiative in each and every area, 71 percent of them posit that the correlation between ERP and integrity has significant value. 15 percent of the participants mentioned that ERP does not have any contribution to integrity and 3.5 percent of the participants said that ERP even has a moderately negative

contribution to integrity. And finally, 1 percent of the faculty members and staff agreed that ERP has a highly negative contribution to integrity.

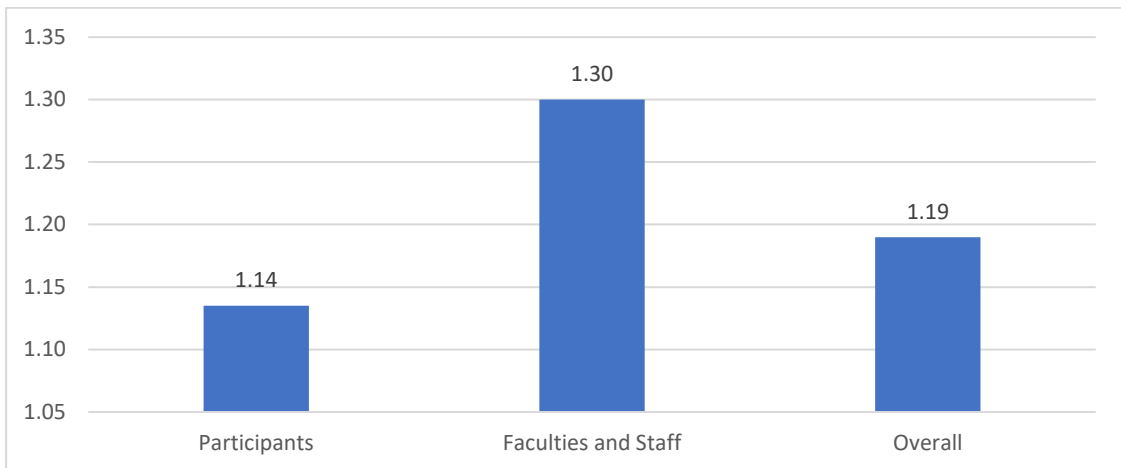
Figure 8: Perception of ERP’s Contribution to Integrity



4.2.1.4 ERP’s Contribution to Innovation

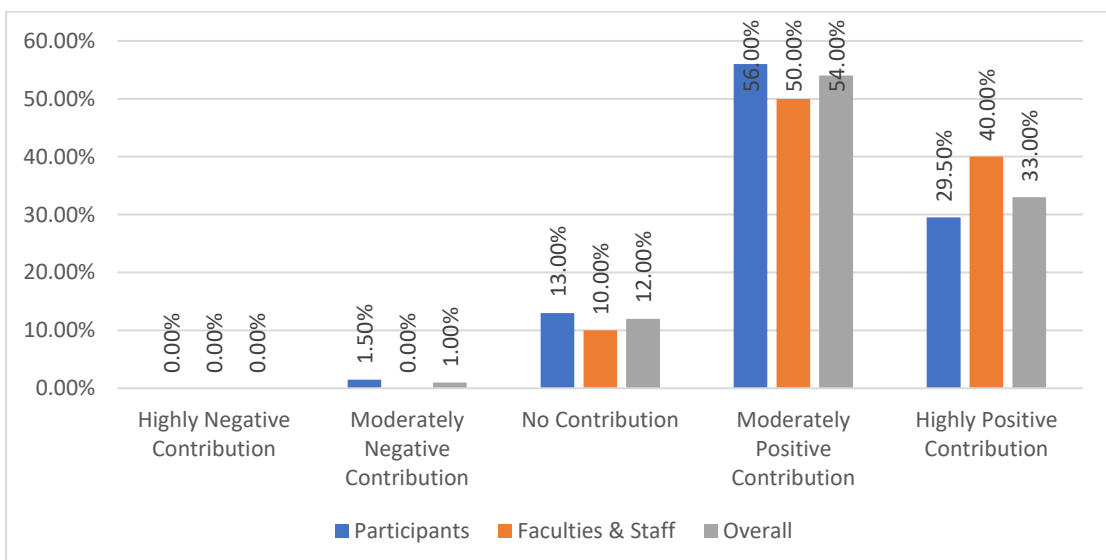
The interviewees were asked about the contribution of ERP to innovation. No one among the 300 interviewees thinks that ERP has a Highly Negative Contribution to innovation. Only 1% of the participants think that ERP has a Moderately Negative Contribution to innovation and no faculties and staff think that it has a negative contribution to innovation. Only 12% of the total interviewee told that ERP has no contribution to innovation. 56% of participants told that ERP has a Moderately Positive Contribution and 29.50% told that ERP has a Highly Positive Contribution to innovation. According to the faculties and staff, ERP’s contribution is higher than what the participants have perceived. Half of the faculties and staff told that it has a Moderately Positive Contribution and 40% of them told that it has a Highly Positive Contribution to discipline. That is why the contribution score of ERP to innovation by the faculties and staff (1.30) is higher than that of the participants (1.14).

Figure 9: ERP's Contribution Score Average to Innovation



The faculties and staff of BPATC use ERP for their routine work. As they use more modules of ERP than the participants, they can understand the contribution of ERP to the discipline of BPATC better. According to the KII conducted with the information technology personnel, the demand for online management systems is increasing day by day. BPATC has established an online platform that made the stakeholders believe in the online management system. The stakeholders have proposed many innovative ideas to be incorporated into the ERP system throughout the operating tenure of ERP. The respondents of KII believe that many more innovative ideas will be generated by the stakeholders of BPATC only because they are used to ERP and they have confidence that online management system or digitization of processes works in BPATC.

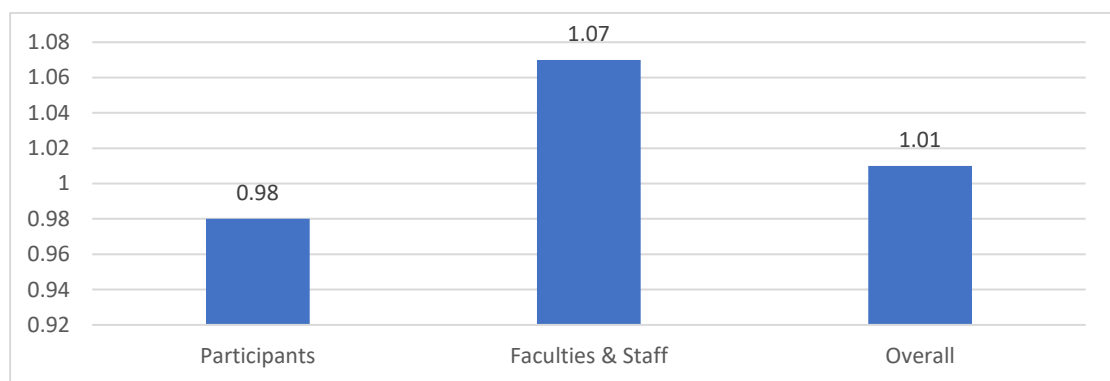
Figure 10: Perception of ERP's Contribution to Innovation



4.2.1.5 ERP's Contribution to Learning for Result

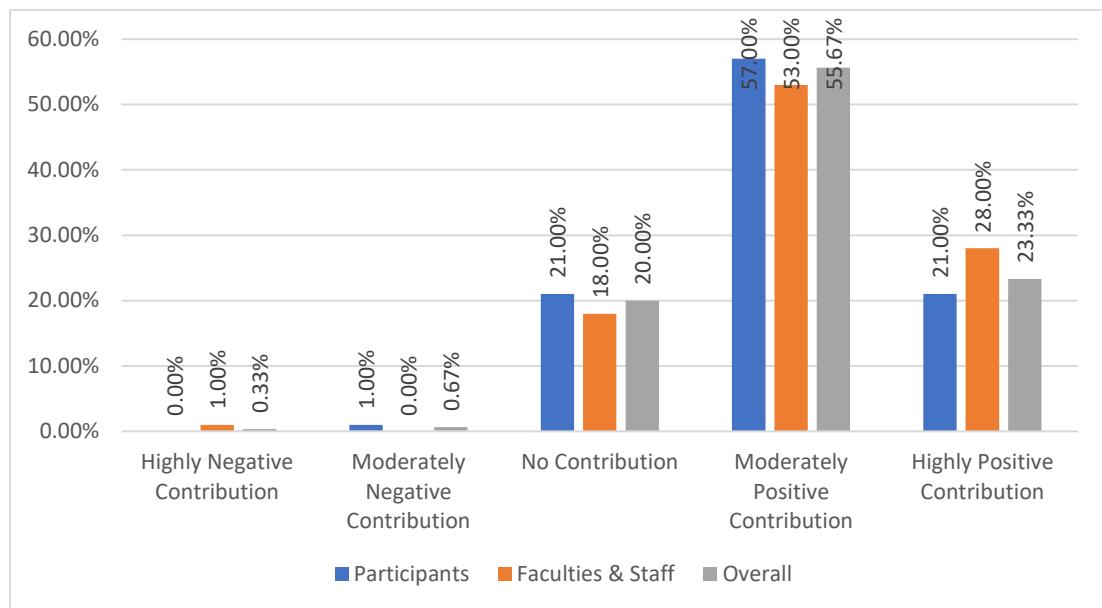
The interviewees' opinion regarding the degree of contribution of digital initiatives to the value of learning for result of BPATC is moderately positive. Data collected from participants of core courses shows that the contribution score of ERP on learning for result is 0.98 where the score is 1.07 according to the opinion of faculties and staff. It suggests that the opinion of faculties and staff regarding the contribution of the ERP system on learning for result is quite more positive in comparison to the opinion of participants of core courses.

Figure 11: ERP's Contribution Score Average to Learning for Result



The following bar chart describes that the opinion regarding ERP having highly negative contribution and moderately negative contribution is very insignificant which comprises one percent of total respondents altogether. While 20 percent of the total participant including 21 percent of the participants and 18 percent of faculties and staff opined that there is no contribution of ERP to learning for result of BPATC. From the graph, it can be inferred that more than half of the total respondents (55%) of the participants and faculties and staff agreed to mention the moderately positive contribution of ERP to Learning for result. Moreover, 23.33 percent of respondents perceived a highly positive contribution of ERP to learning for result. As Faculties and staff are more oriented with ERP system they stated a highly positive correlation between ERP system and learning for result of BPATC.

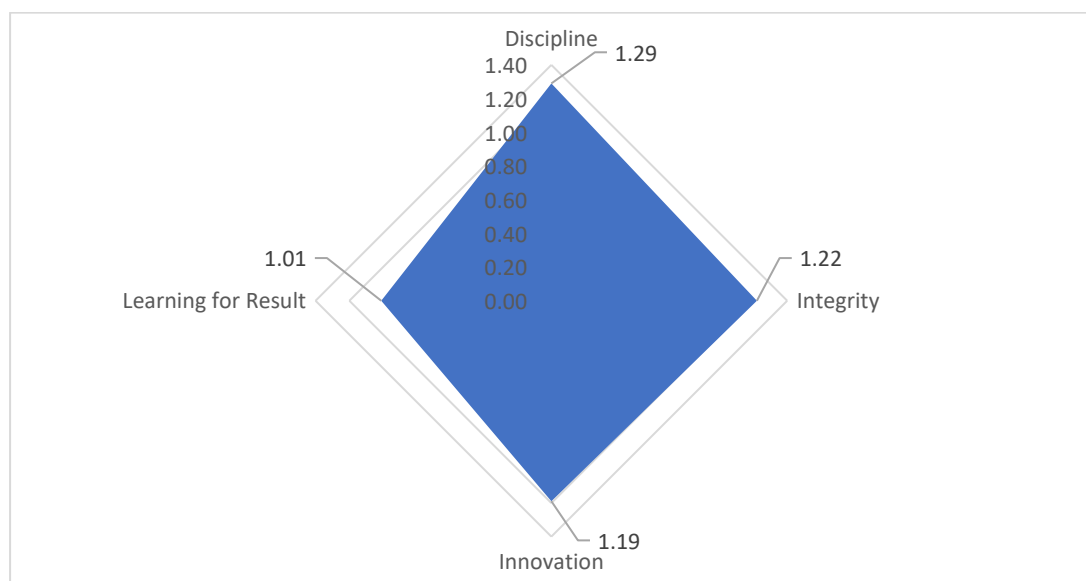
Figure 12: Perception of ERP's Contribution to Learning for Result



4.2.1.6 ERP's Overall Contribution to Core Values of BPATC

ERP has the highest contribution to the discipline (1.29) among the four core values. Integrity (1.22) and Innovation (1.19) has similar contribution score. Learning for Result has the lowest contribution score (1.01). This result is quite in line with the purpose and usage of ERP. The system is widely used by the faculties and staff for their routine activities. Though there is an academic part of ERP as well, the stakeholders do not think that it has as much of a contribution to learning culture as it has to the other core values.

Figure 13: ERP's Overall Contribution to Core Values



4.2.2 Contribution of Library Automation System to Core Values of BPATC

4.2.2.1 Stakeholders' Awareness on Library Automation System

The respondents were asked whether they know about the library automation system. Among the 200 course participants, 89.50% knew about the library automation system. The lack of awareness of 10.50% of the participants about the library automation system indicates that either they are not interested at all in using the library system or the library system still provides facilities manually. The KII respondents said that this unawareness is a result of both the above reasons. Some of the participants complete their courses without issuing a single book from the library. On the other hand, the library staff still provides services without using the automated system as well.

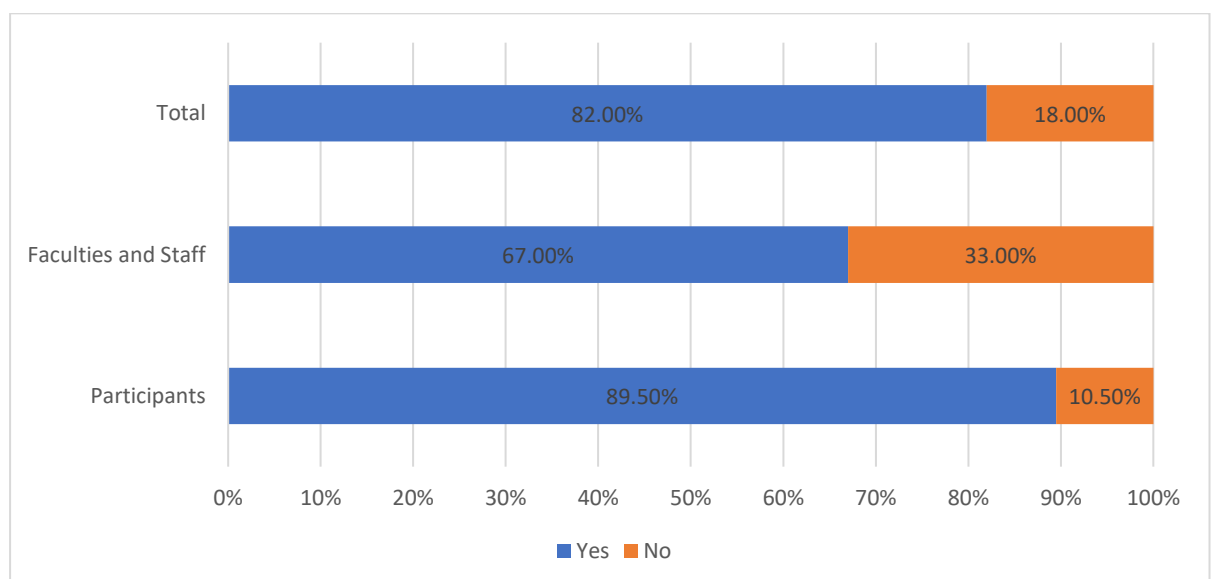
Among the 100 faculties and staff interviewed, 67% knew about the library automation system. The reason behind almost one-third of

“What will we do in the library? Even the faculties do not go there.”

-FGD Participant, FGD with BPATC Staff

the faculties and staff not knowing about the library automation system is the lack of usage of library facilities by the staff of BPATC. According to the FGD conducted with the staff, many of them hardly use the library facilities. Even the faculties nowadays are not interested to use library facilities. Out of the total 300 interviewees, 82% are aware of the existence of an automated system in the BPATC library.

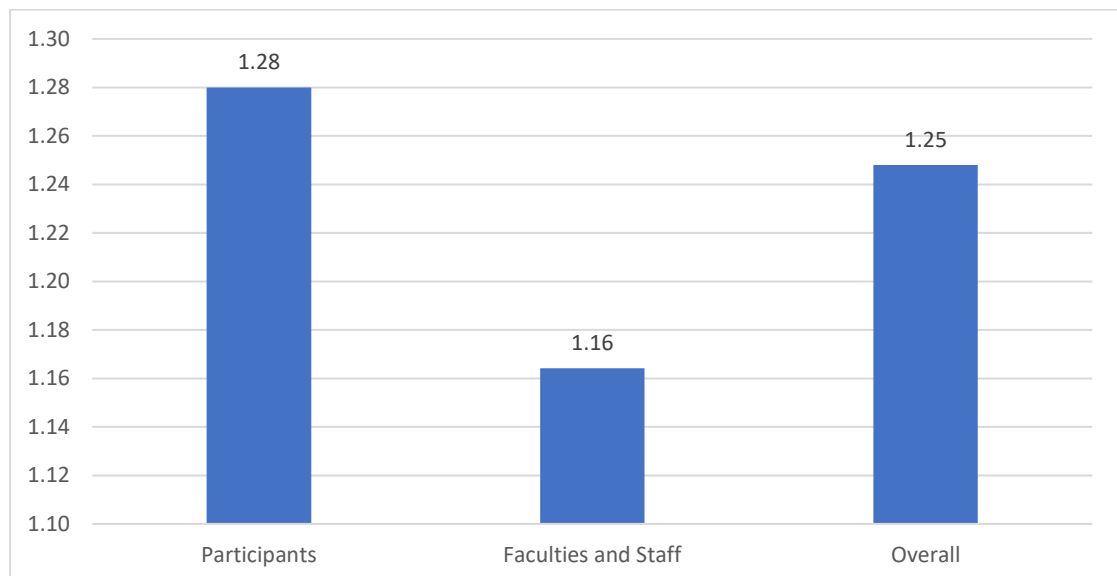
Figure 14: Percentage Distribution of Stakeholders' Awareness on Library Automation System



4.2.2.2 Library Automation System's Contribution to Discipline

According to the participants of core courses, the contribution score of the library automation system discipline is 1.28. According to the faculties and staff, the contribution score is 1.16. The KII with Course Management Team member revealed that the participants sometimes have mandatory library sessions. In addition to that more percentage of participants are aware of the automation system than that of the faculties and staff. These two facts indicate that the participants use the BPATC library facilities more frequently than the faculties and staff. That is why the participants think more positively about the contribution of the library automation system to discipline in BPATC. On a scale from -2 to +2, the overall contribution score of the library automation system to the discipline in BPATC is 1.25.

Figure 15: Library Automation System's Contribution Score Average to Discipline



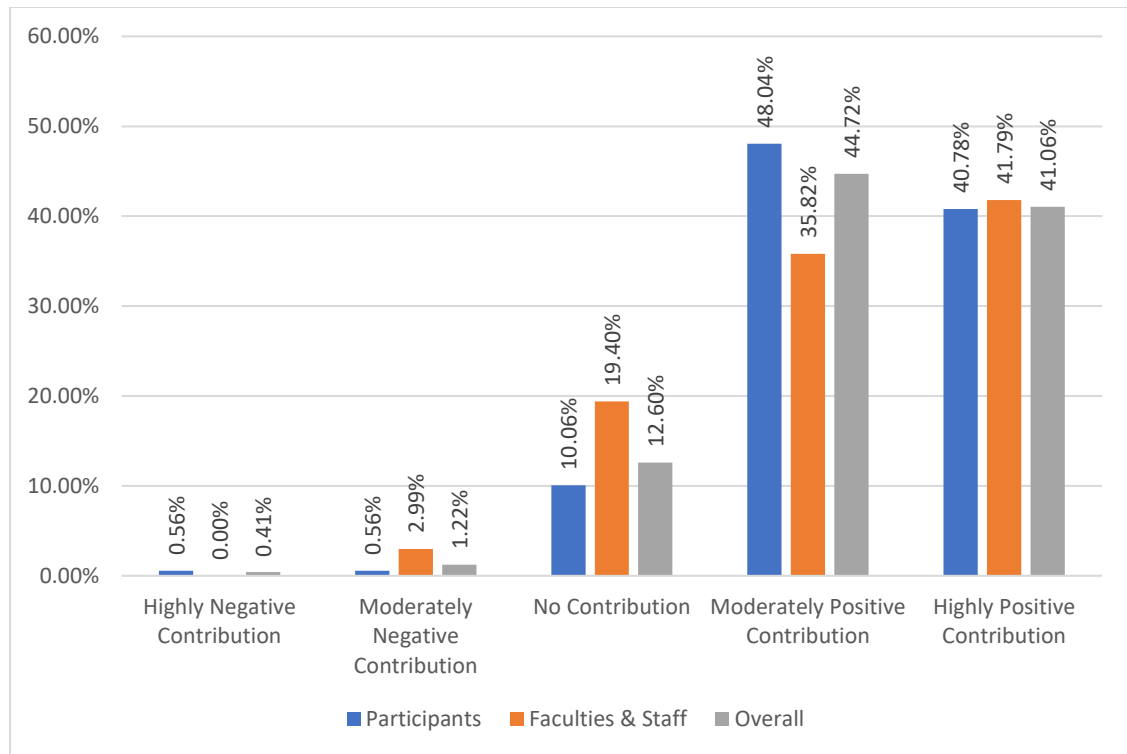
One of the examples of how a library automation system contributes to discipline is the return time of issued books. There is a deadline for returning the books from the BPATC library. Before the introduction of the automated system, the issuer often forgot to return the books timely. Now, the automated system sends the issuer reminder of the deadline. As a result, the occurrence of not returning the books on or before the deadline never occurs due to forgetting the deadline. This helps to bring

"I could never remember the deadline. The text from library saved me from embarrassment."

- Faculty, BPATC

discipline to the library management system in BPATC. 44.72% of the interviewees think that the library automation system has a Moderately Positive Contribution to discipline and 41.06% of them think that the system has a Highly Positive Contribution to discipline.

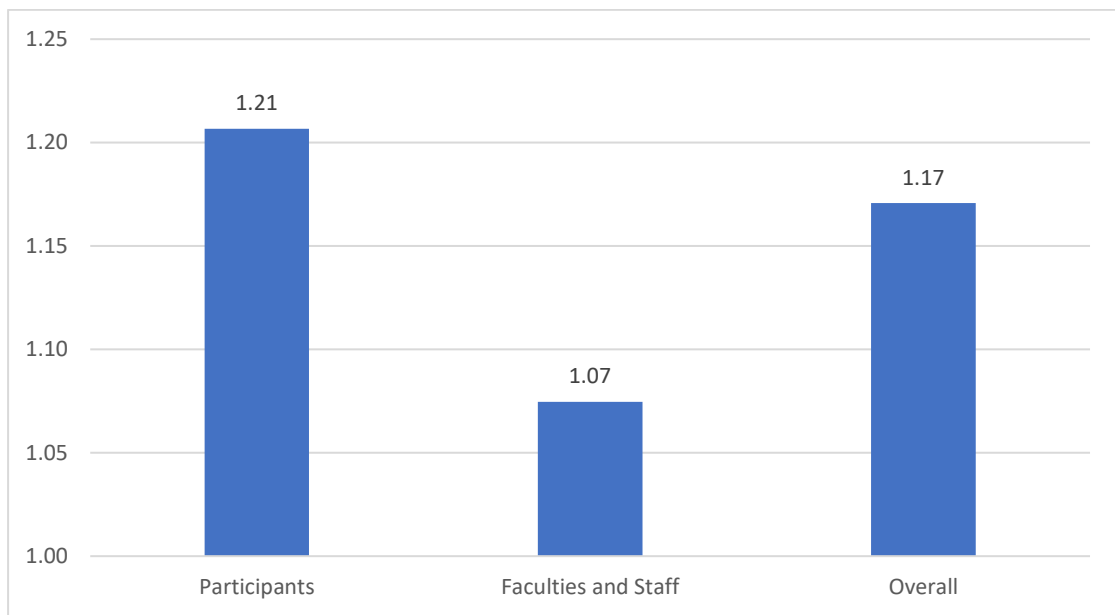
Figure 16: Perception of Library Automation System’s Contribution to Discipline



4.2.2.3 Library Automation System’s Contribution to Integrity

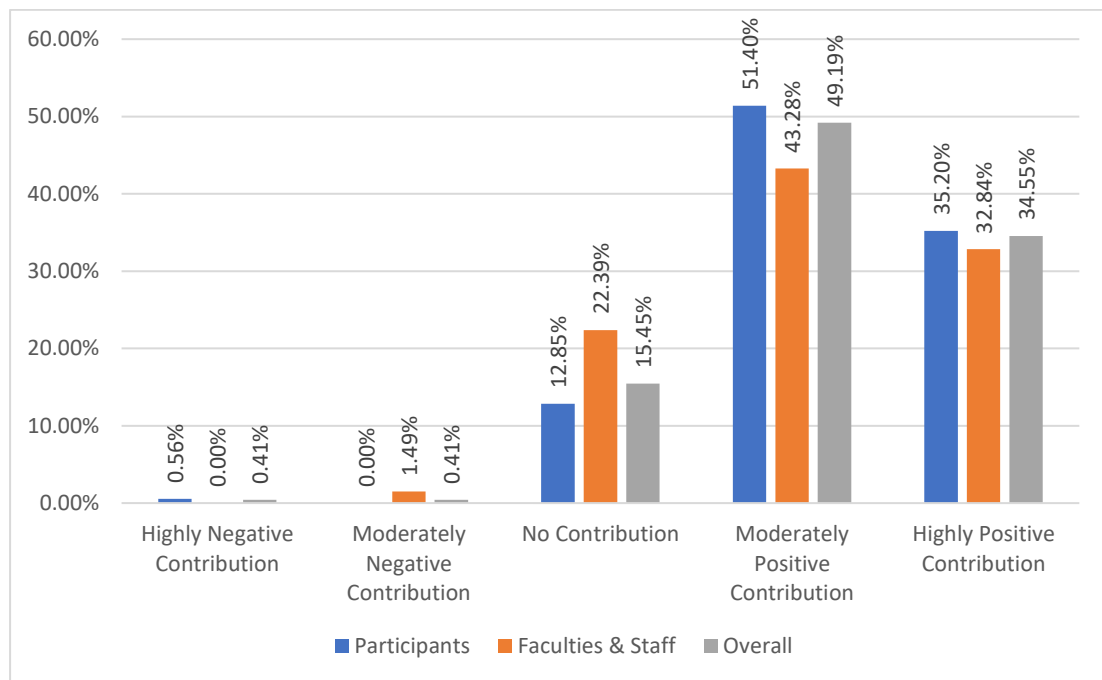
According to the participants of core courses, the contribution score of the library automation system to integrity is 1.21. According to the faculties and staff, the contribution score is 1.07. Like the contribution to the discipline, the participants’ perception regarding the contribution of the library automation system to integrity is more positive than that of the faculties. On a scale from -2 to +2, the overall contribution score of the library automation system to the discipline in BPATC is 1.25.

Figure 17: Library Automation System's Contribution Score Average to Integrity



While scrutinizing the respondents' view of the library automation system's contribution to integrity, it has been observed that 51 percent of the participants and 43 percent of the faculty & staff emphasized a moderately positive contribution to integrity. And 35 percent of the participants and 33 percent of the faculty & staff think that the library automation system has a high positive contribution to integrity. 13 percent of the participants and 22 percent of the faculty & staff could not find any contribution of the library automation to integrity while about 1 percent of the participants and faculty & staff believe that library automation system has a negative effect with integrity. Most of the respondents who refer to the negative or no contribution of the library automation system to integrity indicated the reluctance of the participants to avail of the automated services and moreover infer a negative correlation with integrity.

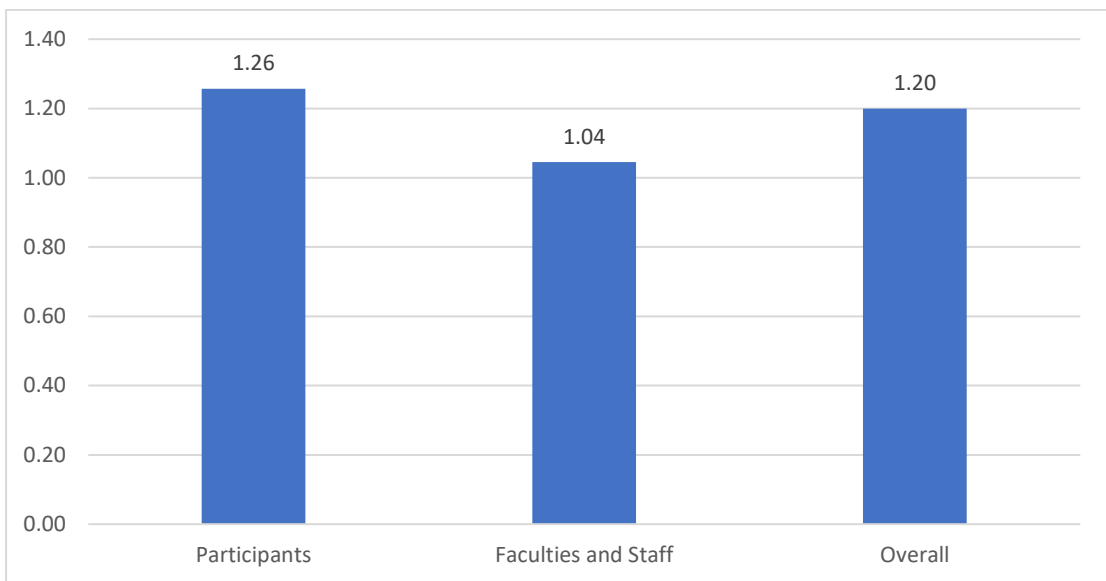
Figure 18: Perception of Library Automation System's Contribution to Integrity



4.2.2.4 Library Automation System's Contribution to Innovation

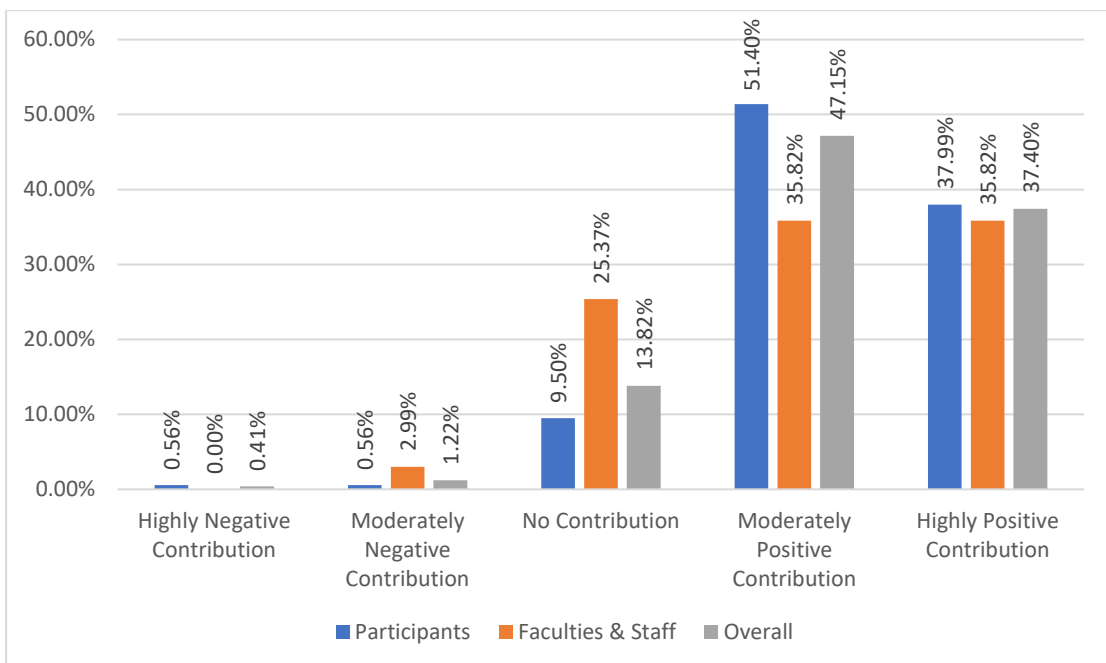
When asked about the contribution of the library automation system to innovation, a very negligible percentage of the interviewees told that it has a Highly or Moderately Negative Contribution to innovation. Surprisingly, more faculties and staff (25.3%) than the participants (9.50) think that this automated system has No Contribution to initiating any innovative idea. This trend is similar in cases of Moderately or Highly Positive Contribution as well. More participants than faculties and staff perceive that the library automation system has a positive contribution to innovation in BPATC. That is why the contribution score of the system to innovation by participants (1.26) is higher than that of the faculties and staff (1.04).

Figure 19: Library Automation System's Contribution Score Average to Innovation



The interviewees were asked to generate ideas for new digitization initiatives. One participant told that all the lectures can be recorded and stored in the library. Some of the participants told that an online classroom system can be introduced in BPATC where session recordings will be stored. All the new digitization ideas related to library automation system came from the participants. No faculty or staff mentioned any library digitization-related idea for innovation.

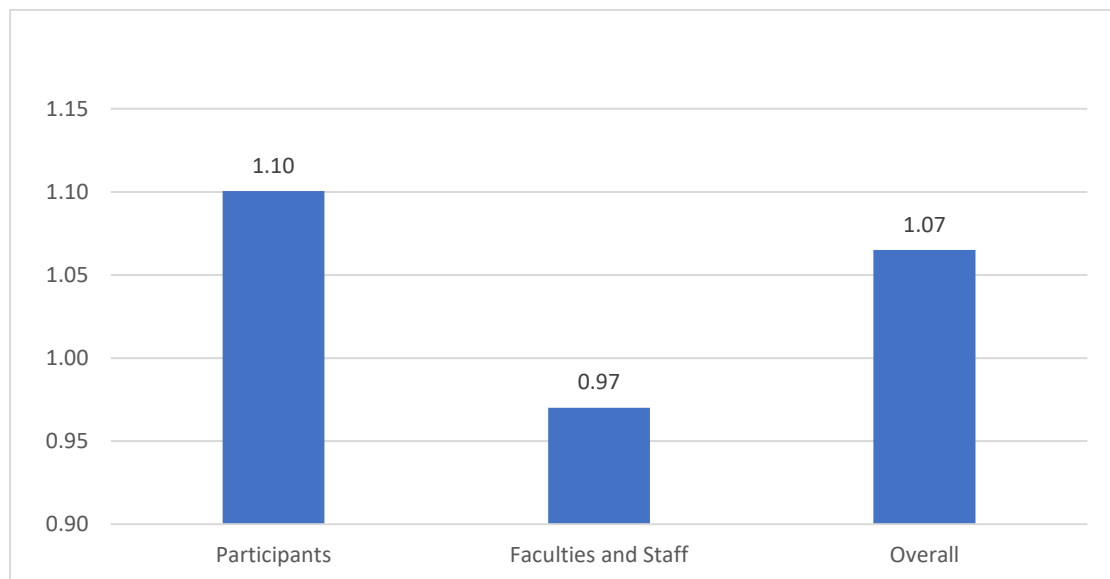
Figure 20: Perception of Library Automation System's Contribution to Innovation



4.2.2.5 Library Automation System's Contribution to Learning for Result

The Library Automation System's Contribution to Learning for Result graph represents the level of contribution of the library automation system to learning for result as a core and shared value of BPATC. According to the opinion of participants of core courses, the contribution score of library automation to learning for result is 1.10. According to the faculties and staff, the contribution score is 0.97. The KII with Course Management Team member revealed that the participants sometimes have mandatory library sessions and they have to borrow books more frequently so most of the participants are aware of the library automation system than that of the faculties and staff. As a result, the respondents of the participant group opined more positively regarding the contribution of Library automation. On a scale from -2 to +2, the overall contribution score of the library automation system to learning for result in BPATC is 1.07.

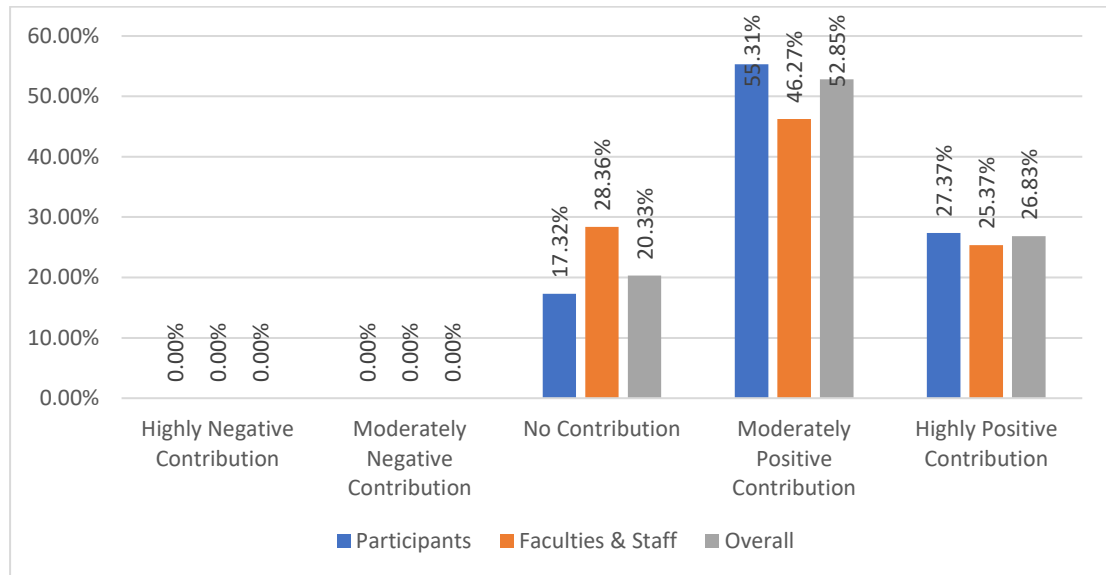
Figure 21: Library Automation System's Contribution Score Average to Learning for Result



The data represents that none of the respondents consider library automation has a negative impact on learning for result. 20.33 percent of the total respondents opined that the library automation system has no contribution to learning for result while a significant number of respondents (52.85%) mentioned that the Library automation system has a moderately positive contribution to learning for result. Moreover, 26.83 percent of respondents including participants, faculties, and staff opined that library automation has a highly positive contribution to learning for result. Data shows that

almost 80% of the respondents perceive a positive correlation between library automation and learning for result.

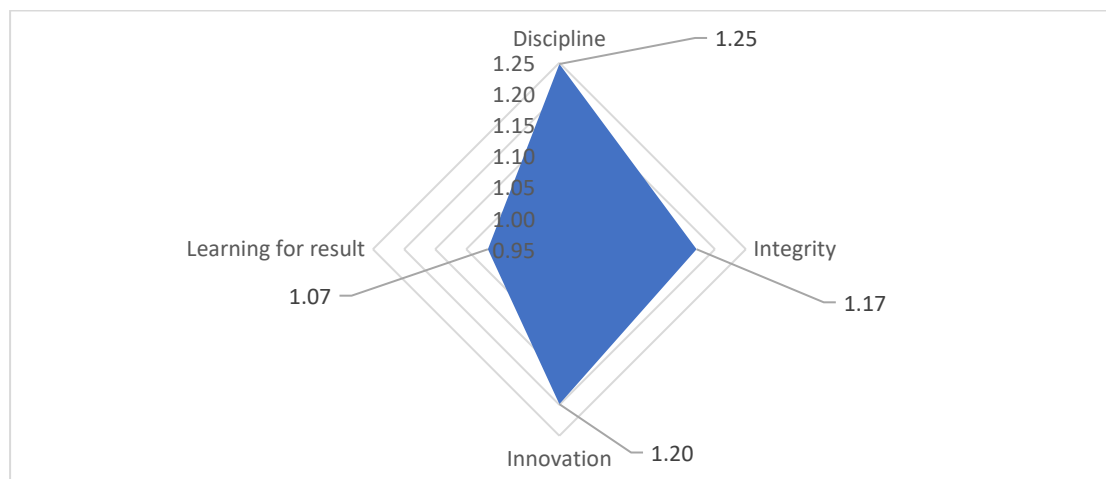
Figure 22: Perception of Library Automation System’s Contribution to Learning for Result



4.2.2.6 Library Automation System’s Overall Contribution to Core Values of BPATC

Library Automation System has the highest contribution to the discipline (1.25) among the four core values. Innovation (1.20) and Integrity (1.17) has similar contribution score. Learning for Result has the lowest contribution score (1.07). The respondents of qualitative interviews mentioned that the stakeholders of BPATC do not use the library nowadays. They are more inclined to free online sources. That is why whether there is an automated system or not, the library has lost its appeal to the stakeholders as the Centre of learning.

Figure 23: Library Automation System’s Overall Contribution to Core Values

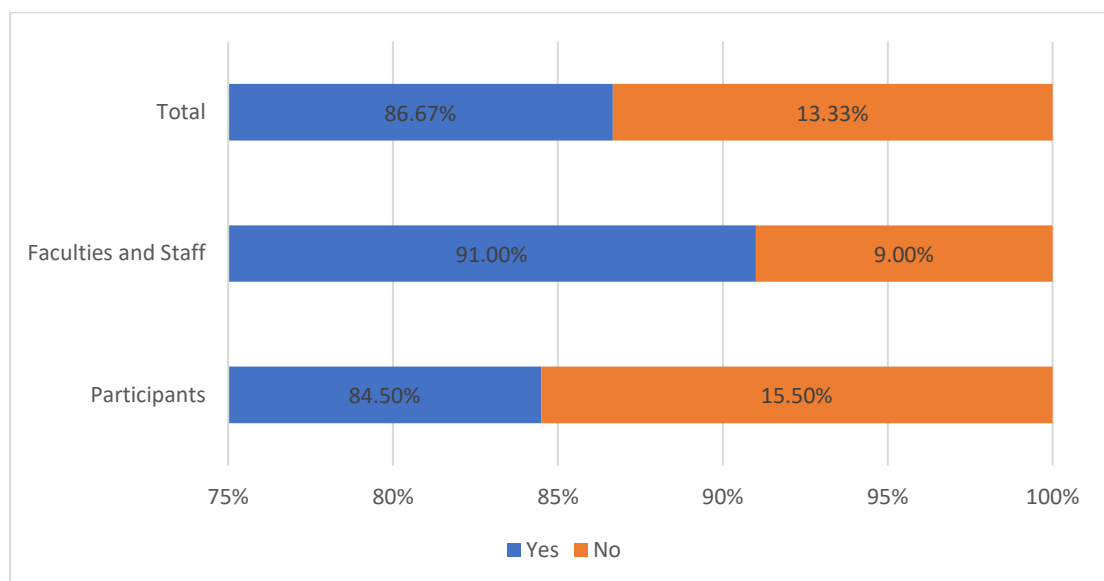


4.2.3 Contribution of Online Classroom System to Core Values of BPATC

4.2.3.1 Stakeholders' Awareness on Online Classroom System

The respondents were asked whether they have an awareness of the online classroom system. Among 200 course participants, 84.50% knew about this system. The lack of awareness of 15.50% of participants about the online classroom system indicates that they are not convinced of treating online platforms i.e. Zoom/Cisco WebEx etc. as online classrooms, rather they expressed a different notion about online classroom system. The KII participant said that the classroom where all types of classroom facilities such as classroom materials, handouts, power point presentations, class video recordings, reading lists, etc. are stored in a single platform will be regarded as an online classroom.

Figure 24: Percentage Distribution of Stakeholders' Awareness on Online Classroom System



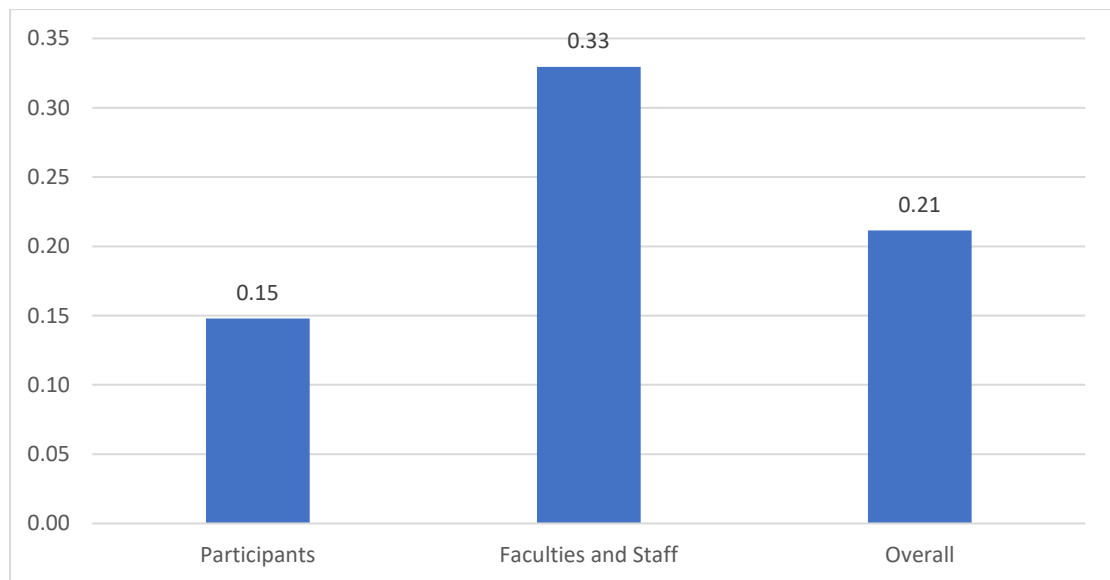
Among the 100 faculties and staff interviewed, 91.00% knew about the online classroom system. The reason behind one-tenth of the respondents from this group not knowing about online classrooms is the limited opportunity of engaging with this system by staff. The faculty members are usually associated with the online classroom system because they are to conduct sessions with the participants of different training programs. On the contrary, only the staff who are engaged in training-related activities know about the online classroom system. It is worth mentioning that the percentage of not knowing about this system is the staff only, no interviewee from faculty members

is found who do not know about this system. However, out of a total of 300 respondents, 86.67% are aware of the existence of an online classroom system in BPATC.

4.2.3.2 Online Classroom System's Contribution to Discipline

An online classroom system or distance learning is one of the digital initiatives taken by BPATC to ensure continuous learning during a pandemic or in an emergency. Although to ensure uninterrupted learning online classroom system has been initiated, both the participants and faculty & staff inferred low contribution to the discipline. The overall contribution score seems quite low (0.21) compared with the other indicators. With a 0.33 contribution score, faculty members & staff have mentioned that it is quite difficult to maintain discipline while conducting an online classroom system, and on the other hand, participants also think that the online classroom system's contribution to discipline is very low.

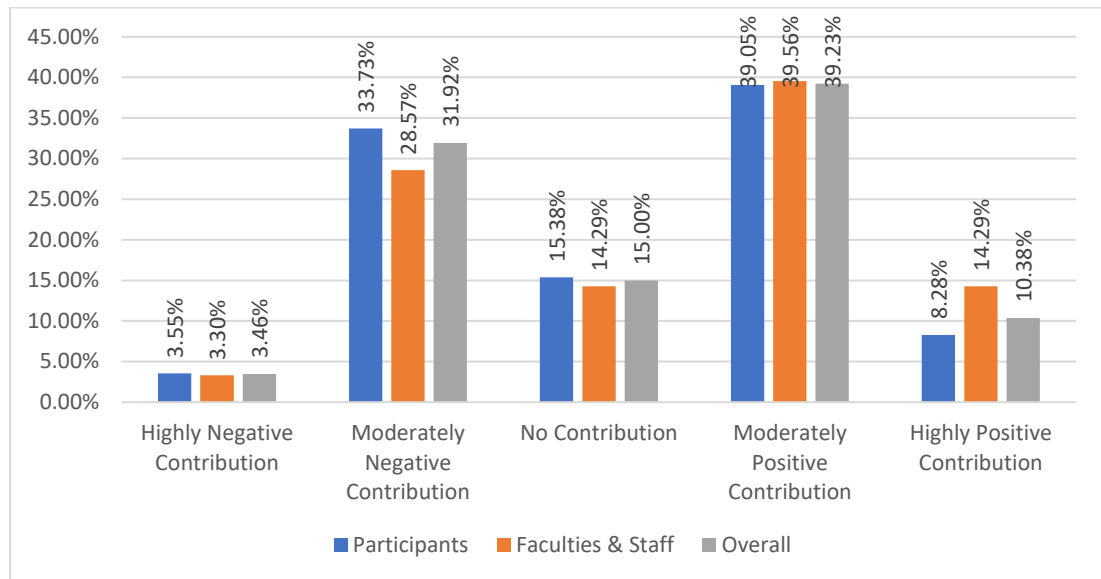
Figure 25: Online Classroom System's Contribution Score Average to Discipline



Analyzing the contribution matrix, it can be inferred that instead of having a low contribution score, the highest number of participants (39 percent) and highest number of faculty & staff (39 percent) stated that the online classroom system has a moderate positive contribution to the discipline. But a very negligible percentage of both the participants (8 percent) and faculty & staff (14 percent) posits that online classroom system have a high positive contribution to discipline. Rather 34 percent of the participants and 29 percent of the faculty & staff stress that the online classroom system has a negative contribution to the discipline. Overall 15 percent of the participants and

faculty & staff have found no contribution of the online classroom system to discipline. 3.5 percent of the participants and 3.3 percent of the faculty & staff mentioned the highly negative contribution of the online classroom system to discipline. Moreover, it can be concluded that there are two groups of respondents, one of them thinks that the online classroom system moderately contributes to discipline and the other group think that the online classroom system has a negative contribution to discipline.

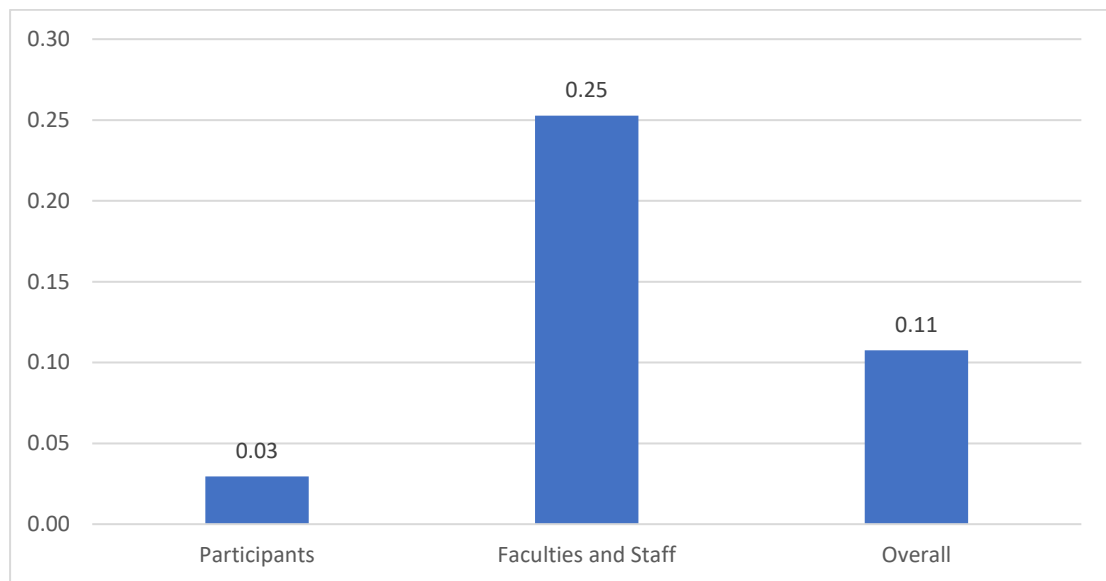
Figure 26: Perception of Online Classroom System's Contribution to Discipline



4.2.3.3 Online Classroom System's Contribution to Integrity

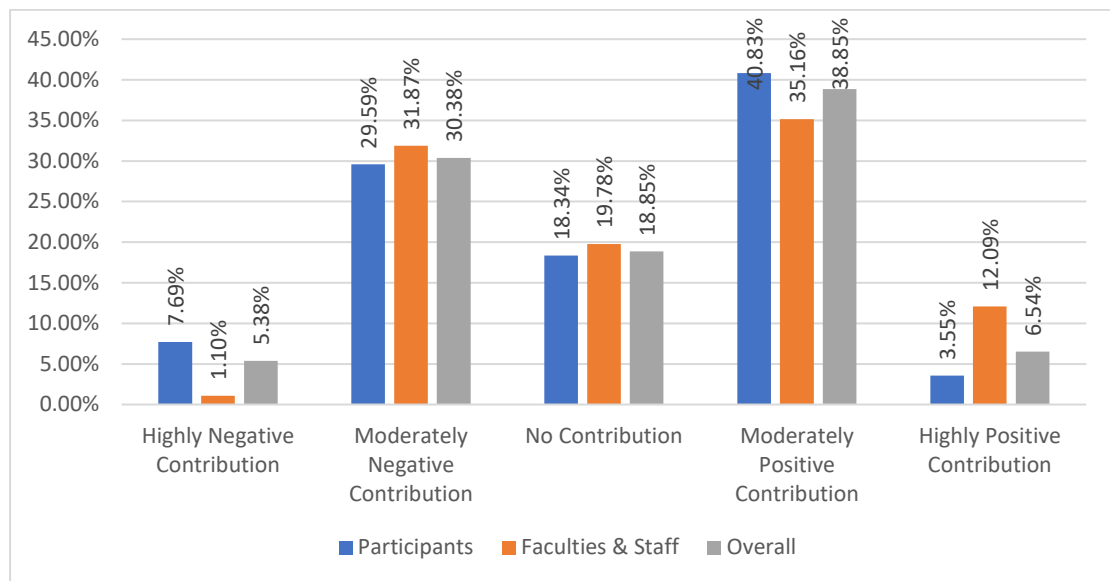
The online classroom system's contribution score to integrity shows that both the participants and the faculty & staff infer very low contribution. The overall contribution score is 0.11 where the score for participants is 0.03 and the score for faculty & staff is 0.25. The contribution score average of online classroom explains that all the respondents seem to have very insignificant value to the contribution to integrity. And so according to the respondents, the online classroom system has no or very low contribution to professional integrity.

Figure 27: Online Classroom System's Contribution Score Average to Integrity



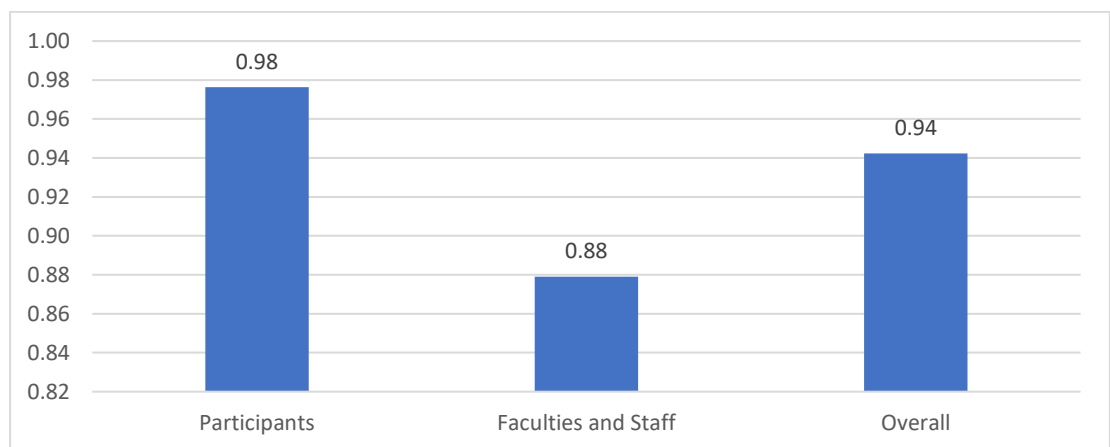
Online classroom system's contribution to integrity chart reveals that 41 percent of the participants and 35 percent of the faculty & staff state that online classroom system have a moderately positive contribution to integrity whereas 3.55 percent of the participants and 12 percent of the faculty & staff have agreed that online classroom system has a highly positive contribution to integrity. A significant portion of the participants (30 percent) and faculty & staff (32 percent) think that the online classroom system has a moderately negative contribution to professional integrity. Among all the respondents 18 percent of the participants and 20 percent of the faculty & staff have not found any contribution of the online classroom system top integrity. And finally, 7.69 percent of the participants and 1.1 percent of the faculty & staff have mentioned that online classroom system have a highly negative contribution to integrity. Overall both the participants and faculty & staff online classroom system seem to have contributed to the learning culture but they strongly believe that the online classroom system has a very low contribution to integrity.

Figure 28: Perception of Online Classroom System's Contribution to Integrity



4.2.3.4 Online Classroom System's Contribution to Innovation

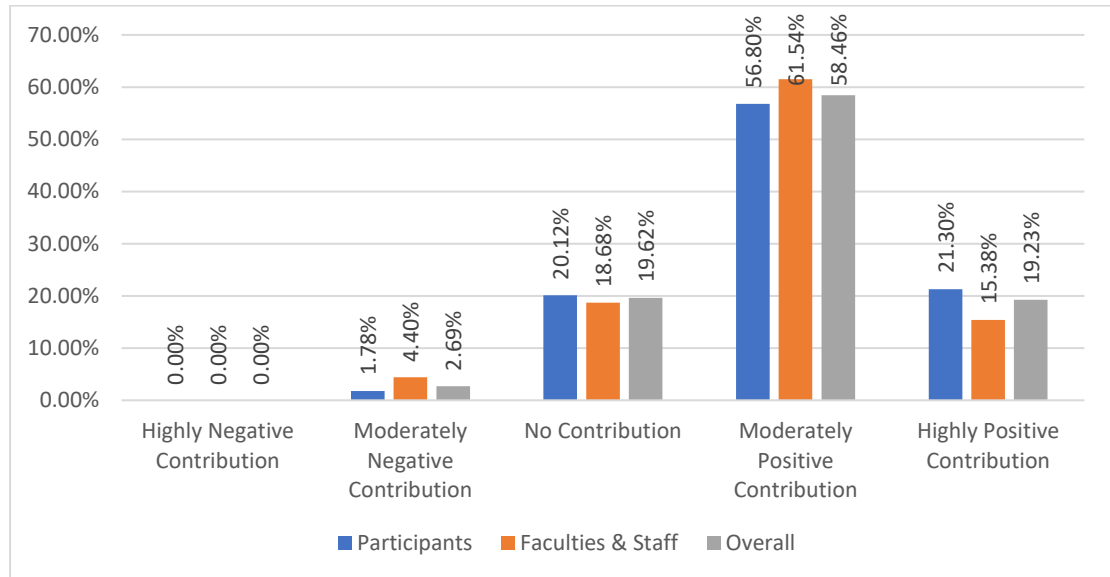
Figure 29: Online Classroom System's Contribution Score Average to Innovation



The perception of participants (0.98) is a bit more positive than the faculties and staff (0.88) of BPATC in terms of the contribution of the Online Classroom System to innovation. Around one-third of the interviewees told that the online classroom system has a Moderately Positive Contribution to Innovation in BPATC. From the IDIs, it was found that all the participants, faculties, and staff are acquainted with the online classroom system. However, some of the participants did not recognize the existing Zoom/Cisco Webex platform as an online classroom system. Some of them suggested that the online classroom system could be a new digital innovation in BPATC and here they meant a system where other online facilities like session recording, reading list,

attendance history, and performance evaluation, among others, would be incorporated into the system.

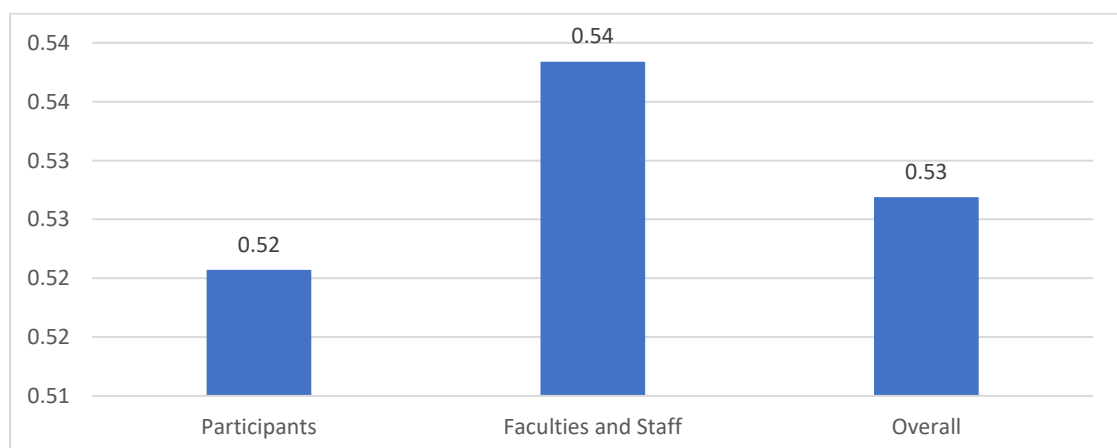
Figure 30: Perception of Online Classroom System’s Contribution to Innovation



4.2.3.5 Online Classroom System’s Contribution to Learning for Result

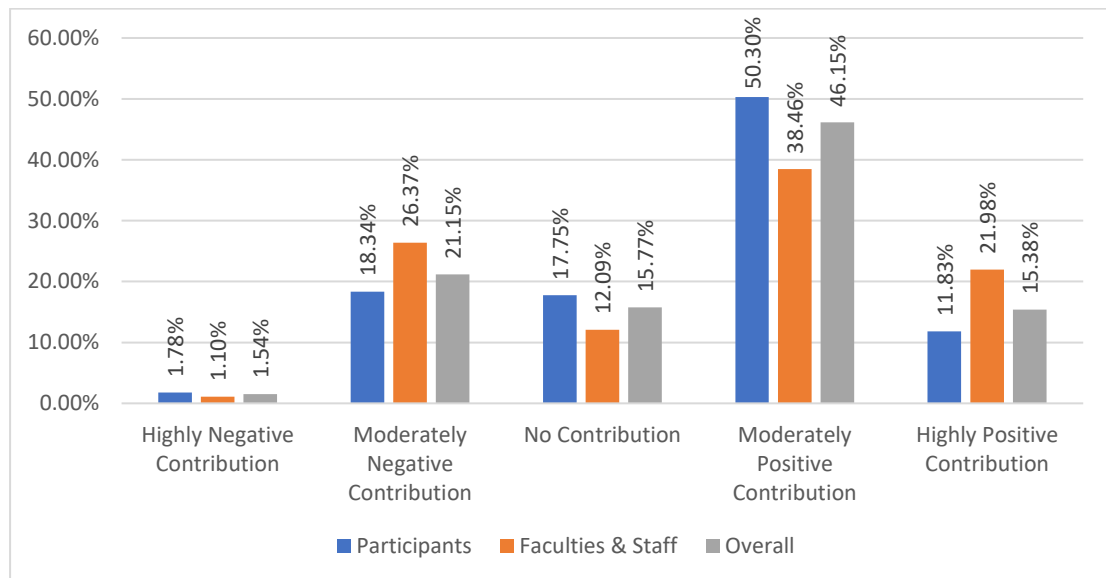
The online classroom system’s contribution to learning for result chart shows the opinion regarding the extent to which online classrooms contribute to learning for result. According to the opinion of respondents of the participants group the contribution score of the online classroom system to learning for result is 0.52 and according to the response of the faculties and staff group the score is 0.54 On a scale from -2 to +2, the overall contribution score of online classroom system to learning for result in BPATC is 0.53 which denotes poor contribution.

Figure 31: Online Classroom System’s Contribution Score Average to Learning for Result



The following chart represents how positively or negatively the correlation between the online classroom system and learning for result is perceived by the respondents. The opinion varies from highly negative to highly positive contributions. Only 1.54% of the total respondents mentioned about highly negative contribution of the online classroom system to learning for result. 21.15% of the respondent including participants, faculties, and staff perceived that the contribution of online classrooms to learning for result is moderately negative. On the other hand, 15.77% of respondents mentioned that the online classroom system has no contribution to learning for result at BPATC. Furthermore, 46.15% of the respondents mentioned that there is a moderately positive contribution of the online classroom system on learning for result at BPATC and 15.38% of respondents view the contribution as highly positive. The qualitative data of IDI, KII, and FGDs reveal that the online classroom system was introduced as an alternative to physical classes during the pandemic. In normal situations, physical classes are more enjoyable and interactive. that's why the participants view there is a poor correlation between the online classroom system and learning for result as a core and shared value of BPATC.

Figure 32: Perception of Online Classroom System's Contribution to Learning for Result

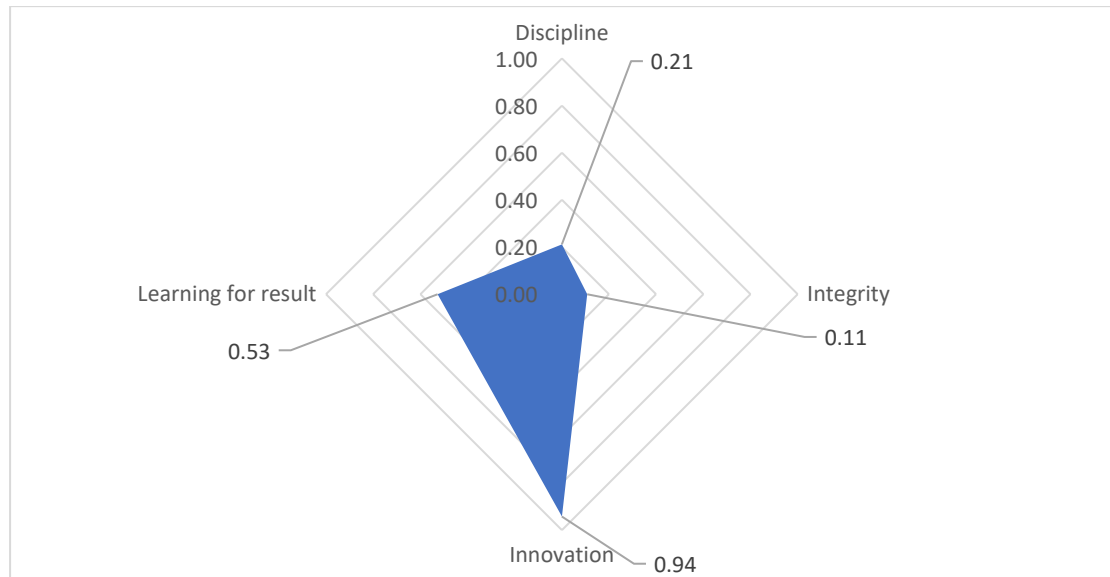


4.2.3.6 Online Classroom System's Overall Contribution to Core Values of BPATC

The contribution score of the online classroom system to the core values of BPATC is very poor compared to the other digital initiatives. The contribution score of this system to integrity and discipline is only 0.11 and 0.21 respectively. Its contribution score to learning for result is also not significant (0.53). The only core value to which the system

has a mentionable contribution is innovation (0.94). This is because the online classroom system opens a vast area of opportunities for new innovative ideas.

Figure 33: Online Classroom System's Overall Contribution to Core Values

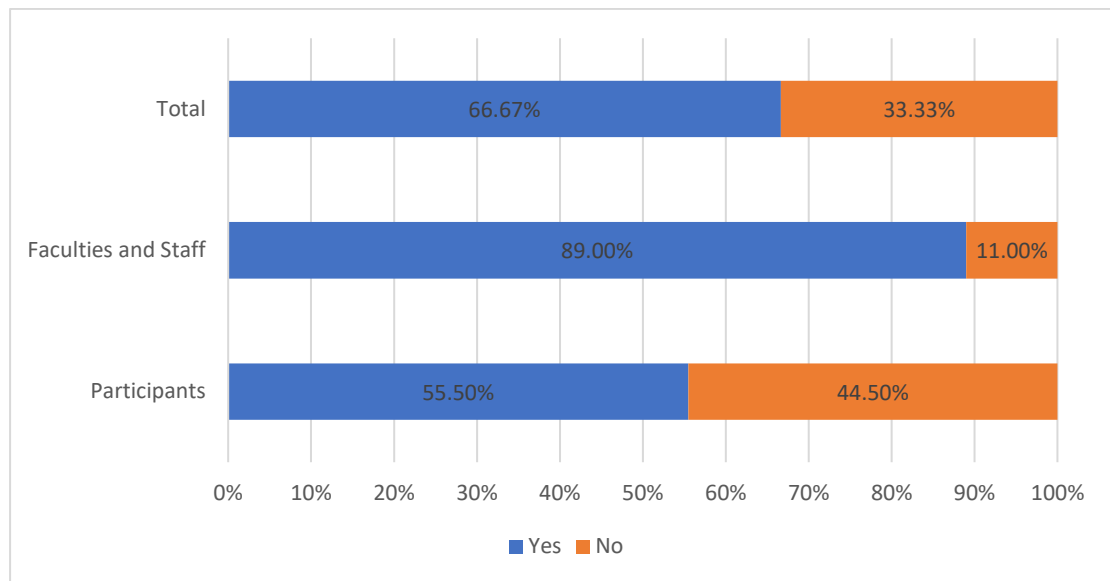


4.2.4 Contribution of Clinic Management System to Core Values of BPATC

4.2.4.1 Stakeholders' Awareness on Clinic Management System

The respondents were interviewed about their awareness of the clinic management system of BPATC. Among the 200 participants from training courses, 55.50% are aware of the clinic management system of this Centre while almost half of the participants are not conversant with this system. The main reason behind the issue of not knowing about this system is that either the participants of this group have not taken any service using this platform or the clinic still provides services manually to the stakeholders. Additionally, some participants were unmindful at the briefing session on medical services which was held at the very beginning of the course. Furthermore, there is no mobile apps or online appointment system used for getting services from the clinic.

Figure 34: Percentage Distribution of Stakeholders' Awareness on Clinic Management System

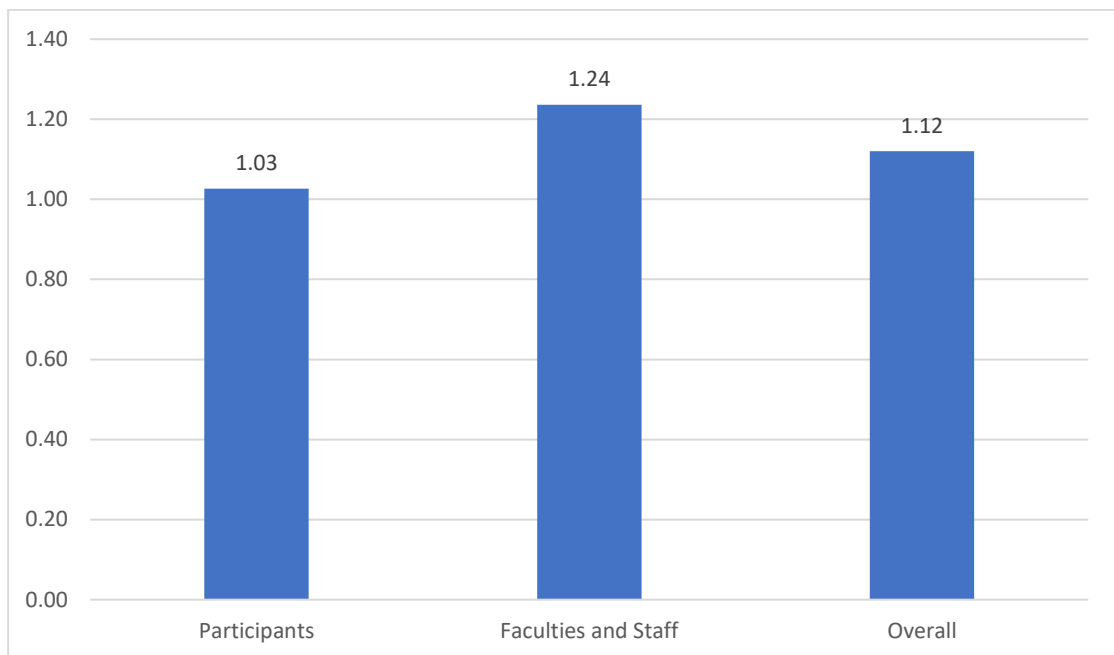


Among the 100 faculties and staff interviewed, 89% knew about the clinic management system. The reason for not knowing about this system by approximately one-tenth of the faculties and staff is that the system under which the services are rendered to them is not demonstrated in a befitting manner. Generally, they get medical services through the Kiosk system where only payments are received, no patient history is recorded even if no text message or acknowledgment text is delivered to the service seeker after visiting the clinic. However, out of the total 300 respondents, 66.67% are aware of the clinic management system while almost one-third of the respondents are not familiar with this system.

4.2.4.2 Clinic Management System's Contribution to Discipline

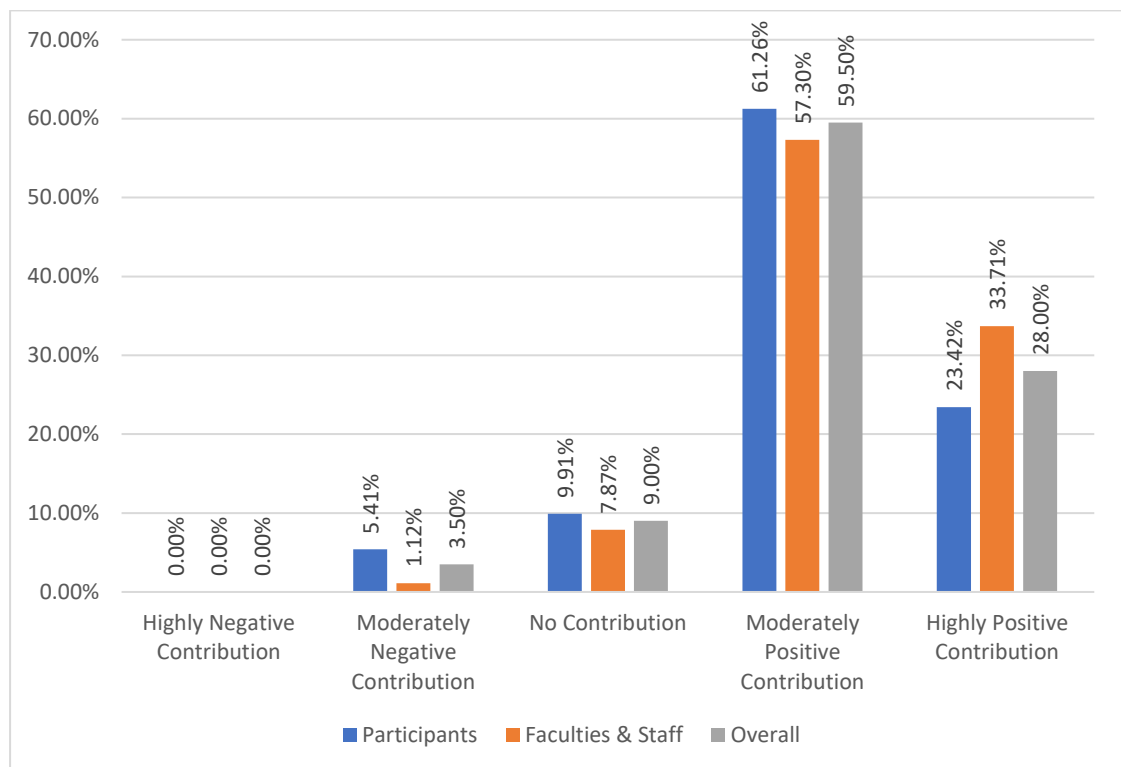
The contribution score of the clinic management system to discipline explains the dramatic positive changes in the overall management system. All the participants with a contribution score average of 1.03 think that after initiating the clinic management system the discipline of the institution has been enhanced and faculty & staff with a contribution score average of 1.24 also state that for ensuring discipline clinic management system helps better than before.

Figure 35: Clinic Management System's Contribution Score Average to Discipline



After scrutinizing the response of the participants it is clear that 85 percent of them think that the clinic management system ensures better discipline within the institution. 61 percent of them state that the clinic management system has a moderately positive contribution to the discipline and about 24 percent of them think it has a highly positive contribution to the discipline. 57 percent of the faculty & staff have mentioned that the clinic management system has a moderately positive contribution and about 34 percent of them think to have a highly positive contribution to discipline. Most importantly, none of the respondents mentioned that the clinic management system has a highly negative contribution to the discipline. Overall 3.5 percent of the respondents have found a moderately negative contribution and 9 percent of the respondents have mentioned having no contribution of the clinic management system to discipline.

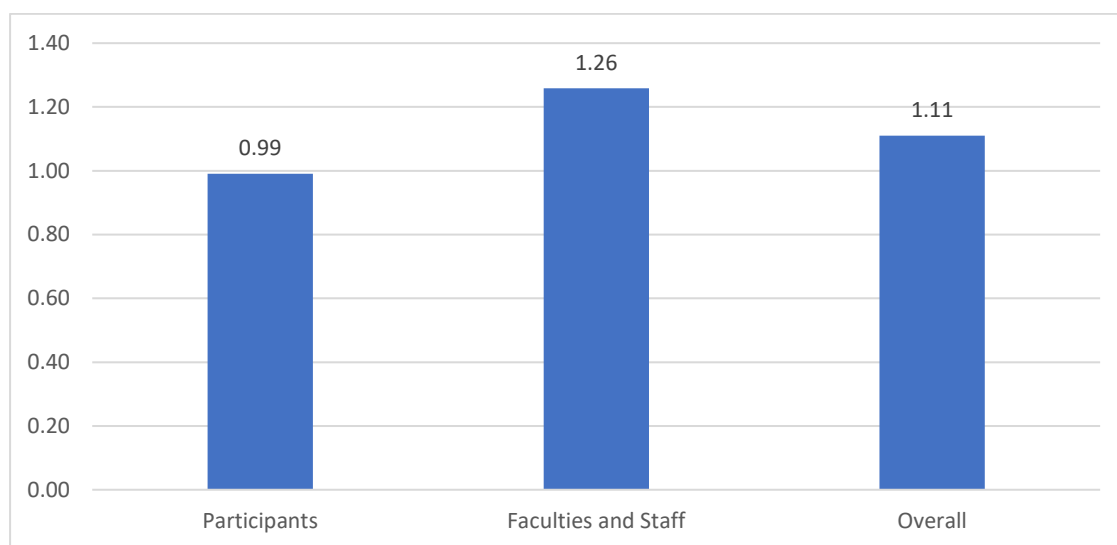
Figure 36: Perception of Clinic Management System's Contribution to Discipline



4.2.4.3 Clinic Management System's Contribution to Integrity

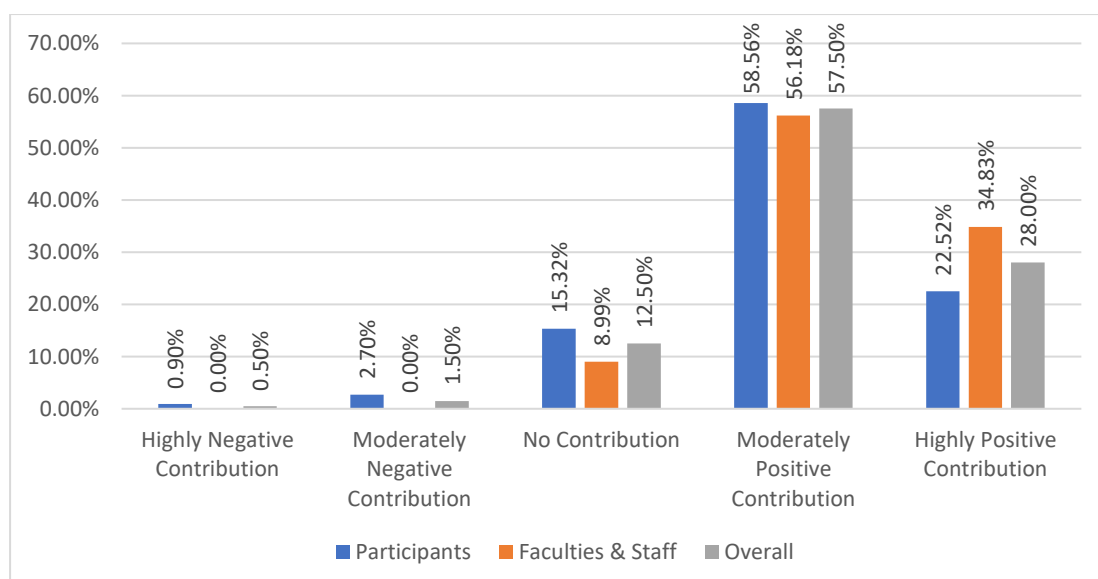
The respondents were asked whether the digitization of the clinic management system has any impact on integrity or not. And on a scale of -2 to +2 the overall score is 1.11 which posits that the respondents have a very positive notion about clinic management to ensure the integrity of the organization. The contribution score of the clinic management system's contribution to integrity shows that initiating the clinic management system has contributed significantly to the ethical practices and consistency of the management. Participants' score of 0.99 and faculty & staff's score of 1.26 have clearly emphasized that different initiative of clinic management automation has a positive contribution to ethical practices and consistency of the management.

Figure 37: Clinic Management System's Contribution Score Average to Integrity



From the clinic management system's contribution to integrity chart, it can be inferred that about 81 percent of the participants respond that the clinic management system has a moderately positive contribution (58.56 percent) and highly positive contribution (22.52 percent) to integrity whereas 91 percent of the faculty and staff have mentioned that clinic management system has moderately positive contribution (56.18 percent) and highly positive contribution (34.83 percent) to integrity. Overall only 12.5 percent of the participants and faculty & staff think that the clinic management system has no contribution to integrity. Among the participants, only 0.9 percent mentioned that the clinic management system has a highly negative contribution and 2.70 percent think that the clinic management system has a moderately negative contribution to integrity.

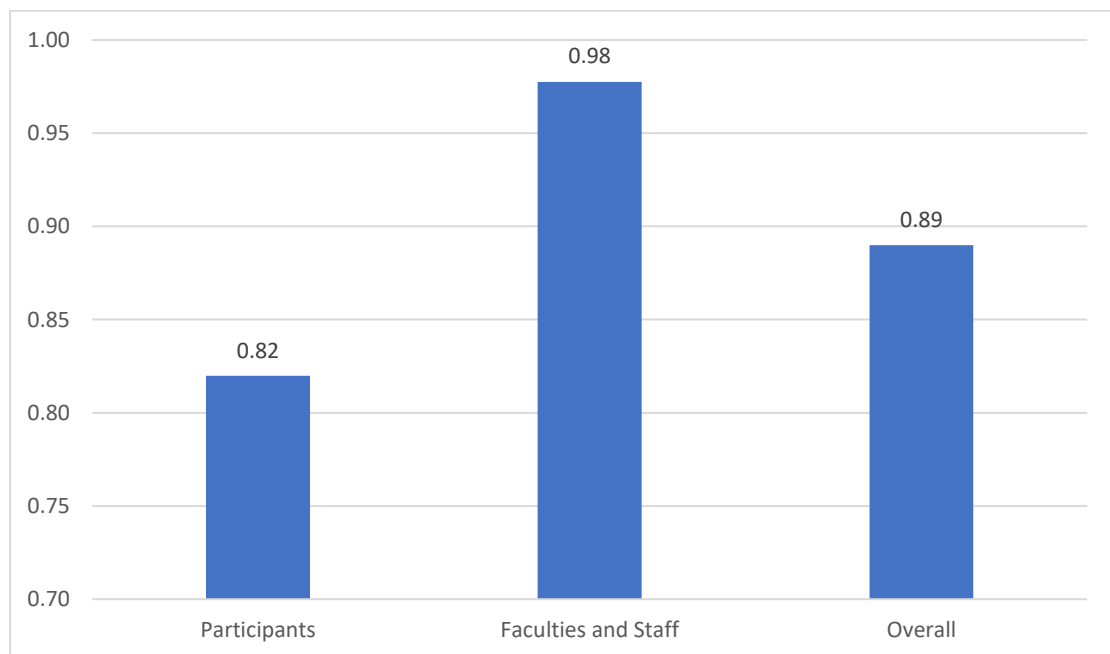
Figure 38: Perception of Clinic Management System's Contribution to Integrity



4.2.4.4 Clinic Management System's Contribution to Innovation

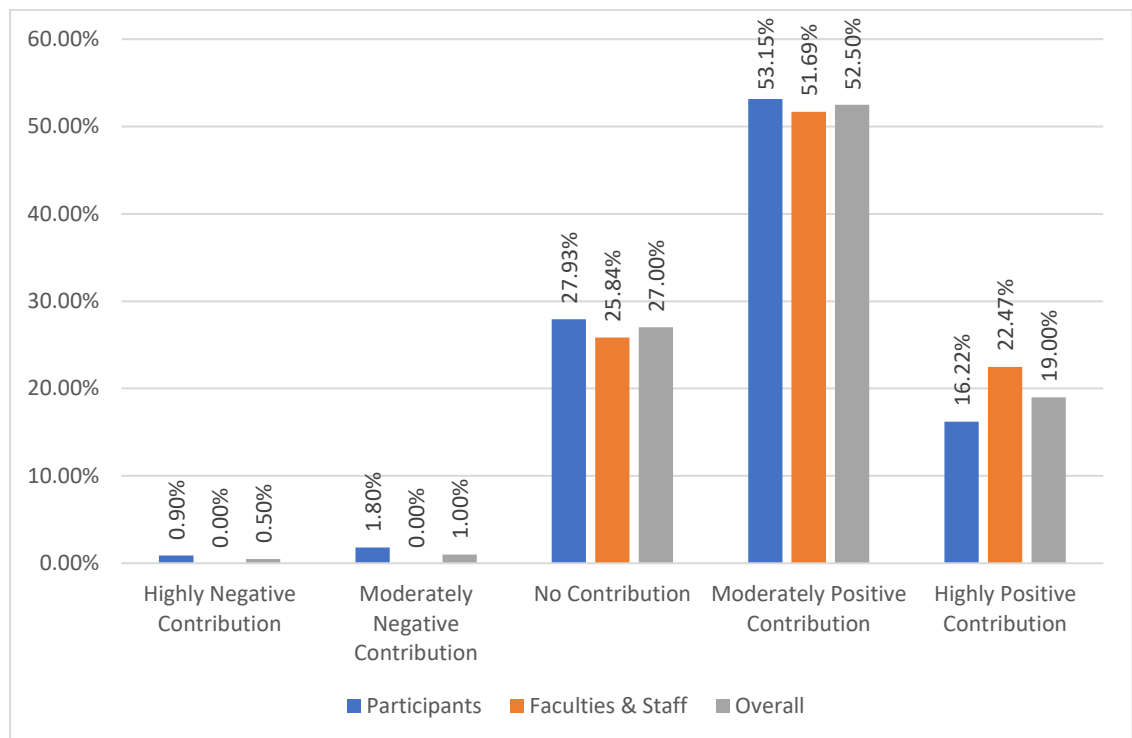
The interviewees were asked about their perception of the contribution of the Clinic Management System to innovation in BPATC. Around half of the participants and faculties and staff told that the clinic management system has a Moderately Positive Contribution to innovation. 16.22% of the participants and 22.47% of the faculties and staff told that it has a Highly Positive Contribution to innovation. The overall contribution score of the clinic management system to innovation is 0.89.

Figure 39: Clinic Management System's Contribution Score Average to Innovation



From the qualitative data, it was found that the clinic management system does not have any direct contribution to innovation. However, as the clinic management system has been introduced in BPATC and the stakeholders are used to this digital system, the demand for other digital clinic-related services is increasing. The clinic management system used in BPATC is not a web-based application. So, the beneficiaries can not have online access or create health accounts in the system. There is already a demand for web-based clinic management system and this can lead to some new innovative ideas.

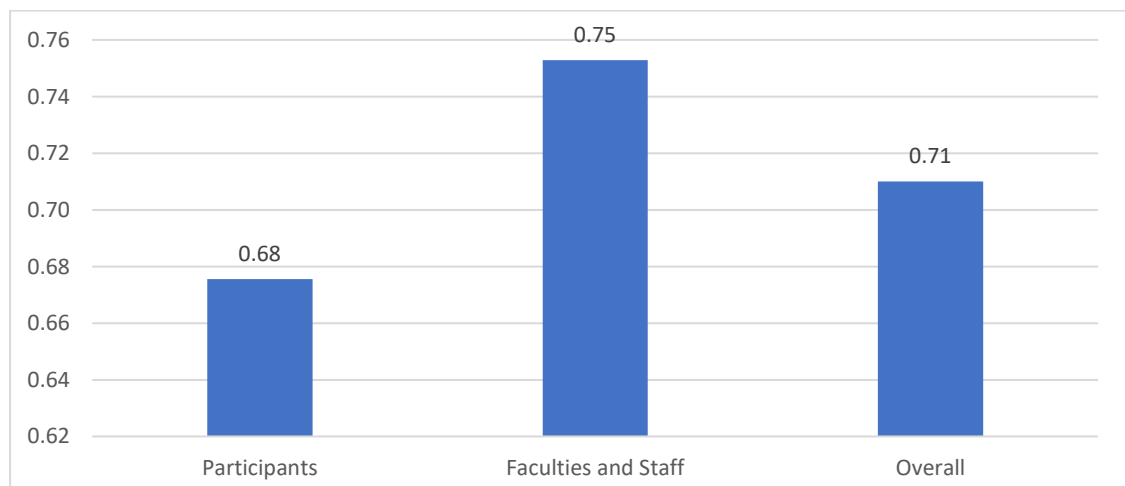
Figure 40: Perception of Clinic Management System's Contribution to Innovation



4.2.4.5 Clinic Management System's Contribution to Learning for Result

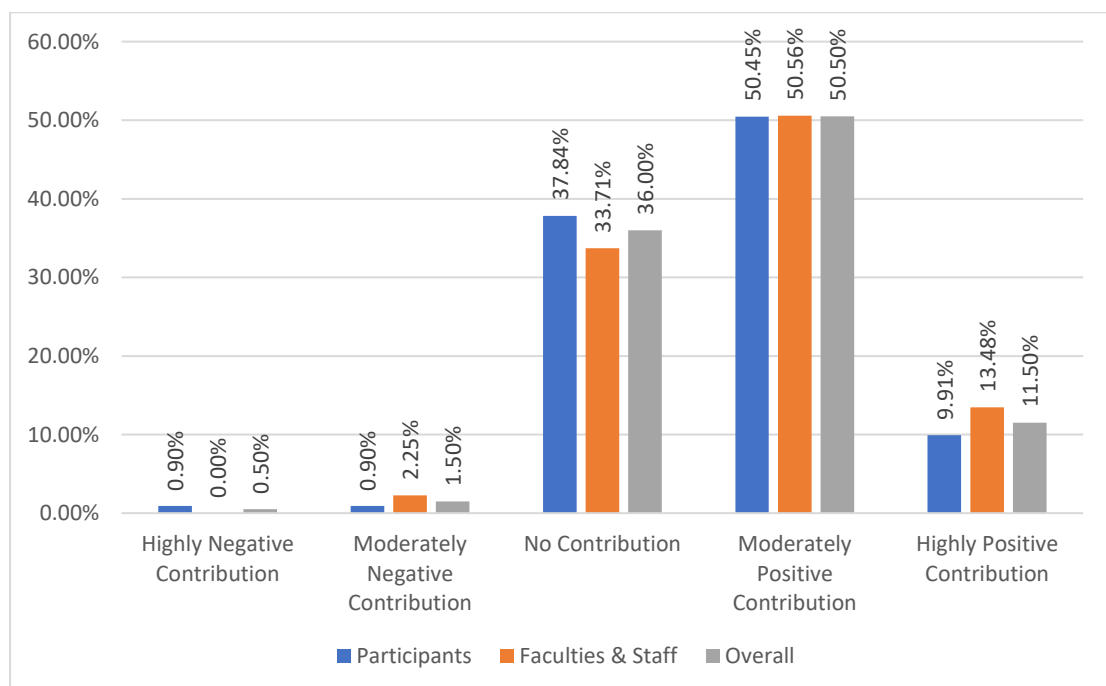
The graph relating to the contribution of the Clinic Management system on learning for results shows the score of the contribution of clinic management to learning for result on a -2 to +2 scale. According to the opinion of the participant of core courses, the contribution score is 0.68 and according to the opinion of faculties and staff, the contribution score is 0.75. The overall contribution score is 0.71 which is positive but not significant.

Figure 41: Clinic Management System's Contribution Score Average to Learning for Result



The following graph describes the opinion of the respondent regarding how the clinic management system is contributing to the value of ‘learning for result’ of BPATC. Only a few respondents opined that the Clinic management system has moderately negative contributions and highly negative contributions which comprise only 2% of the total respondent including both groups. 50.50% of respondents opined that the clinic management system has a moderately positive contribution to learning for result. Moreover, 11.50% of the respondents mentioned that the contribution of the clinic management system is highly positive. On the other hand a significant number of respondents i.e. 36% mentioned that the clinic management system has no contribution to upholding the value of ‘learning for result’. the qualitative data collected through KIIs and FGDs reveals that the Clinic Management system is mainly used by the doctors and staff of the BPATC Medical Centre for managing their daily activities, other faculties and staff and participants do not use this system directly. That’s why they are not accustomed to the system.

Figure 42: Perception of Clinic Management System’s Contribution to Learning for Result

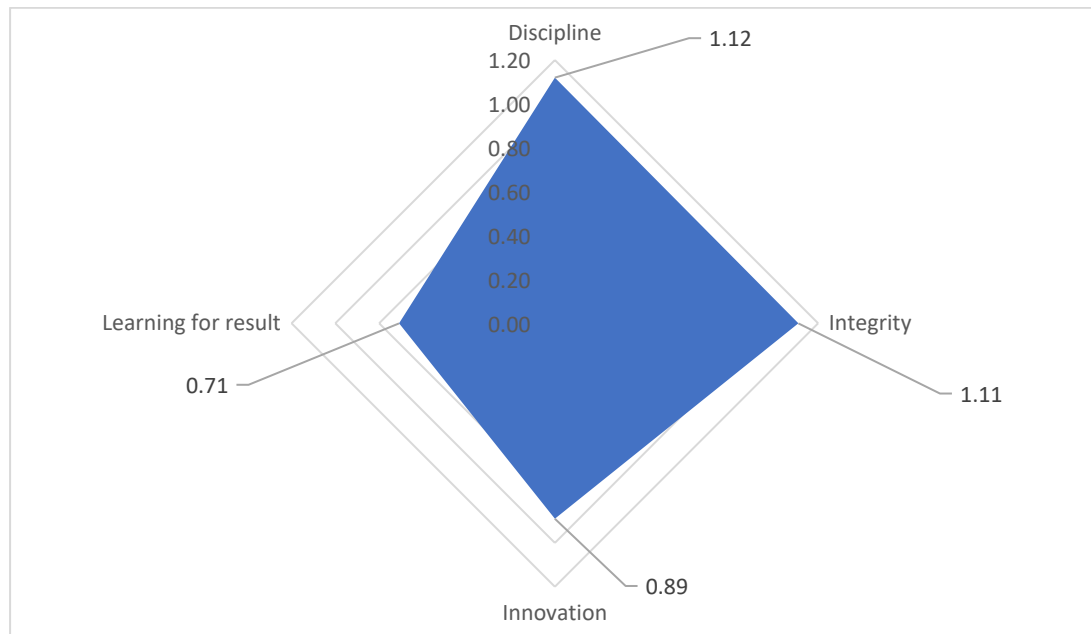


4.2.4.6 Clinic Management System’s Overall Contribution to Core Values of BPATC

Clinic Management System has similar contributions to discipline (1.12) and integrity (1.11). There is a technical explanation of why its contribution to innovation is not significant. The interviews with Assistant Programmers and Assistant System Analysts

revealed that the system was not developed in a web-based language. That is why it cannot be synchronized with ERP or any other web-based platform. As a result, adding more useful and user-friendly features will not be possible to this system.

Figure 43: Clinic Management System's Overall Contribution to Core Values



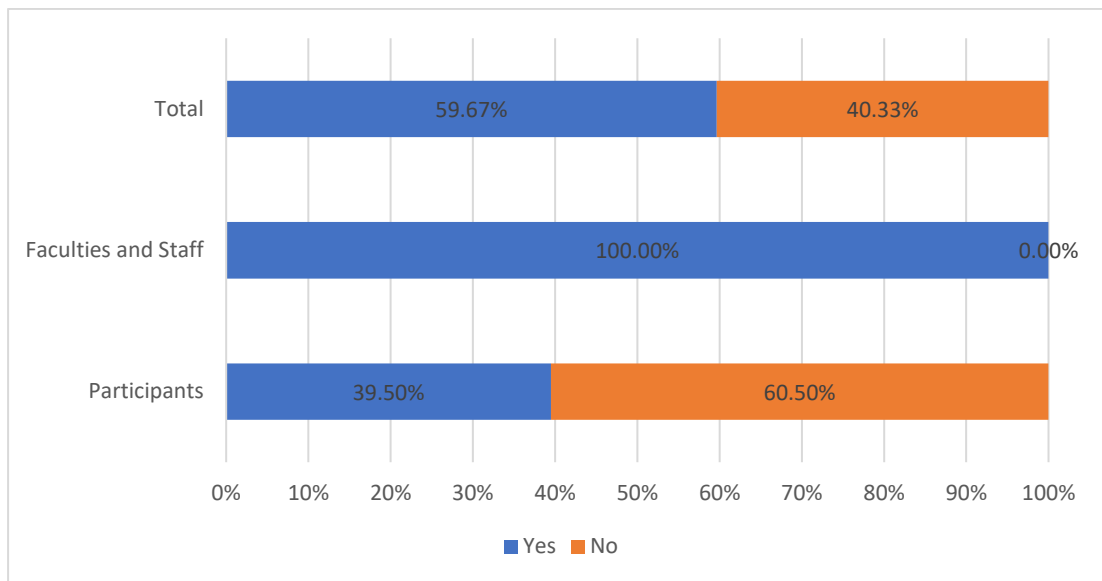
4.2.5 Contribution of Digital Attendance System to Core Values of BPATC

4.2.5.1 Stakeholders' Awareness on Digital Attendance System

The respondents were asked whether they have an awareness of the digital attendance system of BPATC. With regard to the 200 participants, 39.50% are aware of the digital attendance system whereas approximately two-thirds of this group are not observant of this issue. The lack of awareness of 60.50% of participants about the usage of the digital attendance system indicates that they do not need to undergo this system at the time of their training period at this Centre. They have to present in person in the classroom before the class is started and they also have to put their signature on an attendance sheet provided by the Course Management Team.

Regarding the 100 faculty members and staff interviewed, all of them are fully aware of the digital attendance system. The predominant factor attributed to knowing this system is that all faculties and staff are compelled to use a digital attendance system either scanning their fingers or tapping their ID card.

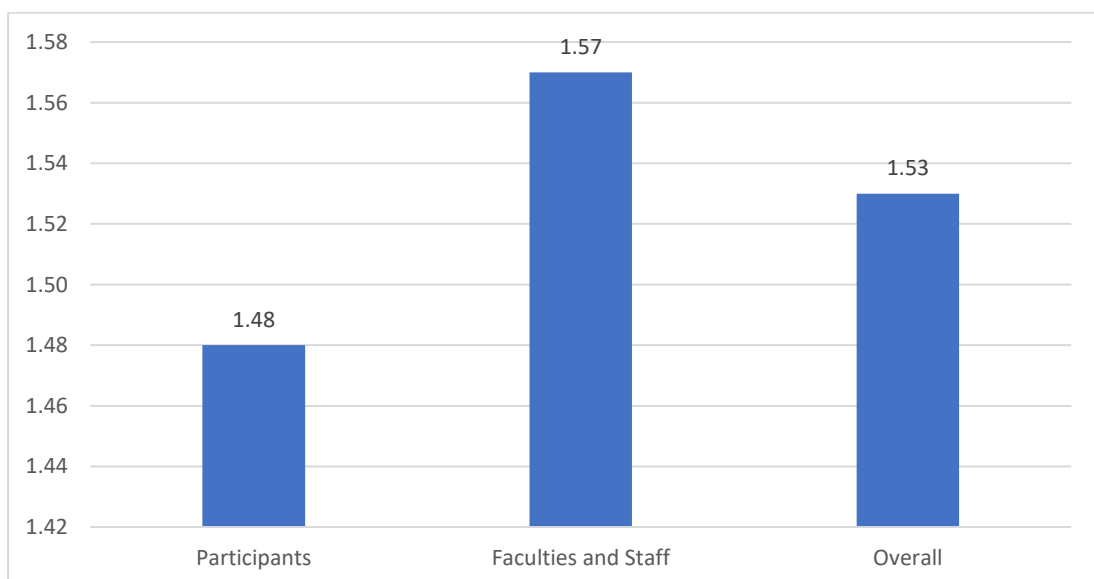
Figure 44: Percentage Distribution of Stakeholders' Awareness on Digital Attendance System



4.2.5.2 Digital Attendance System's Contribution to Discipline

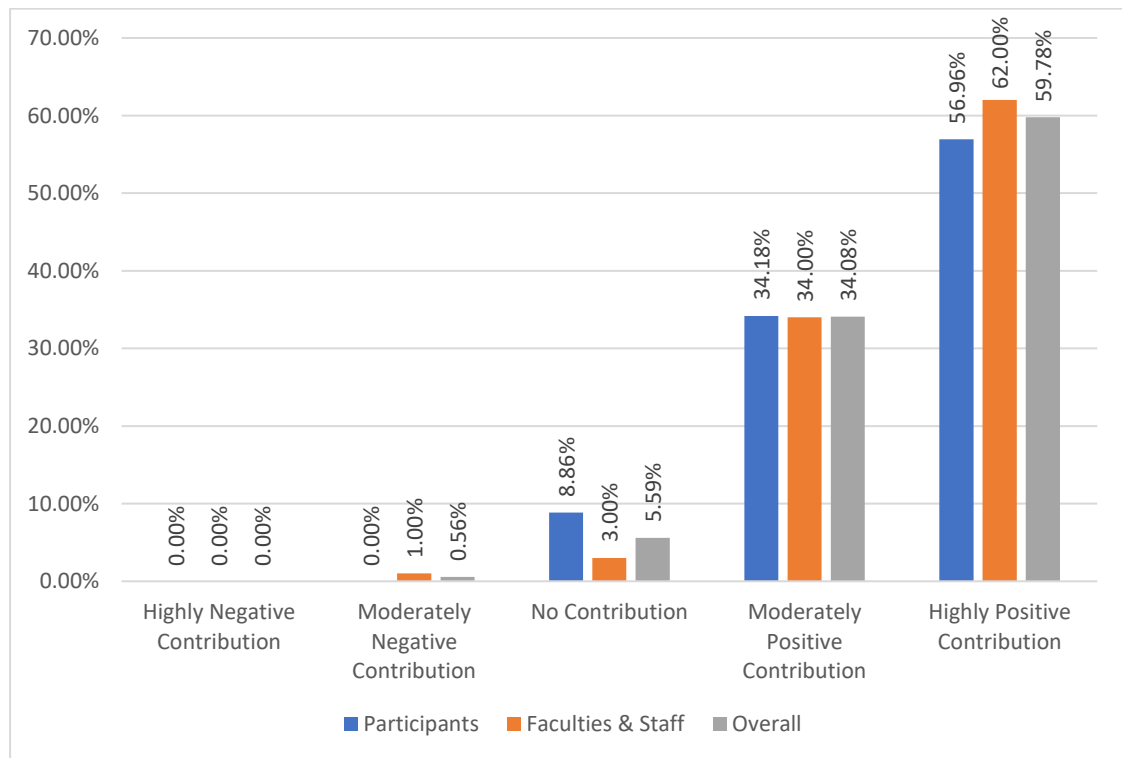
The respondents were asked about the digital attendance system, one of the digitization initiatives of BPATC, and its contribution to the discipline. The contribution score average shows that this digitization initiative has significant contribution to ensuring the discipline of the organization. Participants' contribution score of 1.48 and faculty & staff's contribution score of 1.57 proclaim that most of the respondents have agreed that the digital attendance system enhances the obedience of the respondents towards the rules of the organization.

Figure 45: Digital Attendance System's Contribution Score Average to Discipline



From the digital attendance system’s contribution to the discipline graph, it can be said that almost all of the respondents have agreed that digital attendance system have a moderate and highly positive contribution to ensure the organization's discipline. 57 percent of the participants and 62 percent of the faculty & staff have mentioned that digital attendance system have a highly positive contribution to the discipline, whereas 34 percent of the participants and faculty & staff have agreed that digital attendance system have a moderately positive contribution to the discipline. On the other hand, only 9 percent of the participants and 3 percent of the faculty & staff have found no contribution of the digital attendance system to discipline. In addition, 1 percent of the faculty & staff have mentioned that they think the digital attendance system has a moderately negative contribution to the discipline. The digital attendance system ensures the in-time presence of each of the participants and faculty & staff. This initiative has been taken to ensure the obedience of all the stakeholders of BPATC to the rules of the organization. And so, all the related stakeholders have taken this initiative very positively and they think this initiative will strengthen the discipline of the organization.

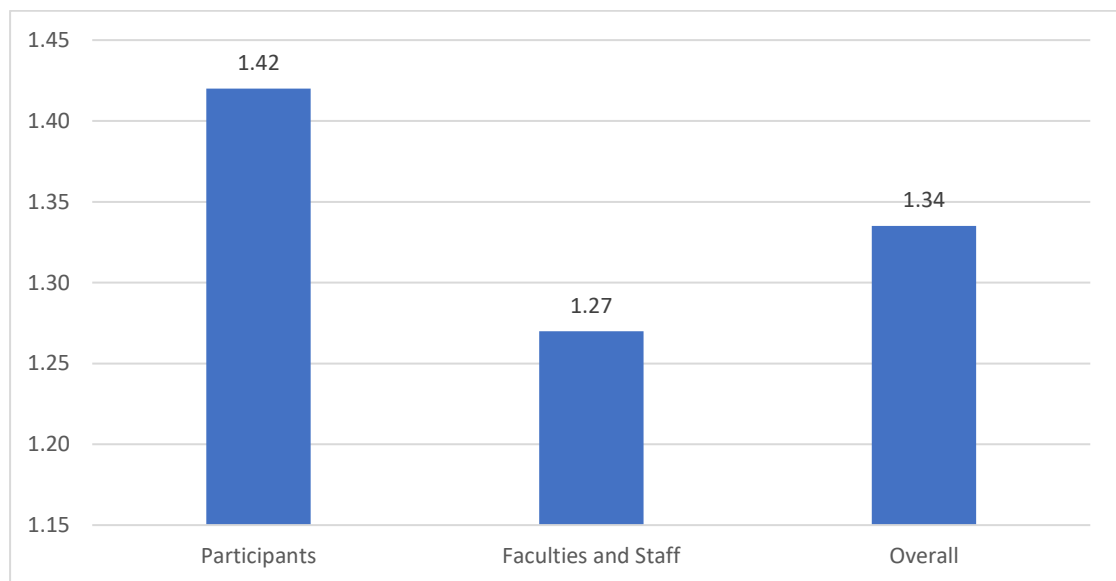
Figure 46: Perception of Digital Attendance System’s Contribution to Discipline



4.2.5.3 Digital Attendance System's Contribution to Integrity

The respondents were asked about the contribution of the digital attendance system to integrity and they were to find any positive or negative effect of the digital attendance system to ensure the integrity of the organization. Analyzing the contribution score, it can be inferred that all the respondents have a very positive notion of digital attendance system to integrity. Participants' contribution score of 1.42 and faculty & staff's contribution score of 1.27 proclaims that all the respondents have agreed that digital attendance system have significant positive contributions to integrity. According to their viewpoint, a digital attendance system has been initiated to ensure the discipline of the BPATC, ethical practices of the stakeholders, and consistency of the management. And all of them have agreed that the basic objective of the initiative has been fulfilled.

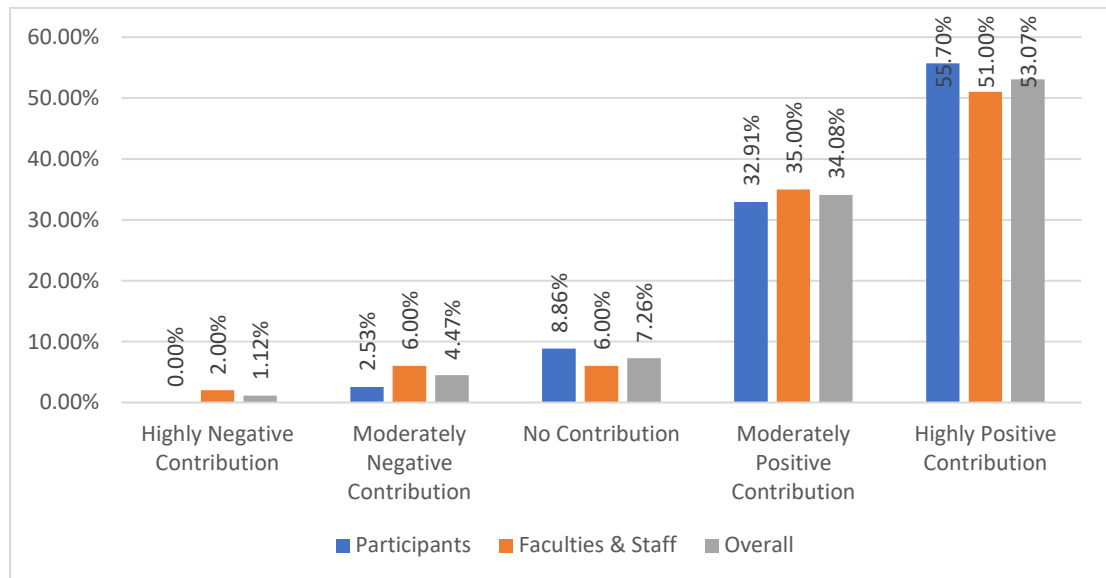
Figure 47: Digital Attendance System's Contribution Score Average to Integrity



The digital attendance system's contribution to integrity chart shows that 55.70 percent of the participants and 51 percent of the faculty and staff have agreed that the digital attendance system has a highly positive contribution to integrity, whereas 33 percent of the participants and 35 percent of the faculty & staff have found moderately positive contribution to integrity. 9 percent of the participants and 6 percent of the faculty and staff could not find any contribution of the digital attendance system to integrity. Around 6 percent of the respondents have mentioned that the digital attendance system has either a highly negative contribution or a moderately negative contribution to integrity. This insignificant portion of the respondents was negative because of their

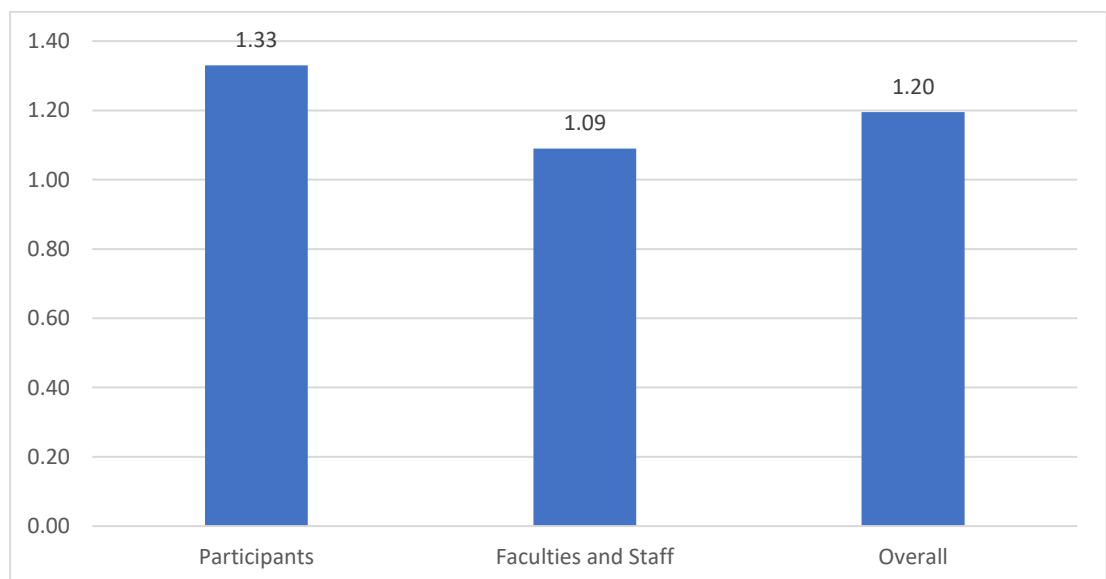
punctuality and consistency. As they are already regular, punctual, and consistent, they have found no or zero contribution of the digital attendance system to their existing practices.

Figure 48: Perception of Digital Attendance System's Contribution to Integrity



4.2.5.4 Digital Attendance System's Contribution to Innovation

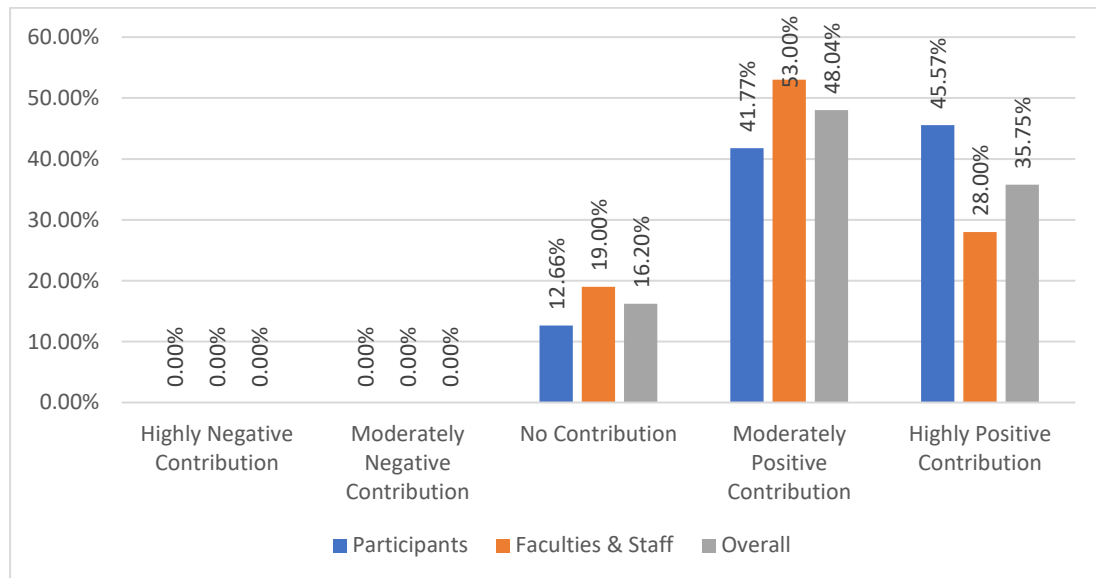
Figure 49: Digital Attendance System's Contribution Score Average to Innovation



None of the participants and faculties and staff think that the digital attendance system has a negative contribution to innovation. 41.7% and 45.57% of the participants think that it has a Moderately Positive Contribution and Highly Positive Contribution respectively to innovation in BPATC. Whereas 53.00% and 28% of the faculties and

staff think that it has a Moderately Positive Contribution and Highly Positive Contribution respectively to innovation. That is why the contribution score by the participants (1.33) is way higher than that of the faculties and staff (1.09).

Figure 50: Perception of Digital Attendance System's Contribution to Innovation

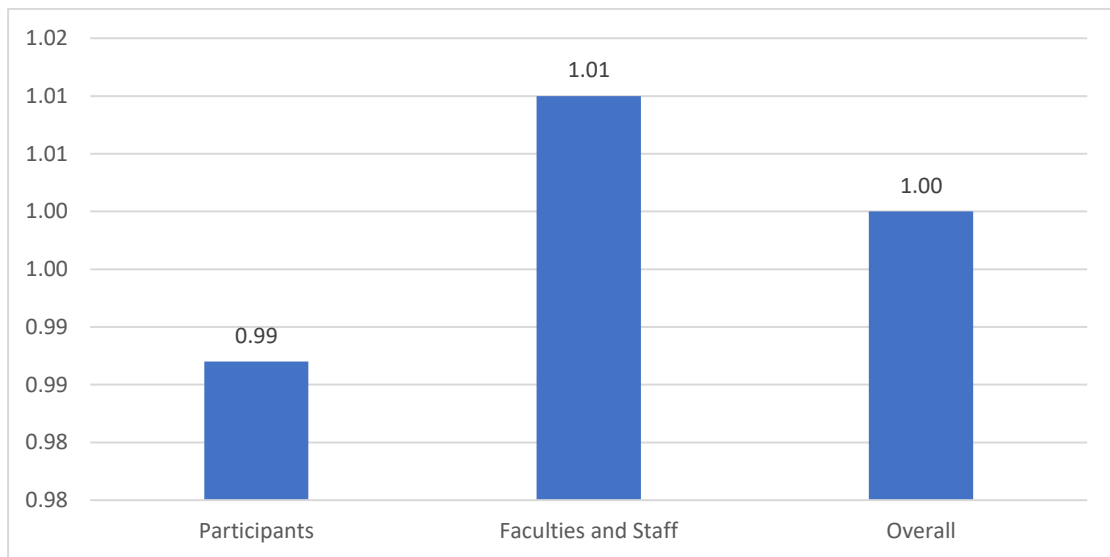


The digital attendance system itself demands updates like face recognition, retina scanning, and voice recognition, among other biometric techniques. This opens a vast arena to introduce innovative ideas in BPATC.

4.2.5.5 Digital Attendance System's Contribution to Learning for Result

The graph relating to the contribution of the digital attendance system to learning for results shows the score of the contribution of the digital attendance system to learning for result on a -2 to +2 scale. According to the opinion of the participant of core courses, the contribution score is 0.99 and according to the opinion of faculties and staff, the contribution score is 1.01. The overall contribution score is 1.00 which shows a positive contribution.

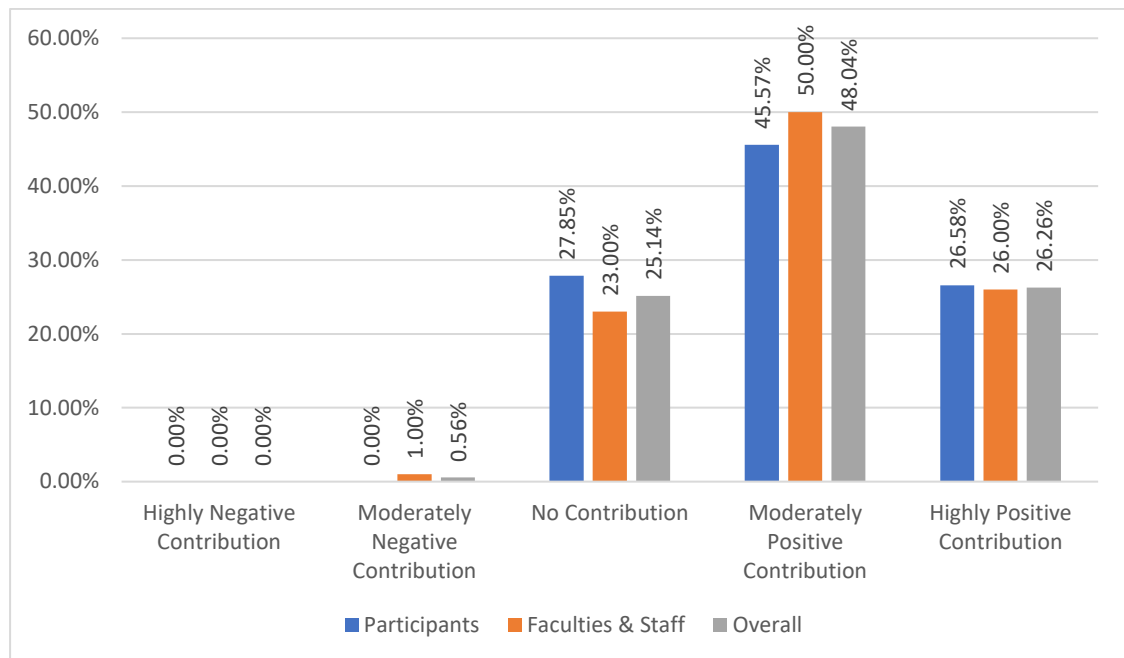
Figure 51: Digital Attendance System's Contribution Score Average to Learning for Result



The following chart represents how positively or negatively the correlation between the digital attendance system and learning for result is perceived by the respondents. None of the participants perceives the contribution of digital attendance is highly negative to learning for result while Only 0.56% of the total respondents mentioned a moderately negative contribution of digital attendance system to learning for result.

On the other hand, 25.14% of respondents mentioned that the online classroom system has no contribution to learning for result at BPATC. Furthermore, 48.04% of the respondents mentioned that there is a moderately positive contribution of the digital attendance system to learning for result at BPATC and 26.26% of respondents view the contribution as highly positive. The digital attendance system is mainly used to ensure timely attendance and the presence of the faculties and employees in BPATC. It is demonstrated to the participant so that they can use it in their workplaces which is an example of learning for result. From the above analysis, it can be inferred that two third of the respondents including participants, faculties ad staff perceives the contribution of the digital attendance system to learning for result positively.

Figure 52: Perception of Digital Attendance System's Contribution to Learning for Result

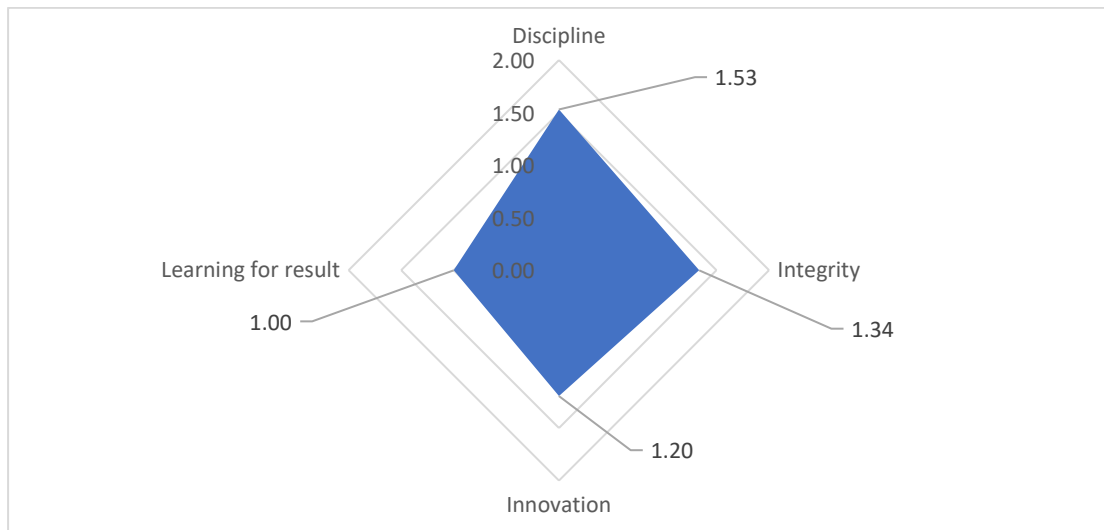


4.2.5.6 Digital Attendance System's Overall Contribution to Core Values of BPATC

Digital Attendance System's contribution to the discipline (1.53) and Integrity (1.34) is higher compared to the other systems' contributions to individual core values. From the qualitative data, it was found that the system's contribution to discipline and integrity would have been higher if it was used for the training participants as well. Though the system was imposed by the top management of BPATC, all the faculties and staff now understand its usefulness and cannot deny its contribution towards discipline and integrity.

During the face-to-face interviews, the training participants were asked to recommend innovative ideas to be implemented in BPATC. The most common innovative idea was to introduce a digital attendance system for the training participants as well. The training participants also can perceive the benefits of a digital attendance system.

Figure 53: Digital Attendance System's Contribution to Core Values

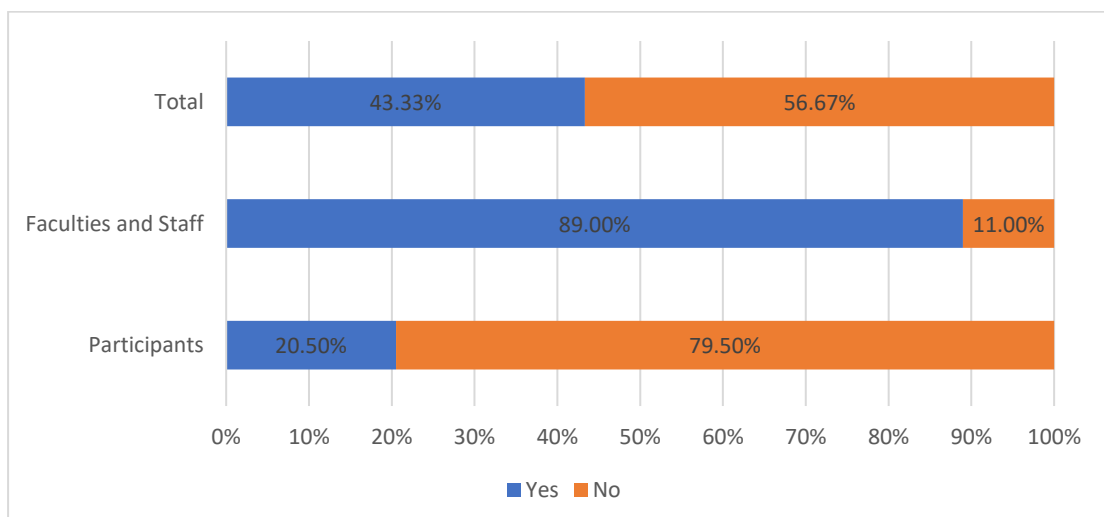


4.2.6 Contribution of E-Ticketing to Core Values of BPATC

4.2.6.1 Stakeholders' Awareness on E-Ticketing

The respondents were interviewed about their level of awareness of the E-Ticketing system of BPATC. Among the 200 course participants, only one-fifth which is 20.50% knew about the E-ticketing system. In terms of the 79.50% of participants who were not aware of this system, in response to their lack of awareness, they said that they do not have to use this system in any case of seeking services from BPATC. Whenever they need to use transport, they inform the Course Management Team (CMT) in due process and the CMT arranges it by issuing requisition to the concerned officials. Those who are conversant with this system said that they have heard about it from the faculty members in their informal conversations.

Figure 54: Percentage Distribution of Stakeholders' Awareness on E-Ticketing System

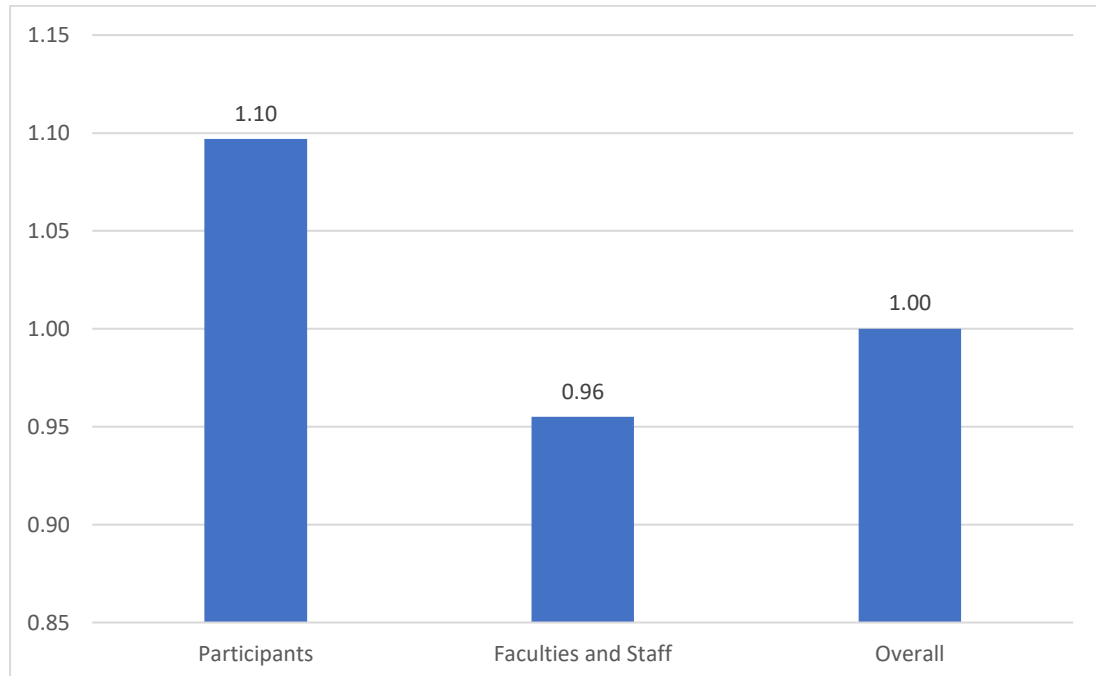


Among the 100 faculties and staff interviewed, 89% of this group knew about the E-Ticketing system. The reason behind almost one-tenth of the faculties and staff not being conversant with the E-Ticketing system is that there might have been some newly recruited staff as stated by the KII respondents. Overall, out of the total 300 interviewees, 56.67% are not aware of the existence of the E-Ticketing system in BPATC.

4.2.6.2 E-Ticketing's Contribution to Discipline

The respondents were to find any positive contribution of the E-Ticketing system to discipline and they are satisfactorily known about the E-Ticketing system. While finding the contribution most of the respondents have given the opinion that the E-Ticketing system has a moderately positive contribution to discipline. 1.1 of the contribution score from participants state that they think that the E-Ticketing system has a positive impact on the discipline. Faculties and staff have a contribution score of 0.96 and this score shows that the E-Ticketing system has a moderately positive contribution to ensuring order in the organization.

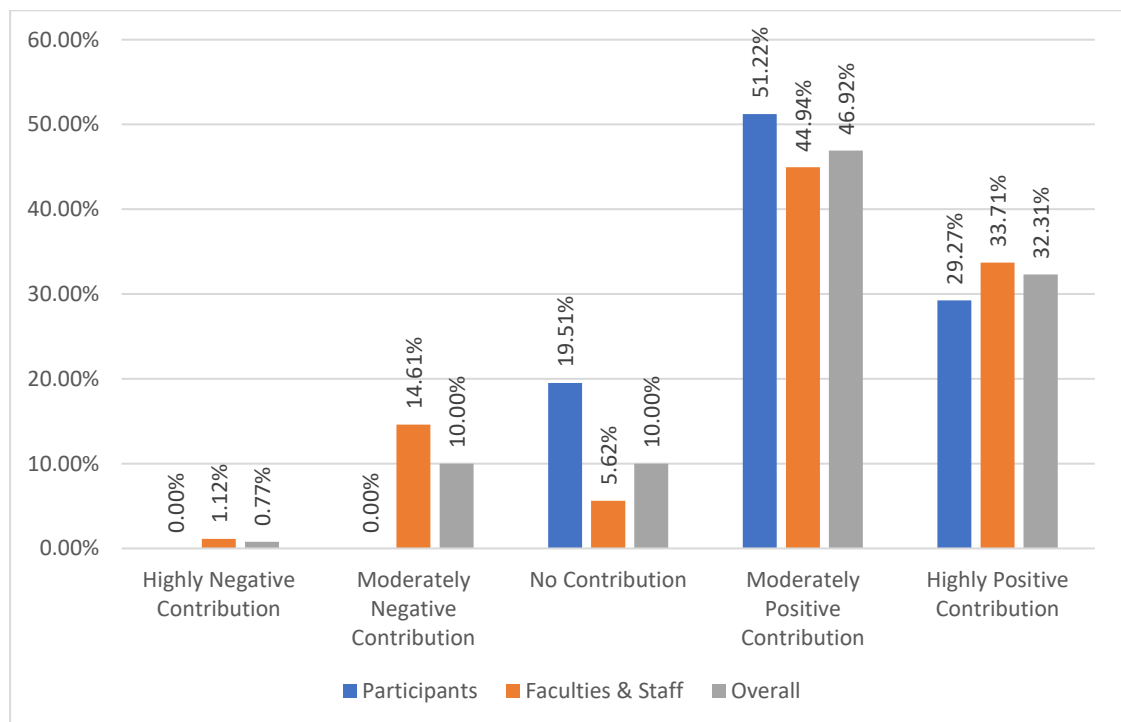
Figure 55: E-Ticketing System's Contribution Score Average to Discipline



Analyzing E-Ticketing's contribution to the discipline chart, it is vivid that most of the participants (51.22 percent) and 45 percent of the faculty and staff accept a moderately positive contribution of the E-Ticketing system to discipline. 29.27 percent of the participants and 34 percent of the faculty and staff have agreed that the E-Ticketing

system has a highly positive contribution to the discipline. In this digitization initiative, a different scenario has also been found. 20 percent of the participants actually have found no contribution of the E-Ticketing system to discipline because almost every time they need a car facility, they get that from their course management team and so they have found no contribution of E-Ticketing system to discipline. Internal stakeholders of BPATC have accepted the system very well and they are also satisfied with the service because they think that this initiative reduces their time and also ensures the cashless transaction. Nevertheless, 15 percent of the faculty and staff have mentioned that the E-Ticketing system has a moderately negative contribution and 1.12 percent are in favor of a highly negative contribution to discipline.

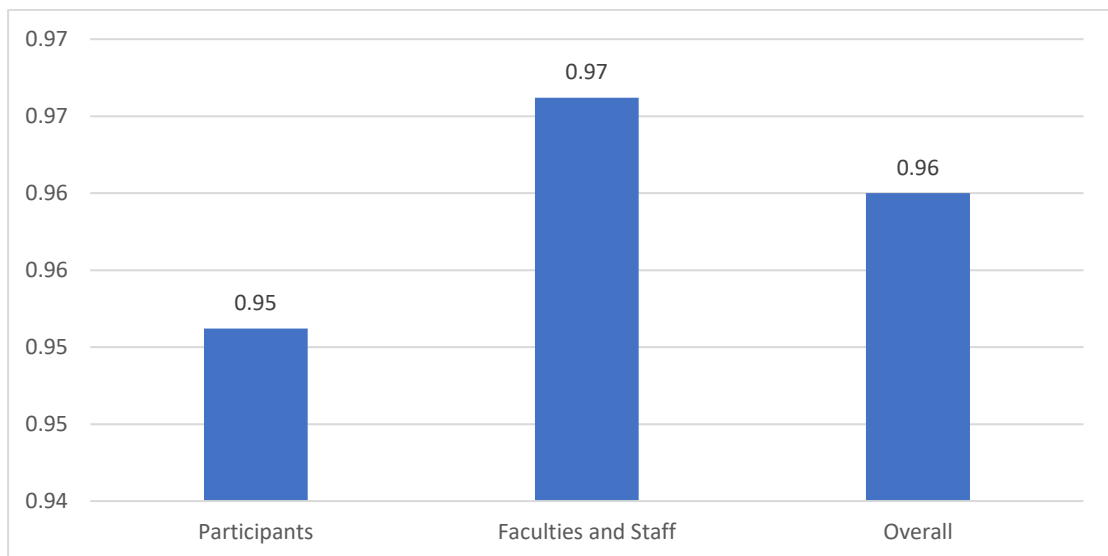
Figure 56: Perception of E-Ticketing System's Contribution to Discipline



4.2.6.3 E-Ticketing's Contribution to Integrity

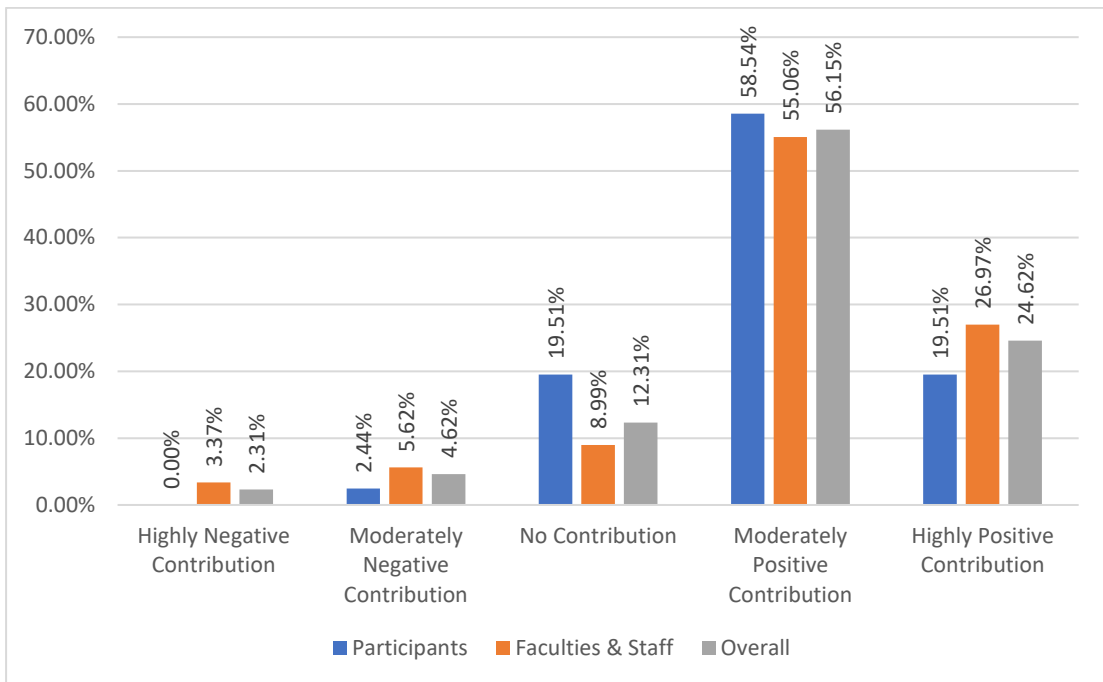
The respondents were asked about the E-Ticketing system and its contribution to ensuring the integrity of the organization. A contribution score average of 0.95 for participants and .097 for faculty and staff infer that both of the respondents are positive about the E-Ticketing system initiative and its impact on integrity but the intensity seems moderate. Meanwhile, many of the respondents are unaware of this initiative and so the intensity of the contribution of the E-Ticketing system to integrity seems moderate.

Figure 57: E-Ticketing System's Contribution Score Average to Integrity



From the above graphic, it can be concluded that most of the respondents, 59 percent of the participants and 55 percent of the faculty and staff, are in favor of the proposition that the E-Ticketing system has a moderately positive contribution to integrity. 19.51 percent of the participants and 27 percent of the faculty and staff strongly believe that the E-Ticketing system initiative has a highly positive contribution to integrity. About 20 percent of the participants and 9 percent of the faculty and staff have found no contribution of the E-Ticketing system to integrity whereas almost 7 percent of the participants and faculty and staff have stated that they have found either highly negative or moderately negative contribution of E-Ticketing system to integrity. Among all the respondents, only around 57 percent of them are aware of this initiative and because of this reason, they either find negative or no contribution of this digitization initiative. But among the known respondents, most of them seemed very positive about the outcome of this initiative and they suggest some structural changes to make this initiative well-fitted with the existing structure of BPATC.

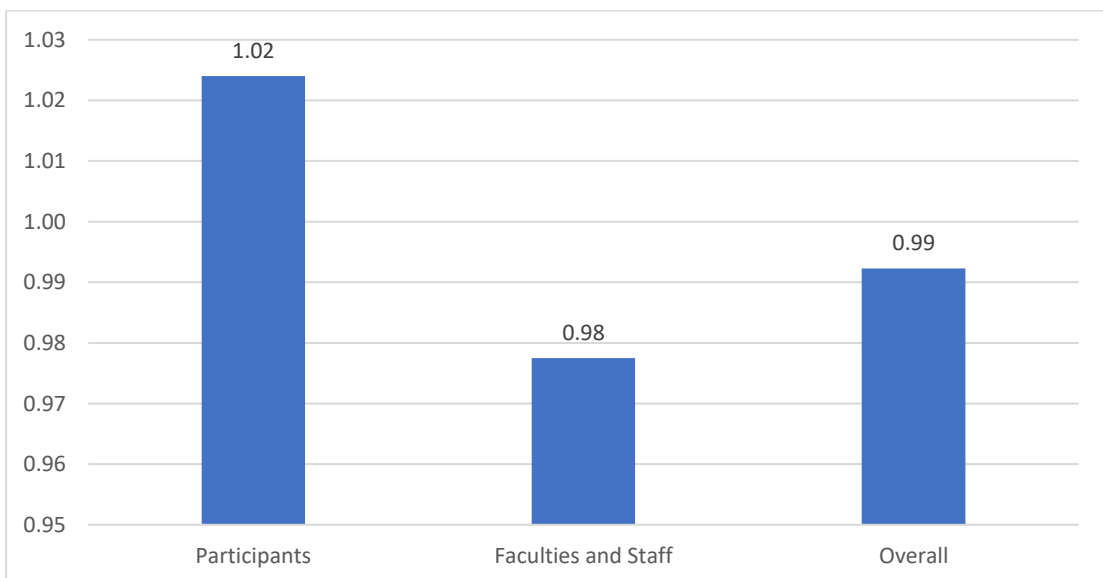
Figure 58: Perception of E-Ticketing System's Contribution to Integrity



4.2.6.4 E-Ticketing's Contribution to Innovation

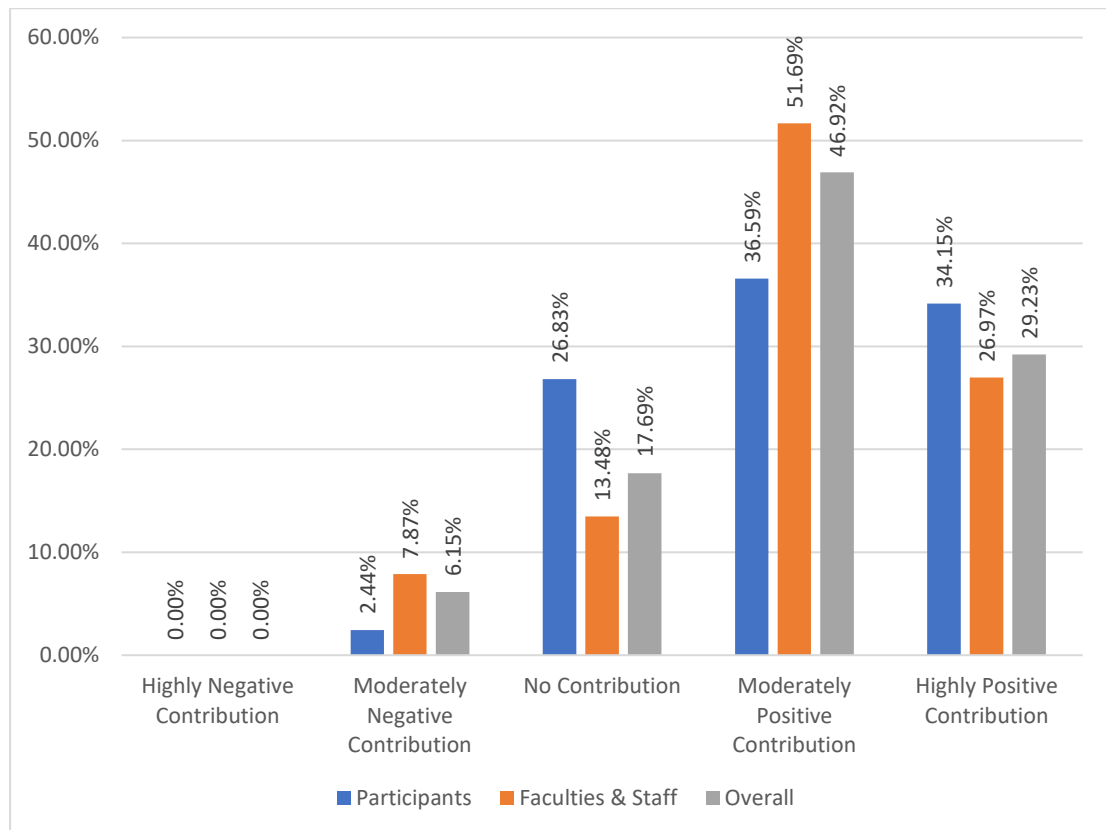
As the participants are not users of the E-ticketing system, their perception of the E-ticketing system is almost equally (one-third) distributed among No Contribution, Moderately Positive Contribution, and Highly Positive Contribution. More than half of the faculties and staff think that the E-ticketing system has a Moderately Positive Contribution to innovation. The overall contribution score of E-ticketing is 0.99 which almost accurately indicates Moderately Positive Contribution.

Figure 59: E-Ticketing System's Contribution Score Average to Innovation



Many of the interviewees provided ideas for introducing an upgraded payment system. Some of the interviewees told about introducing a single card for identification, payment, and all other purposes in BPATC. E-ticketing is the first digital payment system in BPATC. It has made the faculties and staff used to with ‘Touch and Go’ payment system and created a demand for a more sophisticated one.

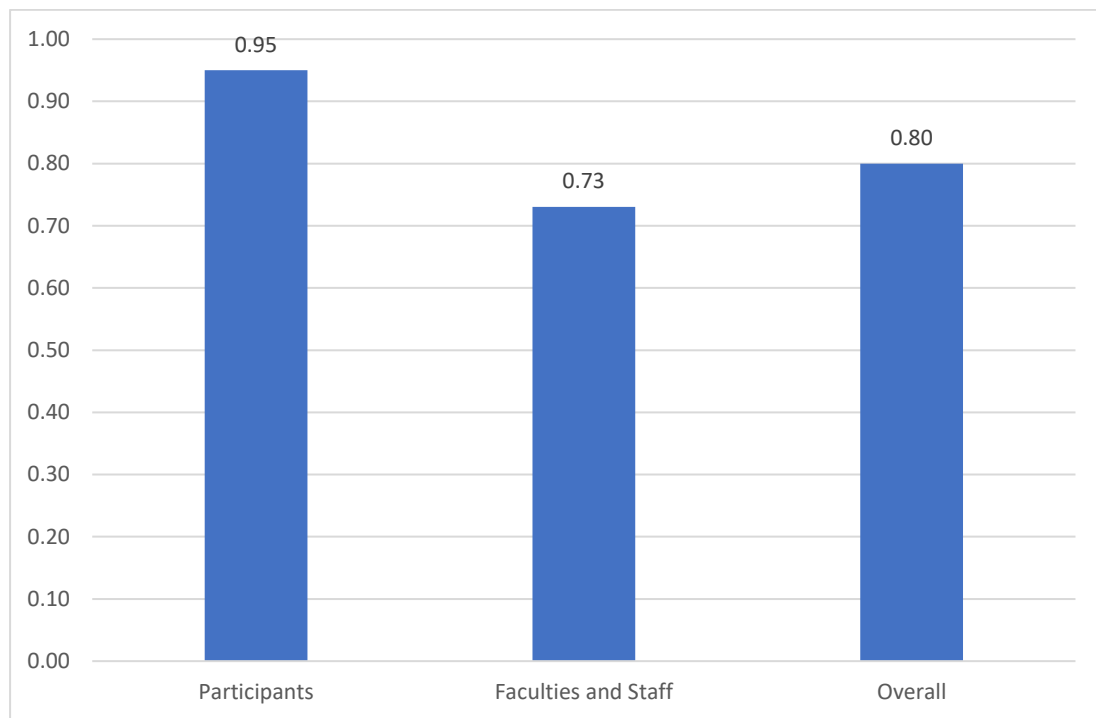
Figure 60: Perception of E-Ticketing System’s Contribution to Innovation



4.2.6.5 E-Ticketing’s Contribution to Learning for Result

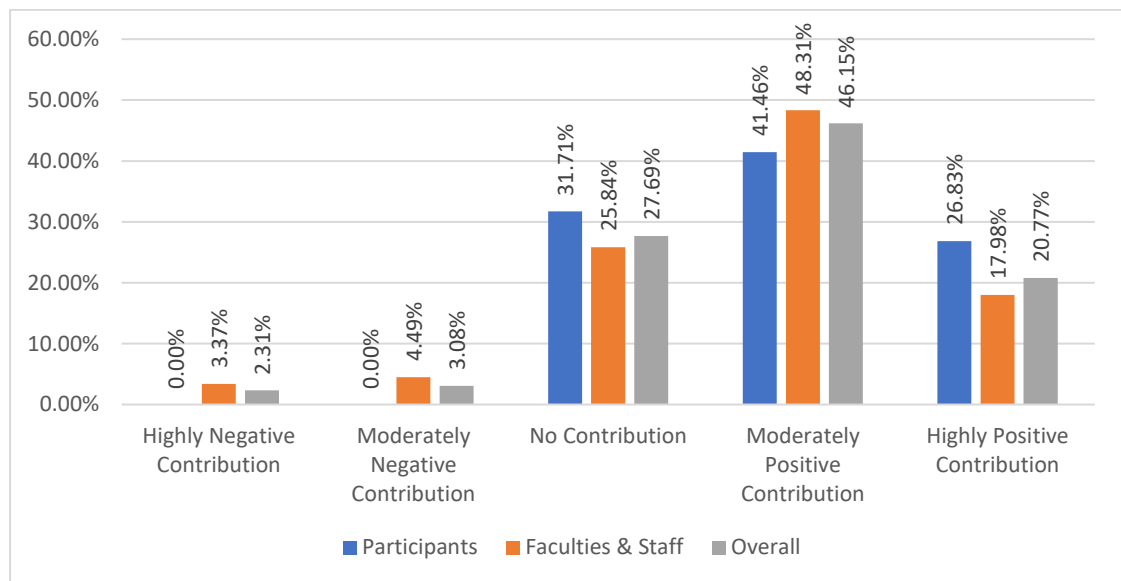
The graph relating to the contribution of the Clinic Management system to learning for results shows the score of the contribution of the E-ticketing system to learning for result on a -2 to +2 scale. According to the opinion of the participant of core courses, the contribution score is 0.95 and according to the opinion of faculties and staff, the contribution score is 0.73. The overall contribution score is 0.80 which shows a positive but less significant contribution.

Figure 61: E-Ticketing System's Contribution Score Average to Learning for Result



The following graph describes the opinion of respondents regarding how the E-ticketing system is contributing to the value of 'learning for result' of BPATC. Only a few respondents (2.31%) opined that the E-ticketing system has a moderately negative contribution and 3.08% opined highly negative contribution regarding the contribution of the E-ticketing system to learning for result. 46.15% of respondents opined that the E-ticketing system has a moderately positive contribution to learning for result. Moreover, 20.77% of the respondents mentioned that the contribution of the E-ticketing system is highly positive. On the other hand, 27.69% of respondents mentioned that the E-ticketing system has no contribution to upholding the value of 'learning for result'. The qualitative data collected through KIIs and FGDs reveals that due to mechanical faults and financial issues the E-ticketing in vehicles is not working and the overall process is not simplified. As a result 27.69% of respondents may perceive it as not having any contribution to learning for result.

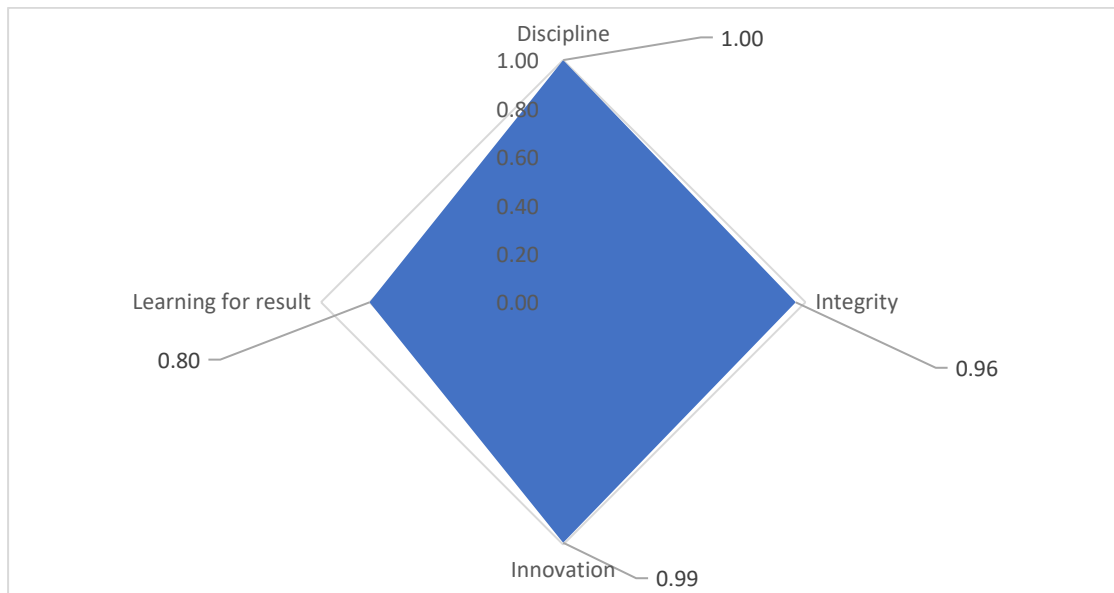
Figure 62: Perception of E-Ticketing System's Contribution to Learning for Result



4.2.6.6 E-Ticketing's Overall Contribution to Core Values of BPATC

The purpose of E-Ticketing was to ensure that discipline and integrity are maintained in cases of petty cash transactions. It has to some extent fulfilled its purpose. The contribution scores of this system to discipline and integrity are 1.00 and 0.96. It is not much high considering that upholding these two core values was the rationale behind introducing this system. Qualitative data reveals that its contribution score would have been higher if the system was functioning consistently. Often the hardware of this system malfunctions and the users have to get back to the traditional cash transactions. From the interviews, it was found that some of the users find it very annoying as they never know which day it will work and which day it will not. Furthermore, the system is not user-friendly as the top-up of cards requires manual labor and a visit to the finance section and there is no system to interlink with bank cards, Bkash and Nagad accounts, etc.

Figure 63: E-Ticketing System's Overall Contribution to Core Values



4.3 Key Findings

- Described Core Values of BPATC:
 - Discipline
 - Integrity
 - Inclusiveness
 - Team Spirit
 - Professionalism
 - Innovation
 - Learning for Result
- Shared Core Values of BPATC
 - Discipline
 - Integrity
 - Innovation
 - Learning for Result
- Digitization Initiatives in BPATC:
 - Enterprise Resource Planning (ERP) System
 - Library Automation System
 - Online Classroom System
 - Clinic Management System
 - Digital Attendance System
 - E-Ticketing System
- Awareness regarding digitization initiatives:
 - 100% of the both group of respondents are aware of ERP system
 - 82% of the total respondents have acquaintance with library automation system. Participants are more aware (89.50%) than faculty and staff group (67%)

- 86.7% of the total respondents know about online classroom system
- Two third of the total respondents know about clinic management system. Only 11% of the faculty and staff group do not know about this system while a significant percentage of participant group i.e. 44.50% does not know about the system.
- Due to daily use 100% of the faculty-staff group are aware of digital attendance system while only 39.50% of the participants are aware of this system.
- 89% of faculty and staff and only 20% participants are aware of e-ticketing system.
- ERP is the only digitization initiative in BPATC of which all the study population are aware of.
- Faculties use ERP more than the participants.
- ERP system positively contributes to the practice of four shared values of BPATC. It is also found that the contribution of ERP is less significant to learning for result in comparison to the other three values. Furthermore, faculty and staff think more positively about contribution of ERP to core values.
- BPATC library has lost its appeal as the Centre of learning. Several participants of core courses have completed their course without issuing a single book from the library.
- Manual services are still provided in the library.
- Library automation system contributes positively to the four shared values. It is also revealed that library automation has more contribution to discipline in comparison to other three shared values.
- Library automation system has the lowest contribution score to core values among the four identified shared core values. That indicates that the automation system has failed to revitalize the library as a Centre of learning.
- The faculties and staff of BPATC have identified online platforms like Zoom and Cisco Webex as online classroom system. However, many participants of core courses like the Foundation Training Course have refused to recognize these online platforms as online classroom system. They believe that a system where all types of classroom facilities such as classroom materials, handouts, power point presentations, class video recordings, reading lists, etc. are stored in a single platform will be regarded as an online classroom.
- The contribution of the online classroom system is insignificant in respect of discipline, integrity, and learning for result scoring of 0.11, 0.21 and 0.53 respectively (out of a scale -2 to +2). Participants of core courses believe that the online classroom system has made it easier for them to deviate from a disciplined class.
- Among all the digitization initiatives in BPATC, the online classroom system has the lowest contribution scores to the shared core values.

- The clinic management system was not developed on a web-based platform and that is why it has zero potential to be integrated into a single web-based platform that serves all the digitization demands of BPATC.
- Almost half of the participants do not know about the existence of clinic management system.
- Clinic management system has significant contribution to discipline and integrity while low contribution to learning for result and innovation.
- Only the faculties and staff use the digital attendance system.
- Participants of the core courses demand to have a digital attendance system. They are no longer satisfied with the signing of an attendance sheet on every session.
- Digital attendance system has very significant contribution to discipline scoring 1.53 out of scale -2 to +2. Digital attendance system also contributes positively to integrity, innovation and learning for result.
- Course participants do not use the E-ticketing system.
- Contribution of e-ticketing is positive to the four shared values but not very significant. Qualitative data reveals the reason of low contribution as follows:
 - Malfunctioning of the system interrupt consistency
 - Manual top up system
 - Not interlinked with bank cards, Bkash, Nogad , etc.
- BPATC introduced several cards to the stakeholders. The stakeholders prefer one single card.
- Contribution Scores at a glance:

	Discipline	Integrity	Innovation	Learning for Result
ERP	1.29	1.22	1.10	1.01
Library Automation System	1.25	1.17	1.20	1.07
Online Classroom System	0.21	0.11	0.94	0.53
Clinic Management System	1.12	1.11	0.89	0.71
Digital Attendance System	1.53	1.34	1.20	1.00
E-Ticketing	1.00	0.96	0.99	0.80

5. Recommendation and Conclusion

5.1 Recommendations

- The interviews with course participants found that there is a strong demand for the implementation of a digital attendance system from the participants. It will ensure that less paper will be used in the classroom, and it will take less time to collect the signatures from the participants.
- The interviewees mentioned that a telemedicine system can be developed for the participants of the core courses where the participants can consult with a pool of experts. A schedule can be developed for consultation with individual experts to make the system work.
- A mobile app can be developed for the core course participants where they can use all the features of ERP. It will help to make ERP more accessible and user-friendly.
- Many of the participants refused to recognize the ZOOM platform/ CISCO Webex platform as an online classroom system. There is a demand for a functional online classroom system where students can have their session plans, reading materials, recorded sessions, assignment submission portals, and feedback submission options, among others.
- The clinic management system was developed on a non-web-based platform. That is why, it cannot be integrated with the ERP system or any other web-based platform. There is a demand from the users for a web-based clinic management system. BPATC should consider re-establishing the clinic management system on a web-based platform.
- The participants and the faculties and staff have to use several cards for several purposes. Carrying several cards is troublesome. That is why, BPATC can consider integrating all these cards and provide a single card that can serve the purposes of the existing cards.
- The E-Ticketing System has to be regularly maintained. In addition to that, BPATC should consider establishing a system where the payment card can be topped up using mobile wallets and bank cards.

Table 3: Recommendation Matrix

	Recommendation	Tasks to be Performed	Role	Expected Results
1.	Introducing Digital Attendance for the Participants	Developing a Digital Attendance System for Classrooms	IT personnel/ Vendor	Automated attendance report

		Registering participants with their fingerprints/ retina/ face		Less paper usage in classroom Less time consumed to sign attendance sheet
2.	Introducing Telemedicine System	Developing a pool of experts	Medical Officer	Medically advised healthy participants
		Scheduling periodical sessions with experts	Course Management Team	
3.	Developing an integrated mobile app for participants	Creating a mobile app for ERP system	IT personnel/ Vendor	User friendly ERP system
				More usage of ERP
				More frequent evaluation
4.	Introducing online classroom system (Not Zoom/Cisco usage)	Incorporating session plan	Course Management Team	Planned curriculum
		Incorporating reading list and materials	Module Directors	Available reading materials
		Recording sessions	IT personnel	Available sessions for future reference
		Developing system for online submission	IT personnel/ Vendors	Tracking submission time and restricting late submission

		Providing online evaluation of the submission with specific feedback	Evaluation Wing/ Module Directors	Informed participants about room for improvements
		Providing cumulative scores	Evaluation Wing	Increased Transparency
5.	Developing web-based clinic management system	Duplicating existing kiosk based system	IT Personnel/ Vendor	User friendly clinic management system
		Incorporating the existing system to ERP		
6.	Introducing a single card for all purpose	Combining all the cards feature in one	IT/ Administration	Reduce the cost and time of multiple card issuing and user friendly
7.	Interlinking credit/debit cards, bkash, Nagad with payment system	Integrating credit/debit cards, bkash, Nogod payment option in the system	IT/ Finance	Saves time for manual top up and become user friendly
8.	Ensuring proper maintenance of e-ticketing systems	Regular monitoring of hardware and software used for e ticketing	IT/Logistics	Will keep the system uninterrupted

5.2 Conclusion

The research focused on the extent of the contribution of the digitization initiative for BPATC to its shared core value. 200 course participants and 100 faculties & staff were interviewed regarding the contribution of digitization to four shared values. Among all the digital initiatives six of them are being successfully implemented by BPATC and those initiatives are Enterprise Resource Planning (ERP) System, Library Automation System, Online Classroom System, Clinic Management System, Digital Attendance System, E-Ticketing System. Transport Management System (TMS), Store Management System (SMS), Dormitory Management System (DMS), Accounts & Financial Management System (A&FMS), and Performance Management Information System (PMIS) are some major functions of ERP and respondents were asked about ERP after explaining all the functions. library automation system includes membership management, book issue, and submission system, book cataloging, and online search system, among others. It has been found that the contribution of ERP to discipline, integrity, innovation, and learning for result seems significant and most of the participants (approximately 75 percent) consider that each of the ERP initiatives like plagiarism checker, transportation, store, and ICT have a highly positive or moderately positive contribution to the shared core values of BPATC. Library automation system includes membership management, book issue, and submission system, book cataloging, and online search system, among others, and most of the participants (82 percent) are used to the services provided by BPATC but many of the staff seem not well aware of the library automation. Library automation significantly contributes to the core values mostly discipline, integrity, and innovation but the value of learning for result shows moderately significant. It has also been studied whether online classroom initiatives have any contribution to the core values or not. And according to the respondents, the online classroom system has a very insignificant contribution to the discipline, integrity, and learning for results though respondents posit that the online classroom system has a positive contribution to innovation. Respondents were asked about the contribution of the clinic management system to the core values of BPATC. The service recipients have to be registered to this system and this system tracks all the medicines issued by the clinic to the recipients. 55 percent of the course participants actually know about the clinic management system because many of them had not taken any services during the participation period. On the other hand, almost 90 percent of

the faculty and staff are well known about the clinic management system. After the analysis of the response, it can be concluded that the clinic management system has a significantly positive contribution to discipline and integrity but a moderately positive contribution to innovation and learning for result. Though the system incorporated should have a highly positive contribution to innovation, practically the result shows a less positive contribution. After having focused group discussions, it has been revealed that the system not being well synchronized with the programming language, could not incorporate all the features of the clinic management system into ERP. The digital attendance system is one of the digitization initiatives taken by BPATC. All the staff and faculties of BPATC are to ensure attendance through this system but course participants are not supposed to ensure their attendance through this system because of their physical presence in the classroom. Almost 60 percent of the course participants are not aware of the digital attendance system because of their in-person class presence but all the faculty and staff are well familiar with this digitization initiative. Among the respondents, 60 percent of them agreed that the digital attendance system has a highly positive contribution to the discipline and 53 percent of the respondents mentioned that this initiative has a highly positive contribution to integrity. As many of the participants are not aware of this initiative, 48 percent of them have agreed that the digital attendance system has a moderately positive contribution to innovation and learning for results. For ensuring better transport services and to reduce the hassles of petty cash transactions, BPATC has initiated e-ticketing services through any of the transport facilities users will be able to pay digitally and check the details of the trip. Usually course participants do not take any transport by their own name rather they inform their course management team to ensure the transport facility and so they are not well aware of this service. Only 20 percent of the course participants know about the e-ticketing service and 90 percent of the faculty and staff are acquainted with this system. 52 percent of the participants and 45 percent of the faculty and staff respond that e-ticketing services have a moderately positive contribution to the discipline and 32 percent of the respondents mentioned having a highly positive contribution to the discipline. After analyzing the response, it is clear that the contribution score of e-ticketing service to integrity seems low. 56 percent of the respondents have mentioned having a moderately positive contribution of e-ticketing service to integrity and 12 percent of the respondents have found no contribution. But 76 percent of the respondents agreed that e-ticketing services have either a moderately positive

contribution or a highly positive contribution to innovation. According to the respondents, the contribution of e-ticketing service to learning for result shows an insignificant score. 66 percent of the participants have mentioned having a moderately or highly positive contribution of e-ticketing service to learning for result whereas almost 30 percent of the respondents have found no contribution. Moreover, all the digitization initiatives taken by BPATC have moderate or highly positive contributions to the shared core values of BPATC. To conclude, it can be said that some of the initiatives have an effect on some particular core values while the other initiatives have an effect on other core values.

References

- Bell W. (2007). The impact of policies on organizational values and culture.
Retrieved from: <http://www.usafa.af.mil/jscope/JSCOPE99/Bell99> on 02-01-2022.
- Cingula, M. (1992). Organizacijska kultura v implementaciji poslovne strategije. In Organizacija, informatika, kadri, 11. posvetovanje organizatorjev dela. Portorož, Slovenia: FOV.
- Collins J. (1996). Aligning actions and values. Retrieved from: <http://leadertoleader.org/leaderbooks/121/summer96/collings.html> on 2-5-2022
- Davis, P., 2011. Social Exclusion and Adverse Incorporation in Rural Bangladesh: Evidence from a Mixed - Methods Study of Poverty Dynamics. SSRN Electron. J. <https://doi.org/10.2139/ssrn.1896135>
- Ellul, J. (1962). The technological order. *Technology and culture*, 3(4), 394-421.
- Harris, R.W., 2016. How ICT4D Research Fails the Poor. *Inf. Technol. Dev.* 22, 177–192. <https://doi.org/10.1080/02681102.2015.1018115>
- Karim, H.N., Mina, Q. and Samdani, G., 2011. Going digital: realizing the dreams of a digital Bangladesh for all. University Press Limited.
- Kenny, T. (1994). From vision to reality through values. *Management development review*, 7(3), 17–20.
- Mesner Andolšek, D. (1995). *Organizational culture*. Ljubljana, Slovenia: Gospodarski vestnik.
- Musek Lešnik, K. (2008). *Values, mission and vision of the company*. Koper, Slovenia: Faculty of Management.
- Pfieffer, W. J., Goodstein, L. D., & Nolan, T. M. (1985). *Understanding applied strategic planning: A manager's guide*. San Diego, USA: University Associates Inc.

- Rahman, S.M.A., 2016. Prospects of PPP in Expanding ICT Services in Rural Bangladesh: A Case of Union Digital Centre. *Int. J. Econ. Finance* 8, 163. <https://doi.org/10.5539/ijef.v8n2p163>
- Roztocki, N., Weistroffer, H.R., 2011. Information technology success factors and models in developing and emerging economies. *Inf. Technol. Dev.* 17, 163–167. <https://doi.org/10.1080/02681102.2011.568220>
- Sey, A., 2015. There When You Need It: The Multiple Dimensions of Public Access ICT Uses and Impacts. *Inf. Technol.* 11, 16.
- Simmerly, R. G. (1987). *Strategic planning and leadership in continuing education*. San Francisco, USA: Jossey-Bass Publishers.
- Sundberg, L. (2019). *The Relation Between Digital Technology and Values: Thinking Through Multiple Technologies* (Doctoral dissertation, Mid Sweden University).
- Svetlik, I. (2004). Values in organizations. In B. Malnar & I. Bernik (Ed.). Ljubljana, Slovenia: Faculty of Social Sciences.
- Titov, Eneken & Umarova, Ljudmila. (2017). Impact of Real and Propagated Values on Organisational Success. [10.5772/intechopen.69460](https://doi.org/10.5772/intechopen.69460).
- Toyama, K., 2011. Technology as amplifier in international development, in: *Proceedings of the 2011 IConference on - IConference '11*. Presented at the 2011 iConference, ACM Press, Seattle, Washington, pp. 75–82. <https://doi.org/10.1145/1940761.1940772>
- Ullah, M.S., 2016a. Empowering rural communities through telecentre connectivity: experience of the Union Information and Service Centres in Bangladesh. *Media Asia* 43, 112–125. <https://doi.org/10.1080/01296612.2016.1205834>
- Ullah, M.S., 2016b. ICTs and Empowering Rural Women: The Info-Lady Entrepreneurship Experience in Bangladesh.
- Zunguze, M., 2007. Do ICTs really empower rural women? Interrogation of a Zimbabwean community ICT project 10.