A Study of Technology Acceptance Model (TAM) In Understanding the Efficacy of HRIS Tools in B-Schools"

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ABSTRACT: *Global usage of automated system in all fields has remarkably increased in the past decades. To understand the extensive usage of the Information system, the study is undertaken where the Technology Acceptance Model (TAM) is used to see the extent to which an Information System (IS) is able to make any HR routine activity in the institution to be automated; whereby, the information obtained is effective and reliable. The study undertook in this article focuses on the reliability test in order to test the reliability of the scale and also the correlation test in order to find the rate of correlation between the various components of the TAM model – Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude towards change (ATU) and Behavioral Intention towards use (BIU). The study indicated that the null hypothesis is accepted where there is significant positive change in the Perceived Ease of Use, Attitude of the User and the Behavioral intention of the user towards using the HRIS tool in any organization. This led to understanding from the study that there is a very high rate of effectiveness in the usage of HRIS tool in any institutions using, which is proved using the TAM model.*

Keywords: Technology Acceptance Model (TAM), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude towards use (ATU), and Behavioral Intention towards Use (BIU), Information System (IS)

I. INTRODUCTION

Human Resource Information System (HRIS) is an application related to HR − database which includes a customized data of employees in an organization. HRIS is a system not only used to acquire, store, handle, analyze sort, distribute, relevant information concerning human resources in an organization, but also includes individuals, procedures, and policies, necessary data to manage the HR function and deal with the behavioral aspect of an individual. This has lead to inexorable development of HRIS usage. On the contrary, the situation is different when observed public sectors. Nicholas Aston Beadles II, Christopher M. Lowery, Kim Johns (2005) discusses about the impact of implementing HRIS tool in public sectors. The process of recruiting, hiring and training are done differently in public sectors unlike in private sectors: hence the utilization of HRIS tool in public sectors does not have a good and positive impact and hence not utilized to the fullest.

HRIS is an integrated tool between Human Resource Management (HRM) and Information Technology (IT). Anthony r. Hendrickson (2003) makes a mark in the various outstanding capabilities of the HRIS tool. This inception of this tool has led to information-based interactive and self services in the work environment. In order to concentrate more on the strategic enterprise of the organization, the HR department takes necessary measures to efficiently handle all the functions of the HR department. The new system shows dynamics of change in the organization. Today, the contemporary technology is serving to ensure the efficiency of HR functions. The growing need and utility of HRIS tools in organizations, the sophisticated usage of software in the department has led the HR in facing new challenges. However, the usage of HRIS tools in different organizations differs and is customized. These tools help the personnel to get the necessary information he/she needs, control this information in a timely way and customize it according to the need. Since this is an automated system, the data are readily available to generate any type of customized reports. These tools not only bring efficiency, but also effectiveness, attractive quality and gaining aggressive improvement. HRD is substituted by HRIS, which helps HR personnel to focus on providing quality information to enhance the decision making process. Peter B. Seddon, Sandy Staples, Ravi Patnayakuni, Matthew Bowtell (1999) defines a two-dimensional matrix for classifying IS Effectiveness measures. This two-dimensional matrix helps in providing a useful guide for conceptualizing effectiveness measurement in Information System Research.

II. BACKGROUND & THEORETICAL FRAMEWORK

Technology Acceptance Model (TAM) was first created by Davis (1989). Technology Acceptance Model (TAM) is an intention- based model developed specifically for predicting the user acceptance of Computer Technology [Maslin Masrom, 2007]. The application of attributes like Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are the predictors of the users' attitude and behaviour towards the technology

usage. Priyanka Surendran (2012), details about the various variables that affect the Perceived usefulness, Perceived ease of use, attitude towards use and behavioural change using the Technology Acceptance Model (TAM).
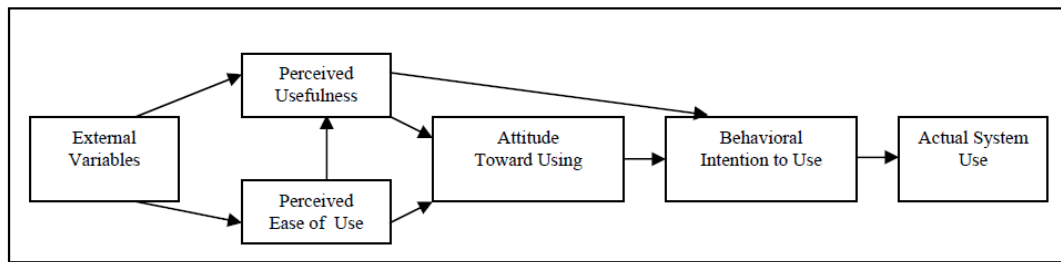

Figure 1: Technology Acceptance Model (Davis, 1989)

Figure 1 indicates how the PU and the PEOU are subjected to external variables and how they change the attitude and behavioural intention of use by the user. In TAM, the PU refers to the intensity of the usefulness of technology in the system. The PEOU refers to the ease of usage of technology which makes the user achieve targets with least effort. The External variable used here is the Trust.

It is also understood that most of the institution uses automated tools for the usefulness and the ease of use. There is a manual supplied and training is provided for the usage of the same. The personnel data of every employee and the students of the institution are computerised and automated. Almost in all the institutions, payroll and attendance monitoring is done through the automated tool or the Human Resource Information Tool (HRIS). Thereby, the usage of paper has reduced to a larger extent. The testing of skills like aptitude is done online which made the work much at ease. This automated tool helps the stake holders in providing feedback online – be it related to the kind of work or even the automated system itself. Asafo-Adjei Agyenim Boateng (2007) and Dr. Kenneth A. Kovach, Charles E. Cathcart Jr (1999), mentions the various components that are functional to Human Resource Information System (HRIS); the components include the Input, The Data Maintenance and the Output.

In addition, the automated tool helps in the strategic level managers in decision making. With the usage of Decision Support System (DSS), the top level managers are assisted in mainly in decision making. Even the performance appraisal done by every individual and the analysis of the same by the top managers are done through the technology implemented portal which made the system useful and at ease to use (PU and PEOU). The result also indicates that since the daily activity of the HR department is majorly taken care by the Information System (IS) tool, the major portion of their time can be utilized in the strategic decision making process. This is evident from the result that the percent of those who responded 'yes' much greater in most of the questions when compared to those who responded 'No'. From this it is inferred that the attitude towards the usefulness and the behavioural intention towards use (ATU & BIU) are more inclined towards the application and usage of the system. This very clearly proves the Technology Assistance Model (TAM) derived by Davis in 1989.

The study thus concludes that there is a major impact of the usefulness and ease of use of Information system tools towards the attitude and behaviour of the user. (1) The attitude of the user has changed and is more towards usage of IS tools in order to make things right at the first time. (2) The behavioural intention of the user is that the user searches for the tool to perform his task; whereby has made the work easier and effortless. This is the extent of effectiveness of IS tools in the Institution. Hence, the null hypothesis is accepted. Therefore, the Technology Acceptance Model (TAM) is highly accepted in measuring the effectiveness of the usage of Information Tool in the various activities of the institution. This study did not test full TAM. Continued studies will prove the usage of TAM to the fullest in the usage of Technology in daily activity. Further studies will also include the external factors that affect the effectiveness of the usage of IT tool.

III. METHODOLOGY

Technology Acceptance Model (TAM) is universally used to understand the acceptance and usage of various kinds of Information System. This is widely used in e-learning systems, online banking, online shopping, online booking and various other information systems to be added to the cart. This model majorly explains the user's behavior and attitude toward the Information System. For the study, a survey is made with a questionnaire posed to the users of HRIS tools from various B-schools across the country. The survey was made and data collected from the various HRIS users. The study was made to evaluate the measure of reliability and the correlation. Abdul R. Ashraf, Narongsak (Tek) Thongpapanl, and Seigyoung Auh (2014), details about the various components like Perceived Usefulness and Perceived Ease of use that directly correlates with the attitude and behavior of the users of Information System tool.

IV. DEMOGRAPHICS

Below given is the demographic study of a sample from 50 B-Schools with 342 responses,

What kind of HRIS tool your institution is adopting?`	Types of Tools	N %
	Cloud Based Single system HR Solution	3.30
	Compare HRIS tool	3.30
	Customized to our institution	93.40

Table I: Types of HRIS tools used in Institutions

From the detailed study, the type of HRIS tool that most of the institutions use for their HR and other MIS activities are known (Table I).
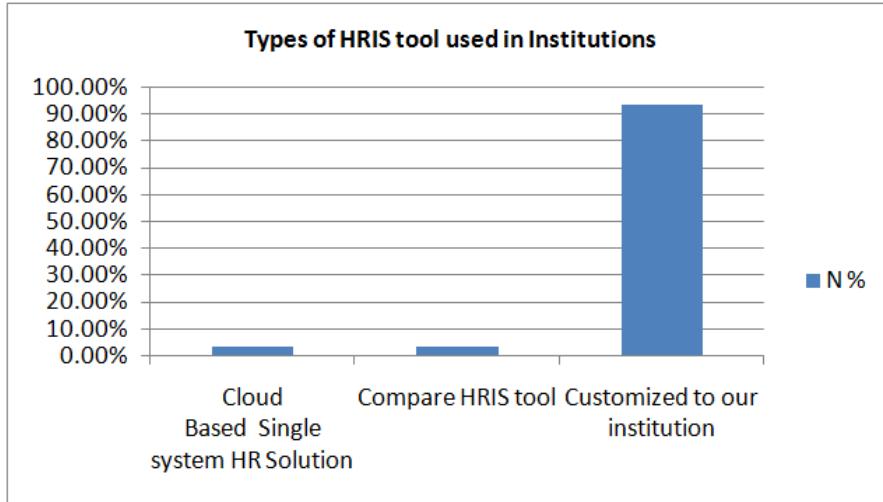

Graph 1: Types of HRIS tools used in Institutions

It is observed from Graph 1 that 93.4% of the respondents used the tool that is customized to the institution. The other branded tools like Cloud Based Single System HR solution and COMPARE HRIS tool was used by 3.3% respectively. This indicates that 100% of the sample population is using some kind of HRIS tool for their Human Resource Information System activities and other MIS activities in their work schedule. It also indicates that majority of the population are using the customized and tailor made tool which best suits their requirements in the institution.

Gender	Gender	Gender %
	Female	28.60
	Male	71.40

Table II: Gender of Respondents

It is also observed that majority of the HRIS tool users are male when compared to female (Table II)
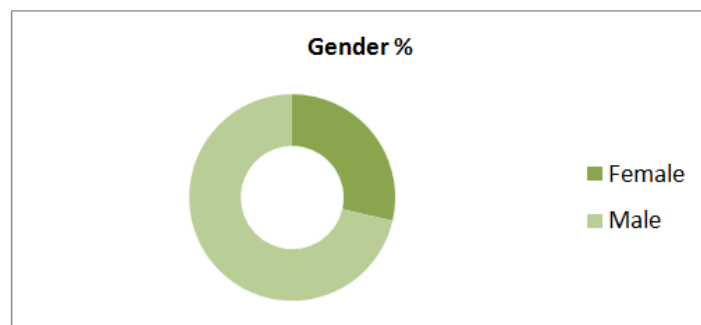

Graph 2: Gender of Respondents

In the taken analysis (Graph 2), it is noted that 71.4% of the people who uses the HRIS tool are male when compared to female which is 28.6%. With respect to the type of users of the specific tool, there are different kinds of users found in various institutions (Table III). As the tool is involved with the technology, it is essential to identify if the tool is handy for any intermediate users or if it can be used only by the advanced users.

With respect to technology in general, how would you describe yourself?	Type of Users	N %
	Advanced user	27.90
	Intermediate user	63.90
	Novice user	8.20

**Table III:** Types of Users of HRIS tool
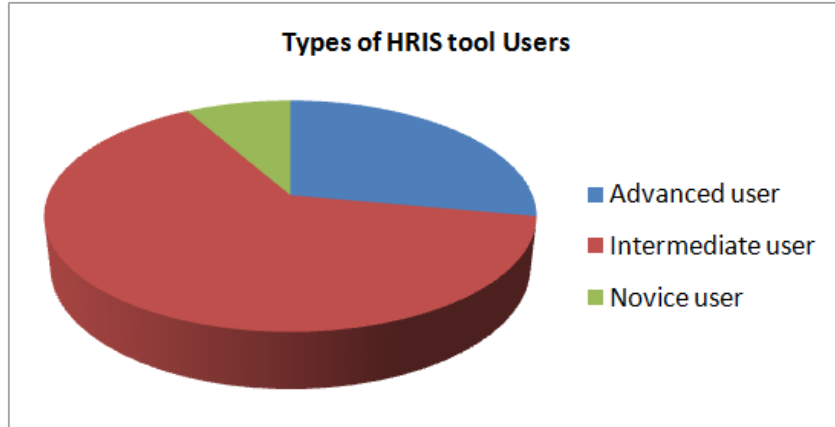
Graph 3: Types of Users of HRIS tool

The study recommended that 63.9% of the users are the intermediate users and 27.9% are the advanced users. The novice users who are very new to the system is only 8.2% (Graph 3). The study converges that all institution uses a customized tool for their HR related and MIS related activities and most of them who uses the tool is not a novice user. The users of the tool are aware of the effectiveness of the usage of the tool and therefore the Perceived Usefulness is recommended as moderate and high experience factors by most of the users (Table IV).

| After using the HRIS tool, how experienced would you judge yourself to be?	Experience	N%
	High Experience	36.10
	Low experience	8.20
	Moderate experience	55.70

Table IV: Experience of using HRIS tool
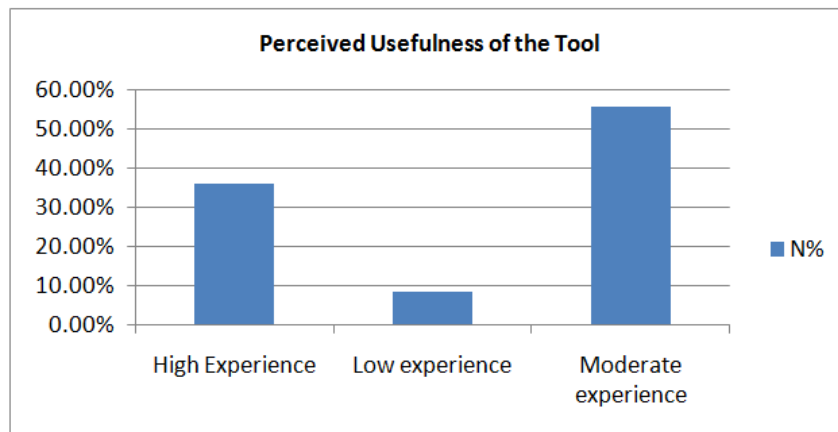
Graph 4: Experience of using HRIS tool

As per the study, the perception the respondents is that 36.1% will have a very high experience of using the tool and the 55.7% will have a very moderate experience with the tool. Only 8.2% has a very low experience; that would probably fall into the novice users (8.2%) (Graph 4).

From this demographic study it is made very obvious that as per the Technology Acceptance Model (TAM), the components like Perceived Usefulness (PU), Perceived Ease of Use (PEOU) are clearly indicated. This has led to increase in the third component of the Model Attitude towards Use (ATU). The below given table indicates that there is a change in the Behavioral Intention to Use (BIU) the system which is the fourth component of the model; but it is challenging and that is the gap identified because in majority of the institutions, the Performance Assessment is not completely based on the HRIS data only (Table V).

Usefulness & Ease of Use of the Tool	N%
There is a provision for giving feedback to upgrade the HRIS tool	98.3
Paper work is reduced by using HRIS tool	98.3
There is an automated HRIS tool in your institution	98.3
I regard myself as HR personnel	96.6
The usage of HRIS tool for operational work helps HR professional to be more focused toward the strategic thinking	96.6
Payroll and attendance monitoring is done using HRIS tool	96.6
There is a training given for the application of HRIS tool	95
Personnel data of every individual is maintained using HRIS tool	95
The HRIS tool is regularly updated based on feedback	93.3
The institution uses HRIS data for strategic decision making	88.3
There is a manual for the HRIS tool that you are using	86.6
Testing of skills and aptitude is done through HRIS tool	86.6
Performance assessment is based on HRIS data only	68.3

Table V: Components identifying the Usefulness and Ease of Use of HRIS tool
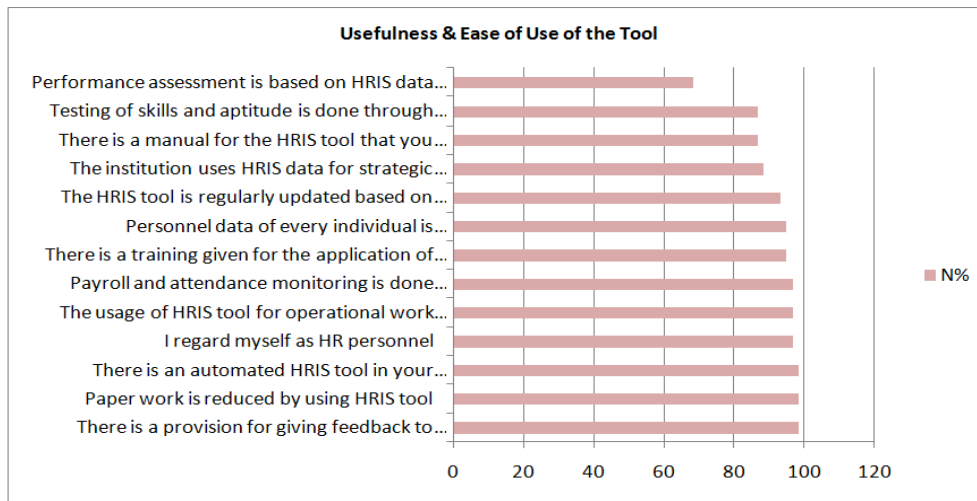
Graph 5: Components identifying the Usefulness and Ease of Use of HRIS tool

The study indicated clearly the usage of the tool by intermediate users is more. But, when it comes to strategic planning and decision making, not many institutions follow them. As majority of the institutions follow customized tool tailored according to their requirement, there is no manual made for instructions in using the tool. Also, observed that the HRIS tool is not used in testing the various skills of the staff in most of the institutions (Graph 5).

Before analyzing the data, there is a lot of check made in order to ensure that the collected data is reliable and valid. One of such check done on this study and data is undergoing the Reliability Test using Cronbach Alpha to test the reliability of each construct. Cronbach Alpha value is the lower bound estimate of the reliability of a psychometric test.

Reliability Statistics	
Constructs	**Cronbach's Alpha**
PU	0.91
PEOU	0.761
ATU	0.707
BIU	0.752

Table VI: Cronbach Alpha Test

According to the reliability test done for the scale used for the study (Table VI), it is found that that the magnitude of the value of the Cronbach Alpha for each construct is more than 0.6 which is acceptable. If the value is more inclined towards 1, then the reliability is said to be more. In the given table, it is found that a better reliability of the data. The result of the test ensured the consistency of the instrument and that the data is reliable. This is a strong indication to show that there is effectiveness in the usage of HRIS tool in the institutions of India.

As per the Technology Acceptance Model (TAM), the different constructs are Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Attitude Towards Change (ATU), and Behavioral Intention for Use (BIU). The analysis is made to check if there is positive correlation between various constructs mentioned or not. The data is said to be of high correlation if they are strongly linked together.

Constructs	PU	PEOU	ATU	BIU
PU	1			
PEOU	.831**	1		
ATU	.694**	.719**	1	
BIU	.662**	.495**	.493**	1
**. Correlation is significant at the 0.01 level (1-tailed)				

Table VII: Correlation between PU, PEOU, ATU & BIU

While checking the correlation of one construct with the other, the study arrived at the following results (Table VII): The study arrives at the result that the construct Perceived Ease of Use (PEOU) is more than 83% correlated with the Perceived usefulness. This infers that the Information System tools, if used in full extent in any institution, the percentage of Usefulness of the tool and the Ease of Use is very high and are correlated. The high rate of Usefulness and the Ease of Use helps the user; thereby, the effectiveness of the use of HRIS tool is very high.

The study also derives that as there is a high correlation between the Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), the attitude towards using the HRIS tool increases. Hence, observed that there is a very good correlation between the Perceived Usefulness (PU) and the Attitude Towards Use (ATU) and also a very good correlation between the Perceived Ease of Use (PEOU) and the Attitude Towards Use (ATU). It is clearly understood that as there is a good correlation between the Perceived Usefulness (PU) and Perceived Ease of Use (PEOU), the Attitude of the User towards using the tool increases positively. This indicates a high degree of effectiveness in the usage of HRIS tools in the institutions.

The study also indicates that the Behavioral Intention towards Use (BIU) is high as there is a very high rate of correlation between the other constructs like Perceived Usefulness (PU), Perceived Ease of Use (PEOU) and Attitude Towards Use (ATU). As the study indicates that there is correlation between these constructs or variables, the TAM model is proved to say that the Behavior of the User towards using the HRIS tool is positively elevated, thereby, the effectiveness increases.

V.   CONCLUSION & RECOMMENDATION

By making optimum utilization of the above described study, the researcher is able to measure the effectiveness of HRIS tools focusing on the B-schools of India. In order to justify the value added contribution of the HRIS to accomplish the organization's mission, it is an inevitable task to measure the performance of the tool. After implementing the tool or the portal for the employees to perform their daily reporting routine online, a test period has to be monitored as to see how the employees respond. Zahid Hussain (2004), in his working paper in March 2004, mentions about the HR managers' profile much beyond just routine administration and are like professional consultants in conducting their role more professionally Suggestions may be provided based on the need of online feedback in the portal for the employees to revert if there are any difficulties in handling the portal.

The study thus concludes that there is a major impact of the usefulness and ease of use of Information system tools towards the attitude and behavior of the user. The attitude of the user has changed and is more towards usage of IS tools in order to make things right at the first time. The behavioral intention of the user is that the user searches for the tool to perform his task; whereby has made the work easier and effortless. This is the extent of effectiveness of IS tools in the Institution. Hence, the null hypothesis is accepted. Therefore, the Technology Acceptance Model (TAM) is highly accepted in measuring the effectiveness of the usage of Information Tool in the various activities of the institution.

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