

Factors Impacting Adoption of Human Resource Analytics among HR Professionals in India

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Abstract

In order to upgrade HR innovation along with HR technology, it is seen that worldwide organizations are putting their endeavours into adopting HR Analytics among HR professionals and to use HRA in an actual manner for decision-making process of organization. The given study aspires to explore the behavioural intention in order to use PLS) structural equation modelling (SEM) is employed for the purpose of validating the model which is based on data collected using questionnaire method from 302 HR professionals in India. The outcome showed a major positive impact of performance expectancy, facilitating condition, social influence and effort expectancy on behavioural intention to use Human Resource Analytics while fear appeals negatively impact HRA adoption intention. This study expands the explanatory perspective of UTAUT and gives viability for the organizations to direct HR professionals for adopting Human Resource Analytics from numerous paths of intention and usage behaviour. Business leaders, policy makers, and managers can make usage of this finding to aid Human Resource Analytics adoption in their organizations. Human Resource Analytics from the point of view of HR profession. Partial least square

Keywords: Human resource analytics; HRA Adoption intention; HRA Adoption behaviour; UTAUT; individual level adoption

1. Introduction

Human Resource Analytics (HRA) is becoming a more significant aspect of human resource professionals' decision-making process. HR analytics is a software tool used to get real time and factual based evidences to improve decision-making. Adoption of HRA has enabled firms in gaining a competitive advantage by allowing them to improve employee skills, attract and retain capable people (Van der Togt & Rasmussen, 2017). HRA is a subset of analytics that analyse metrics and parameters relating to human method. It increases employee productivity and assures a reasonable return on HR investment (BenGal, 2019; Bindu, 2016). It verifies decision-making process from personnel recruiting to integration within organization (Wandhe, 2020). In spite of apparent benefits, adoption of HRA among HRA professionals is slow (Marler & Boudreau, 2017) as there are challenges in adoption of technology. Most of literature emphasises that HR professionals' lack of business expertise and understanding or familiarity with quantitative data are challenges hindering implementation of HRA (Fitzenz, 2010; Bassi, 2011).

For adoption of any technology, there is need to understand the adoption behaviour of people. Various adoption models have been used to study the behaviour intention and actual adoption behaviour to use technology (Wang et al., 2020) which describes impact of behaviour

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intention on adoption behaviour (Kabra, 2017). Ajzen (1985) defined “behavioural intention is an individual’s subjective possibility of performing a specified behaviour, which is the major contributing factor to actual usage behaviour”. Past studies have used the technological innovation model to examine behaviour intention towards adoption (Ahmad, 2020) and behaviour intention is considered as “good precoder of actual behaviour” (Ajzen, 2002).

Although there is abundance of research in the context of adoption of innovation technology but still some key issues need to be addressed. Much of Existing literature on technology adoption is based on organizational level (Kimberly & Evanisko, 1981; Rogers, 1983) however; it overlooks the major challenges to adoption, specifically at the individual level. So the present research aims to fill this gap by applying individual level adoption using the UTAUT model to observe HR professionals adoption of human resource analytics. This research extends the understanding of the impact of the factors on HRA adoption at the individual level among HR professionals.

In the remaining paper, literature review of adoption of human resource analytics among HR professional is presented and conceptual model using UTAUT model is proposed. Then Data collection and analysis is done. Afterwards results and discussions and lastly conclusion of the study is presented.

2. Literature Review

2.1 Human Resource Analytics Adoption Behaviour

Researchers have used different models of adoption of technology like the innovation diffusion theory (IDT), theory of planned behaviour (TPB), technology-organization-environment framework (TOE), motivational theory (IT), technology acceptance model (TAM), theory of reasoned action (TRA) and unified theory of acceptance and use of technology (UTAUT). These models have been used in the management research area to elucidate technology adoption behaviour (Vargas et al., 2018). HRA entails of demonstrating the direct influence of people-related data on significant business outcomes (Carson et al., 2011). Bassi (2011) defined human resource analytics as “use of a methodology and integrated process for improving quality of people-related decisions with objective of boosting individual and/or organizational performance”. Successful adoption of HRA can elevate the HR profession to a new level, transforming it into a truly strategic business partner. HRA provides a larger and more valuable view of data than just HR indicators, and it may provide a comprehensive study of firm as a whole (Fitz-enz, 2010). These metrics will improve HR’s capacity to not only understand turnover rate, but also to determine where necessary resources should be allocated to reduce or avoid turnover (Neumann, 2008). The focus on use of HRA is gaining popularity as more and more data become available. Availability of this data will lead to requirements that may arise from growing importance of HRM and route to profitability (Bassi, 2011). HRA will aid in prediction of employee actions, which will benefit decisions made in investment in human capital (Schneider, 2006). Ranjan and Basak (2013) discussed that “Scope and Strategy to HRA should be determined depending on contextual criteria such as objective, internal readiness, investment appetite, and target timescale to achieve objective.”

It is viewed that some organizations do not consider individual intention and behaviour while adopting HRA, leading to adverse effect. For successful adoption of HRA, study of individual



behaviour of employees is required. So, the UTAUT model has been used in present research to study individual user behaviour and Intention to implement HRA. Venkatesh & Davis (2003) discussed that user behaviour is influenced by their intention to execute the behaviour. Numerous researchers have used UTAUT to examine user intention and behaviour for the adoption of new technology and is believed as best theory to study technology adoption in various perspectives (Altalhi, 2021). While prevailing literature has put some light on individual level adoption, the focus has mainly been on organizational level, which is a gap that this research intent to fill.

2.2 Hypothesis Development

2.2.1 Social Influence

Social influence is “the extent to which members of a social group influences one another’s behavior in adoption” (Talukder & Quazi, 2011). Individual adoption of an innovation can be influenced by social influence if individual believes that adopting would be good, in which case individual may imitate (Frambach & Schillewaert, 2002). Individuals may choose to accept an innovation based on their impression of peer pressure rather than innovation’s utility (Talukder, 2012). Prior studies on adoption of innovation found that an individual behavior would lean towards adopting the technology if colleagues and coworkers influence adoption behavior (Kabra et al., 2017). Further, adoption behavior also influenced by the support and commitment from top management within the organization. Prior studies reveal that social influence significantly influences HRA adoption (Jeyaraj & Sabherwal, 2008; Kabra et al., 2017; Vargas et al., 2018 ;). So, the researcher hypothesizes that:

Hypothesis1: Social influence positively impacts HR Analytics adoption behaviour.

2.2.2 Facilitating Conditions

Facilitating Conditions refers to “the degree of the source’s (tool) attractiveness, power or forcefulness, and energy; or the degree to which information (data) is perceived as competent of producing correct assertions” (Johnston, 2006). Usage of technology necessitates few specific skills, resources, infrastructure, etc. for the sake of organization’s benefit which inspire the user to adopt the technology. The role of facilitating conditions have theoretically supported by the studies (Kabra et al., 2017). According to studies, a key cause of low performance is a dearth of or insufficient resources (Success Factors, 2013). Earlier studies revealed the influence of facilitating conditions in order to adopt the technology (Venkatesh et al., 2003; Kabra et al., 2017). So, the researcher hypothesizes that:

Hypothesis 2: Facilitating Conditions positively impact HR Analytics adoption behaviour.

2.2.3 Effort Expectancy

Effort Expectancy is “the degree of ease associated with the use of the system” (Venkatesh et al., 2003). One of four major dimensions connected to behavioural aspects that impact whether or not someone uses a new technology is effort expectancy. For the sake of this study, terms ease of use and effort expectation will be used interchangeably. Venkatesh et al., 2012 discussed that “From viewpoint of effort expectancy, in organizational contexts, employees analyze time and effort in establishing perceptions about overall effort connected with acceptance and usage of technology”. The study looked into applying UTAUT to a consumer environment rather than an organizational one (Venkatesh et al., 2012). Similarly,

this analysis looks into various software platforms now in use in some HR departments, as well as whether or not newer, more data-driven software is being accepted. An individual's belief towards using the technology, i.e., HRA is easy to use; higher will be the intention to adopt HRA. In various studies, the direct impact of effort expectancy on behavioural intention on users to adopt technology has been seen (Venkatesh et al., 2012; Kabra et al., 2017). Based on previous research, the researcher hypothesizes the following:

Hypothesis 3: Effort Expectancy positively impact HR Analytics adoption behaviour.

2.2.4 Performance Expectancy

Performance Expectancy is “the degree to which an individual believes that using the system will help him or her to attain gains in job performance” (Venkatesh et al., 2003). As a result, individuals may conclude that time and effort required to master application or innovation outweighs benefits of improved job performance. Thus, value of employing or adopting invention is countered. Performance expectancy as a “strong predictor of behavioural intention” for adoption of new technology has been proved by previous studies (Venkatesh et al., 2012; Kabra et al., 2017). Studies reveal that making use of new technology enhances the individual's performance. So forth, HRA has also proved to be a game-changer, to increase skills of employee, develop decision-making process and overseeing other jobs (Van der Togt & Rasmussen, 2017; Mohammed & Quddus, 2019; Wandhe, 2020). Earlier studies revealed the influence of performance expectancy in order to adopt the technology (Venkatesh et al., 2012). So, the researcher hypothesizes that:

Hypothesis 4: Performance Expectancy positively impact HR Analytics adoption behaviour.

2.2.5 Self-Efficacy

Self-Efficacy refers to “judgments of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1977). It is centred on a person's belief in his ability to do well and achieve a certain level of performance. As a result, HR professionals' adoption of HRA will be influenced by their perceptions of their own talents (Bandura 1977). Prior studies found that people with higher level of self-efficacy learn fast and have a propensity to contribute better on activities for which they achieved knowledge and understanding (Zimmerman, 2000; Schunk, 2009; Ozgen, 2013). So, the researcher hypothesizes that:

Hypothesis 5: Self-Efficacy positively impact HR Analytics adoption behaviour.

2.2.6 Fear Appeals

Fear Appeals refers to “communicating in a persuasive manner, to motivate a behavioral change and having the individual perceive a threat and tapping into the individual's emotion of fear” (Johnston, 2006). Fear appeals are linked to HR professional's adoption of analytics for the purpose of this study. Data analysis necessitates knowledge of statistical measures as well as problem solving abilities; yet, vast number of HR professionals have not developed these skills, leaving firms with the option of hiring persons with such skills (Bersin, 2013). As a result, HR professionals may be concerned about losing their jobs to someone with a statistical background and having more competence. Fear appeal is a type of communication tool that is used to affect someone's behavior where consequence, whether positive or negative, is based on a perceived threat or arousal level (O'Keefe, 2002; Johnston, 2006). Fear



appeals can be divided into four sections: (a) more fear is stimulated by the content of the message; (b) behavior change is influenced by the strength of the content; (c) higher grade of persuasion if the message is stronger; and (d) association between the content of the fear appeal and the stimulation of fear in the individual (O'Keefe, 2002). Sherer and Rogers (1984) explored the positive effects of emotional interest and concreteness on attitude change in the fear appeals model. Based on the aforesaid findings, it is recommended that organizational leaders should be careful about how they structure their communications to encourage HR professionals to implement analytics for improved decision making and competitive advantage for the organization. Bersin (2013) states that organizations need to find people with necessary skill sets and abilities to analyze HR data. The method of conveying the message and perceiving the threats, known as fear appeals, can have a positive or negative impact on the HR professional's adoption. Recent studies on fear appeals find that empirical results are unpredictable to interpret as each person's fear and arousal of fear is unique and influenced by the environment (Rogers, 1975). Based on earlier research, the researcher hypothesizes that:

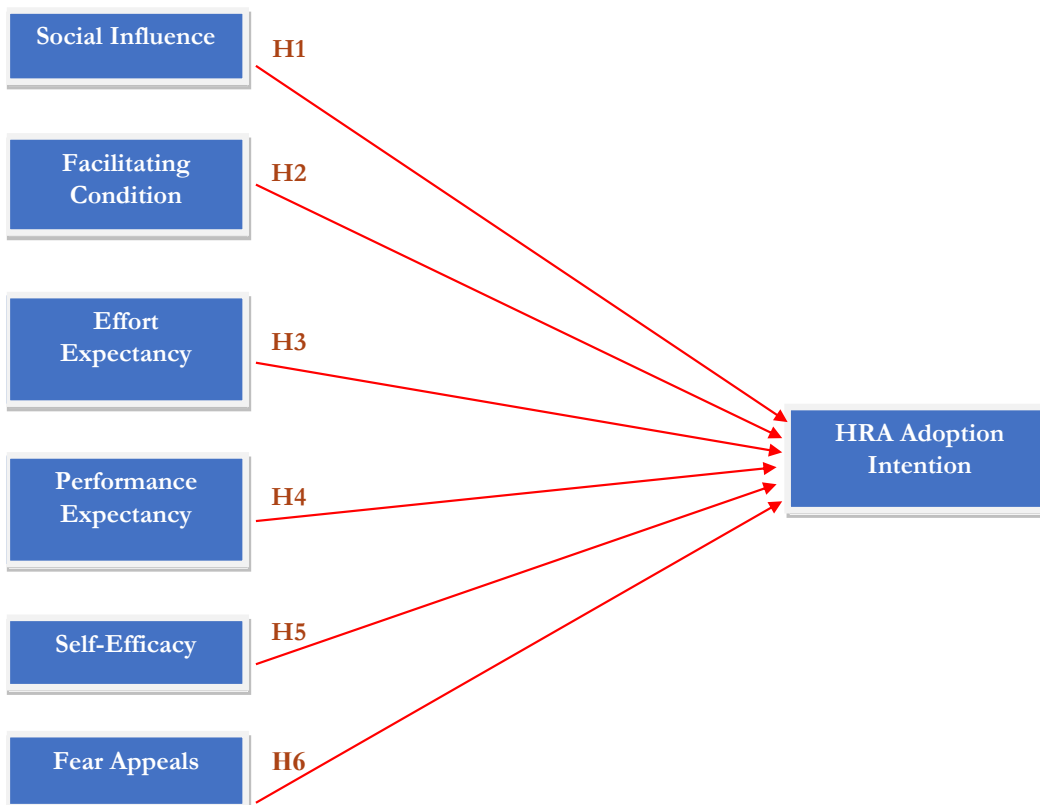
Hypothesis 6: Fear appeal positively impact HR Analytics adoption behaviour.

2.2.7 Behavioural Intention

Behavioural Intention refers to "A process that results in the assimilation of a product, process, or practice that is new to the adopting organization and/or the individual level" (Damanpour & Wischnevsky, 2006). It influence the individual behaviour that is a person's eagerness to perform a given behaviour. Previous studies have shown the association between intention and behaviour (Venkatesh & Davis, 2003; Venkatesh et al., 2012). Evidence has been given by research that willingness of an individual, i.e., intention to perform a behaviour influence the actual behaviour of an individual (Wang et al., 2020). Further, behavioural intention also elucidates why in certain situations people behave in a certain manner (Fisk et al., 2011). The given study recommends that individuals with the intention of using HRA will be more willing to implement HRA. At last, since the given study explores the purpose to use HRA, the state of actual usage behaviour is also of great concern. Therefore, in the perspective of this study, the intention behind adopting HRA is assumed to have a positive impact on HRA adoption. So, the researcher hypothesizes that:

Hypothesis 7: HR Analytics adoption behaviour is positively related to behavioural intention.

Figure 1. Proposed Model



3. Research Methodology

3.1 Questionnaire Design - The questionnaire method is used for collection of data and proposed model testing. All variables are measured using a 7-point Likert Scale ranging from 1 equal to strongly disagree to 7 equals to strongly agree. The questionnaire reliability and items are confirmed by the exhaustive literature review integrating the expert opinions and Cronbach's alpha of 0.70 which is considered as acceptable. The pilot testing of questionnaire has been done on 97 respondents to evade any vagueness if present in instrument before conducting the survey on larger sample. The researcher applied Venkatesh and Davis (2003) items to measure independent variables and HR Analytics adoption behaviour

3.2 sample Design- The sample population considered for this study is HR professionals who are presently working in HR area, irrespective of their position, industry, function, tenure in HR department. Questionnaire survey method is used to collect data from HR professionals working in organizations that have adopted HRA in India. A total of 318 responses are collected out of which 16 responses are eliminated so 302 total responses are considered finally for analysis.

Table 1. Respondents' Demographics

Category	Items	No. Of Respondents	Percentage
Gender	Female	166	55%
	Male	136	45%
	Grand Total	302	100%
Age	21-30	93	31%
	31-40	116	38%
	41-50	72	24%
	Above 50	21	7%
	Grand Total	302	100%
Experience	6-10 Year	132	44%
	11-15 Year	66	22%
	1-5 Year	73	24%
	More than 15 Year	31	10%
	Grand Total	302	100%
Job Position	Manager	127	42%
	HRIS	85	28%
	Generalist	55	18%
	Specialist	35	12%
	Grand Total	302	100%

3.3 Data Analysis

Partial least square (PLS) structural equation modelling method based on the two-step approach is employed in this study for data analysis using Smart-PLS 2.0 and SPSS 21.0 software. Firstly, the measurement model is tested for reliability and validity of data. Secondly, path coefficients among constructs are evaluated in a structural model in order to test the hypothesis.

4. Result

4.1 Measurement Model

Factor loading for all variables is conducted to ensure that they are loaded to their respective constructs and do not cross-load with other constructs. Items with factor loading below 0.7 are released and all other items with loading above the defined threshold considered reliable. All AVE values (from 0.689 to 0.841) are above 0.5 representing that the latent variable explains more than half of variance in indicators and establishes convergent validity. The AVE of each latent variable representing satisfactory discriminant validity is shown in table 2.

Table 2. Discriminant Validity

Constructs	Mean	SD	EE	FA	PE	FC	SE	HAI	SI	HAAB	AVE
Effort Expectancy	4.887	1.371	0.849								0.720
Fear Appeals	2.577	1.170	0.157	0.789							0.702
Performance Expectancy	5.166	1.037	0.191	0.150	0.779						0.682
Facilitating Condition	3.301	1.279	0.024	0.001	0.016	0.819					0.579
Self-Efficacy	4.346	1.479	0.248	0.108	0.090	0.008	0.848				0.589

HRA Adoption Intention	4.645	1.066	0.144	0.142	0.327	0.035	0.078	0.689		0.508
Social Influence	4.283	1.297	0.006	0.011	0.082	0.018	0.023	0.091	0.801	0.704

"Note: Above table presents the squared correlations with Cronbach's alphas on the diagonal and discriminant Validity necessitates mean communalities (AVE) to exceed squared correlations between constructs."

4.2 Structural Model

Results from the structured model are shown in table 3. Bootstrapping process is used to test the significance of path coefficients. Figure 2 shows the loading factor of each construct and standardized path coefficient and variance of the endogenous variable found using PLS-SEM. All paths assessed as per the projected hypothesis are significant as shown in table 3 and figure 2. Table 3 also shows the ranking in terms of importance as well as details about which hypotheses are supported and which are not supported. Performance expectancy positions the first in terms of importance.

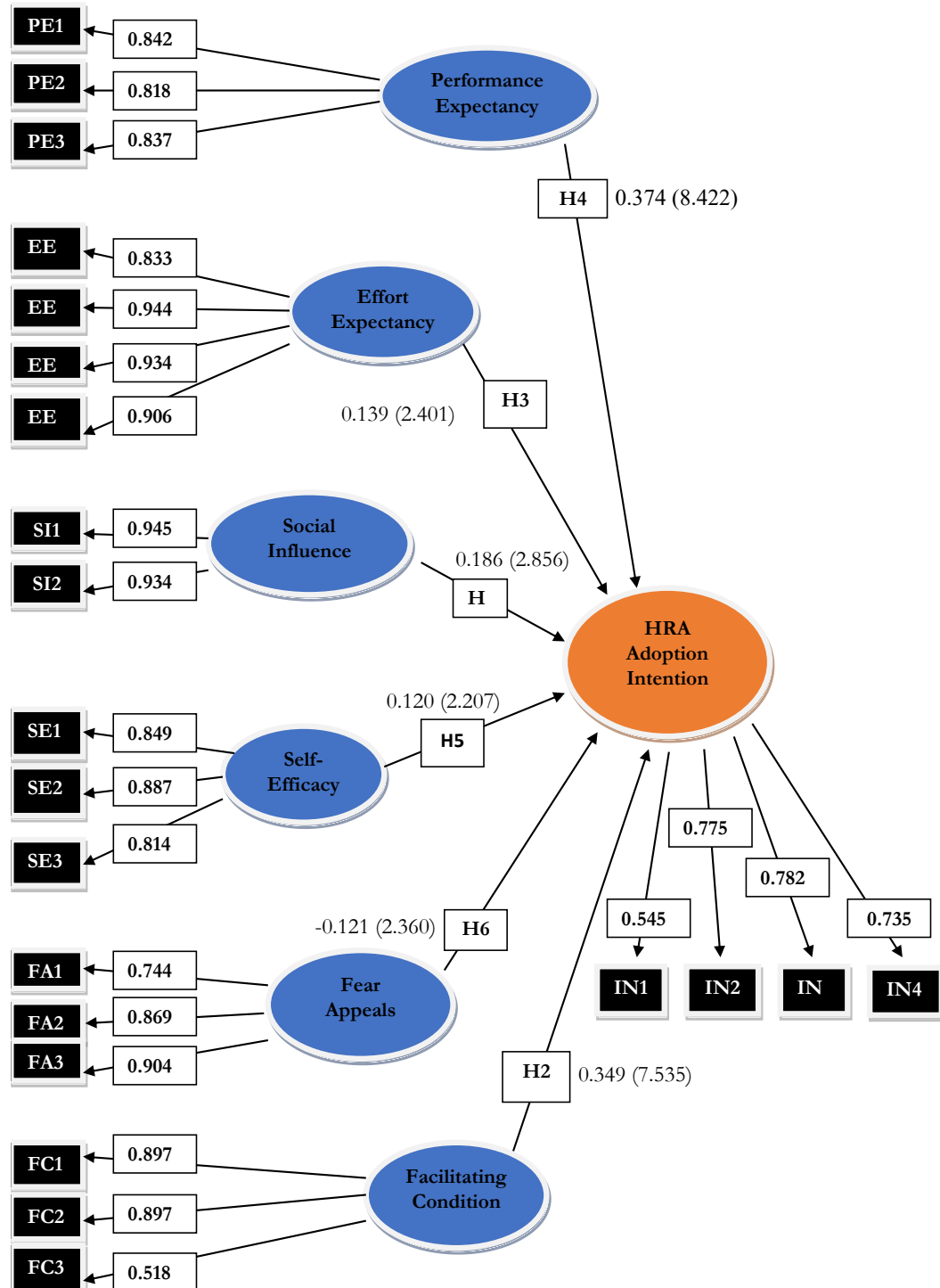
Table 3. Path Estimations to HRA adoption intention

Path estimations	Standardized coefficient	path	Hypothesis Result	Rank
Social Influence	0.186*		H1- Supported	3
Facilitating Condition	0.349*		H2- Supported	2
Effort Expectancy	0.139*		H3- Supported	4
Performance Expectancy	0.374*		H4- Supported	1
Self-Efficacy	0.120*		H5- Supported	6
Fear Appeals	-0.121*		H6- Not Supported	5

"Note: *p-value < 0.05; Significance of standardized path coefficients were obtained using bootstrap with 100 re-samplings and 100 iterations (Chin, 1998)"



Figure 2. Structural Model.



5. Discussion

The findings of this study recommend that all the hypotheses except fear appeals are supported as shown in Table 3 and Figure 2 and have a significant positive impact on HRA adoption intention. The significant negative result of fear appeals is found in adoption of HRA. Availability of proper HRA tools that is facilitating conditions have a substantial positive impact on the HRA professionals to implement HRA. Many HR technology companies are currently striving to attract organizations to buy portions or full software packages but there are many small organizations which lack financial resources to make these technologies available. Also, some software packages may not be well-suited with current technological systems and changing their technology could be a financial strain for them (Bassi, 2012). The findings of this study reveal that the way of conveying the message and what threats is given have a negative impact on the HR professional's adoption decision. It is difficult to know how HR professionals perceive a real threat and it may be demotivating rather than inspiring them. Hence, it is important to remember that each person's fear and arousal of fear is different and depends on surrounding or interpersonal scenario (Rogers, 1975). Studies have found that HR professionals' perception of how easy or effort expected to use HRA positively impacts on their decision to adopt it. Prior research has recommended that when there is a less degree of effort related with using a technological system, people are more likely to adopt it (Venkatesh et al., 2012). Studies show that HR professionals who believe that adopting HRA will improve their job performance and lead to promotions, are more inclined to adopt HRA. Expected performance improvement has been found to be great predictor of behavioral intention (Venkatesh et al., 2012). This finding is consistent with previous research which has demonstrated that using the technology will help individuals to improve their job performance which has a significant impact on their intention to use the technology (Venkatesh et al., 2012). Finding of this study indicate that self-efficacy has positive impact on behavior intention. This finding is consistent with prior studies which have revealed that an individual's comfort level with quantitative skills positively impact their decision to adopt HRA (Ozgen, 2013). The perception that individual has ability to undertake an action, in this case HRA, is comparable to individual's comfort level.

According to findings of this study, a person's social affiliation has a positive effect on their adoption of HRA. This finding is consistent with past research that has demonstrated that coworkers and colleagues can inspire, encourage and influence the behavior of people for the adoption of technological innovation (Johnston, 2010; Talukder & Quazi, 2011).

6. Practical Implications

This study specifies the most important elements in the HR professionals' decision to adopt HRA are performance expectancy, facilitating conditions, social influence and effort expectancy. This comes as no wonder, as HR professionals spend majority of their time in cultivating relationship and applying their soft skills. HR professionals, if want to become a true strategic partner of the organization and get a seat at the executive table then should have thorough knowledge of the latest trends in analytics and should initiate using HRA. HR professionals who are presently using HRA should mentor their colleagues who are not using HR Analytics to help them overcome barrier. Companies should make available time and resources to inspire and enable such mentoring. Thus, this will provide help to those people who are hesitant to use analytics or quantitative methodologies.



Also, senior HR professionals should start to inspire and team up with their junior colleagues, who may have data analysis knowledge and jointly a professional learning society with their organization. Enthusiastically looking for prospects to learn or improve to use HRA would be advantageous to the HR profession.

7. Limitation and Suggestions

This study is limited to HR professionals and focused primarily on the individual-level adoption of technological innovations and not focusing on the organizational-level adoption of technology. Adoption of HR analytics at the organizational level was solely employed as a context in which the individual performs. So, organizational culture factor needs to be incorporated in this study. Also, this study is limited solely for Indian organizations. So, further research needs to be performed for other countries to augment the generalizability of findings. There are cultural differences from one country to another which need to be considered for HRA adoption. Further impact of moderating variable on adoption behavior is not considered in this study. So, research can be conducted to know the effect of moderating variables to encourage the transformation of HRA behavior intention to actual adoption behavior.

8. Conclusion

This study explains many elements that influence the HR professional's adoption of HRA as well as findings that shows which factors seems to be more dominant. Empirical and non-empirical literature on human resource analytics adoption at the individual level, particularly among HR professionals is discussed. This research overall goal is to transform the minds of HR professionals who are still stuck with 20th century theories on management and relationship building instead of focusing on recent practice of becoming a strategic business partner (Lockwood, 2007; Sullivan, 2013). This study shows that the factors affecting the adoption of HRA are in the hands of both the HR professional and the leadership of the company. HR professionals must understand that the employers are certainly looking for using analytics to gain a competitive advantage. HR professionals need to hire people in their own departments who are tech savvy and have understanding of data analytics and should start using HRA themselves to be at the lead position of implementing the new era of analytics in HR. Similarly, leaders of firms seeking to increase a competitive advantage in HR and organizational decision-making must ensure that HR professionals have access to appropriate tools, data, support, and resources to help them make better decisions.

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