

Explaining the Intention to Use Electronic HRM among HR Professionals: Results from a Pilot Study

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Abstract: Electronic human resource management (E-HRM) technology provides human resource (HR) functions with the opportunity to create new avenues for contributing to organizational success. This paper aims to examine HR professionals' self-reported intention to use E-HRM technology by employing the Theory of Planned Behaviour (TPB) as the research framework. This study is a preliminary investigation based on data collected from 51 HR professionals. The respondents completed a survey questionnaire measuring their responses to four constructs in the TPB. These were administered during the seminar organized by HR professional body in Malaysia. Partial Least Squares (PLS) was used as the technique for data analysis. The results of this study showed that only attitude toward usage was significant predictor of intention to use E-HRM technology while subjective norm and perceived behavioural control were not. Overall, this study found that the three explanatory variables in the TPB explained about 64 percent of the variance in intention to use E-HRM technology. The paper hopes to obtain greater insights into the applicability of TPB in future research on this unique topic among the HR professionals as a whole.

Key words: Field of Research: Human Resource Management, Technology.

INTRODUCTION

Rapid development of science and technology, especially the usage of Internet and computer technology, has brought outstanding changes to our economy, society, and culture. Over the last few years, with the advent of these technologies, a new wave of human resource (HR) technology known as electronic human resource management (E-HRM) has emerged (Hooi, 2006). However, academic involvement in E-HRM started relatively late and, to an extent, is still trying to catch up with practice (Ruel *et al.*, 2007). The introduction of E-HRM is expected to facilitate a more efficient and strategic way of working for HR professionals (Gardner *et al.*, 2003; Shrivastava & Shaw, 2003).

Using E-HRM technology is a way of implementing HR strategies, policies, and practices. The E-HRM technology supports the HR function to comply with the HR needs of the organization through web-technology-based channels (Ruel *et al.*, 2004). The E-HRM technology provides a portal which enables managers, employees, and HR professionals to view, extract, or alter information which is necessary for managing the HR of the organization. In addition, with the use of E-HRM, fewer HR professionals are needed, because E-HRM eliminates the "HR middleman" (Lengnick-Hall & Moritz, 2003).

This study aims to examine how attitude, subjective norm, and perceived behavioural control affect the intention to use E-HRM in the framework of Theory of Planned Behaviour (TPB) model. The TPB is a widely-used and validated model in predicting technology acceptance. The research model and hypothesized relationship were empirically tested using the Partial Least Squares (PLS) approach.

2. Review of Literature:

2.1. E-HRM:

Recently, E-HRM has been studied increasingly by many scholars. Most of the studies on E-HRM were undertaken in USA and Europe. There are fewer studies from Malaysia, a country that is environmentally, economically, and technologically far different from the developed economies. Because of the huge difference in the market environment and the management mechanisms between developed countries and Malaysia, there should be much different research results on E-HRM. Previous studies on E-HRM have been conducted by various researchers in developed countries.

Laumer *et al.* (2010) studied E-HRM in an E-Business environment among 144 HR managers from German top 1,000 firms. Their survey results revealed that HR managers' most pressing challenges are staff retention and internal and external employer branding. They concluded the importance for an E-HRM that needs to be both effective-adequately fill vacancies – and efficient – make best use of scarce resource.

Strohmeier and Kabst (2009) examined the factors that influence the cross-national organizational adoption of E-HRM in Europe. Major general and contextual influence factors were derived and tested based on a large-scale survey with a sample of 2,336 organizations in 23 European countries using logistic regression. They revealed that E-HRM is a common practice throughout Europe since two-thirds of all organizations have already adopted E-HRM. They also found that major determinants of E-HRM adoption are size, work organization, and configuration of HRM.

Voermans and van Veldhoven (2007) conducted a study on attitude towards E-HRM based on the Technology Acceptance Model (TAM). They utilized an online questionnaire, in which 99 managers and 257 employees within Philips (Electronics) Netherlands participated. They found that differences in perceived usability of current IT systems, as well as the preferred HR roles strategic partner (high preference) and employee champion (low preference), were related to a positive attitude towards E-HRM systems. For managers, user support was also found to be a predictor of a positive attitude towards E-HRM.

Olivas-Lujan *et al.* (2007) conducted a case-based study in order to investigate how four of the most competitive Mexican firms are implementing their E-HRM strategy. They discovered that to fully understand the way E-HRM is used in firms from emerging economies, it is important to take into consideration local idiosyncrasies.

Ruel *et al.* (2007) examined the contribution of E-HRM to HRM effectiveness. They conducted their study in the Ministry of Internal Affairs in The Netherlands, where E-HRM in the form of employee self-service applications was introduced. They found that individual assessment of e-HRM applications influences HRM technical and strategic effectiveness. This is especially so in the perceived quality of the content and the structure of e-HRM applications which have a significant and positive effect on technical and strategic HRM effectiveness. They also found that the basic expectations are that using e-HRM will decrease costs, will improve the HR service level and will give the HR department space to become a strategic partner.

Ruel *et al.* (2004) conducted an explorative empirical study in five large companies on web-based HRM. They concluded that the goals of E-HRM are mainly to improve HR's administrative efficiency/to achieve cost reduction. They also found that international companies seem to use the introduction of E-HRM to standardize/harmonize HR policies and processes. Further, there is a "gap" between E-HRM in a technical sense and E-HRM in a practical sense in the five companies involved in their study. Finally, E-HRM hardly helped to improve employee competences, but resulted in cost reduction and a reduction of the administrative burden.

2.2. Theory of Planned Behaviour (TPB):

The TPB was proposed by Ajzen (1991) is an extension of the Theory of Reasoned Action (Ajzen & Fishbein, 1980) for predicting behaviour in a real-world setting. The TPB has been used by researchers over the past 20 years and shown to be able to predict a variety of intentions and behaviours. A person's action is determined by behavioural intentions, which in turn are influenced by an attitude toward the behaviour and subjective norms (Ajzen, 1991). In addition to attitude toward the behaviour and the subjective norm in the TPB, perceived behavioural control can influence intention as well. PBC influences the individual's decision through behavioural intention. The TPB framework is shown in Figure 1 below.

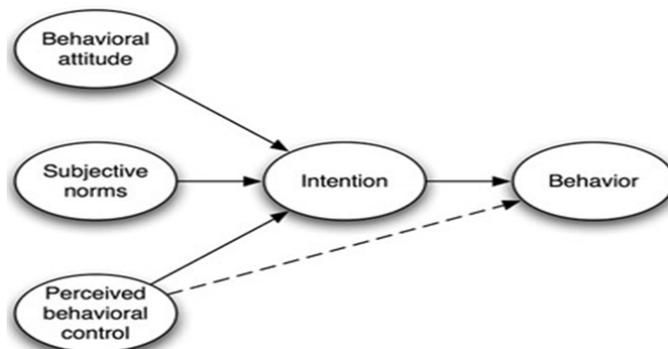


Fig. 1: Theory of Planned Behaviour (TPB) (Ajzen, 1991).

2.3. Gap in Previous Studies:

Despite the growing interest in E-HRM in developed countries, there are very few studies on HRM technology in Malaysia. For instance, in their preliminary investigation, Yusliza *et al.* (2011) examined the relationship between HR roles, perceived usefulness, perceived ease of use, and attitude towards using E-HRM using correlation analysis among 51 HR professionals in Malaysia. In another study by Yusliza and Ramayah (2011), they investigated on technology factors (clarity of E-HRM goals, E-HRM trust, user satisfaction with E-HRM, perceived usefulness, perceived ease of use, intention to use E-HRM, user support, social influence, and facilitating condition) and attitude towards using E-HRM among 51 HR professionals in Malaysia. In 2010, Yusliza *et al.* proposed a model based on TAM and HR Roles that examine the relationship between HR roles and E-HRM adoption. Ramayah *et al.* (2006) studied the adoption and usage of a HR information system (HRIS) among HR executives and HR professionals working in companies in Penang. Their study revealed that compatibility and visibility were positively related and complexity was negatively related to extent of use of the HRIS. Hooi (2006) studied the extent of E-HRM practiced in the small and medium sized manufacturing companies. The readiness and feasibility of implementing E-HRM in the SMEs is dependent on the availability of resources (expertise, financial, and technical resources) and the attitude of the employees.

Less attention has been made to the relationship with attitude, subjective norm, and perceived behavioural control in predicting intention to use E-HRM technology. Although E-HRM topic has been researched in previous study, but as far as is known, it has not been closely examined by adopting TPB model. It has become increasingly important to gain a greater understanding of these variables on intention to use of E-HRM. This study is an attempt to fill this gap in E-HRM literature. This paper is part of a larger research project in which several aspects of E-HRM adoption were investigated.

2.4. Variables Related to this Study:

2.4.1. Intention:

Behavioral intentions are factors that capture how hard people are willing to try to perform a behaviour (Ajzen, 1991). In this theory intention is the most influential predictor of behaviour. Some researchers have used only intention as the dependent variable as in many previous researches it has been shown that intention is strongly correlated with actual behaviour. If the technology is new then we can study the intention to use but if the technology has been used for a long time then actual behaviour should be measured.

2.4.2. Attitude:

Attitude is defined as the way individuals respond to and are disposed towards an object. Prior studies (Davis *et al.*, 1989; Gopi & Ramayah, 2007; Ing-Long & Jian-Liang, 2005; Liu *et al.*, 2003; Ramayah *et al.*, 2008; Ramayah & Mohd. Suki, 2006; Rhodes & Courneya, 2003; Shih & Fang, 2004; Taylor & Todd, 1995; Teo & Pok, 2003; Baker *et al.*, 2007; Teo and Lee, 2010) have shown that attitude does have a significant and positive impact on intention. In recent studies in different contexts like intention to purchase food (Alam & Sayuti, 2011), keywords advertisement search (Wu *et al.*, 2011) and entrepreneurial intention among students in developing and developed countries (Iakovleva *et al.*, 2011) found that attitude was a predictor of intention. Thus we hypothesize that:

H1: Attitude will be positively related to intention to use the E-HRM system.

2.4.3. Subjective Norm:

Subjective norm is defined as one's perception of whether people important to the individual think the behaviour should be performed. Studies have shown mixed result regarding subjective norm as a predictor of intention. Studies have shown no significant relationship between subjective norm and intention (Davis *et al.*, 1989; Mathieson, 1991; Chau & Hu, 2001; Lewis, Agarwal & Sambamurthy, 2003) and some studies have shown significant relationship between subjective norm and intention (Taylor & Todd, 1995; Venkatesh & Davis, 2000; Ramayah *et al.*, 2003, 2004; Chan & Lu, 2004; Baker *et al.*, 2007; Teo & Lee, 2010). In recent studies in different contexts like intention to purchase food (Alam & Sayuti, 2011), keywords advertisement search (Wu *et al.*, 2011) and entrepreneurial intention among students in developing and developed countries (Iakovleva *et al.*, 2011) found that subjective was a predictor of intention. Based on these studies we hypothesize that:

H2: Subjective norm will be positively related to intention to use the E-HRM system.

2.4.4. Perceived Behavioural Control:

PBC is defined as the perceived ease or difficulty of performing the behaviour and the amount of control one has over the attainment of the goals from said behaviour. Researchers have shown that there is a positive relationship between PBC and intention in various research contexts, including physical activity, information technology, ethical decisions, health behavior, and so on (Blanchard *et al.*, 2008; Fang, 2006; Gopi & Ramayah, 2007; Ing-Long & Jian-Liang, 2005; Jen-Ruei *et al.*, 2006; Mathieson, 1991; Ramayah *et al.*, 2008; Shih & Fang, 2004; Taylor & Todd, 1995; Teo & Pok, 2003; Wise *et al.*, 2006; Baker *et al.*, 2007; Teo & Lee, 2010). In recent studies in different contexts like intention to purchase food (Alam & Sayuti, 2011), keywords advertisement search (Wu *et al.*, 2011) and entrepreneurial intention among students in developing and developed countries (Iakovleva *et al.*, 2011) found that perceived behavioral control was a predictor of intention. Thus we hypothesize that:

H3: Perceived behavioral control will be positively related to intention to use the E-HRM system.

3. Methodology:

This section details the context in which this research was conducted. It also explains the methodology and variables utilized in the study.

3.1. Research Site and Subjects:

The study took place in a Seminar that was organized by the HR professional body in Subang, Selangor in November 1, 2010. The research idea and project were proposed to the President of the Institute, and he agreed to allow the participants (HR professionals) to participate. Their participation was voluntary. Initially, 55 participants completed the questionnaires, but four of them were discarded from further analysis as they contained many unanswered questions. The final sample consisted of 51 HR professionals, of whom 12 (23.5 per cent) were male, 37 (72.6 per cent) were female, and 2 (3.9 per cent) participants did not report their gender.

3.2. Profile of the Respondents:

The majority of respondents (68.6 per cent) were Malays, followed by Chinese (19.6 per cent), Indians (5.9 per cent), and the remainder did not report their race. About 72.6 per cent of the respondents were married. Further, 47 per cent of the HR professionals have a bachelor degree, 23.5 per cent have Master degree, 17.6 per cent have either diploma or STPM, 2 per cent of the HR professionals have SPM, PhD, and certificate respectively. The remainder, they did not report their educational background. About 31.4 per cent of the participants are in HR/industrial relations field of study. For their current position in the organization, 43.1 per cent are HR executives/HR officer/Assistant HR manager, 41.2 per cent are HR manager/Senior HR manager, and 3.9 per cent are General Manager. The average of the participants is 38 years old. The average number of working experience in HR with the current organization is 5.6 years.

3.3. Procedure:

The questionnaire was administered to the participants during the seminar. Almost all of the potential participants who were approached by the primary researcher in the context of this seminar agreed to take part in the study. At the beginning of the seminar, it was clearly stated to the participants that all the information contained in their questionnaires would remain confidential. Instructions on how to correctly answer the questions were given to them. Participants were asked to return the completed questionnaire at the end of the seminar. A token of appreciation was given to the responding participants as incentives. The basic information of the participants (gender, age, race, position, etc) was coded to ensure absolute confidentiality and a better handling of the information. Respondents were told that they would be provided with the results of the study at their request.

3.4. Measures and Data Collection:

The measures used in the study have all been gleaned from the literature and a pilot study was conducted prior to the main research in order to check the feasibility or improve the quantitative research design. Normally, pilot study is carried out on the relevant members of the population, but not on those who will form part of the main sample (Lancaster *et al.*, 2004). It was designed to test the sampling before the full-scale data collection.

4. Results from the Pilot Study:

To analyze the data collected, the PLS were used. The reasons for using this technique are like covariance based structural equation modeling, PLS is also a latent variable modeling technique that incorporates multiple dependent constructs and explicitly recognizes measurement error (Karimi, 2009). Also PLS is far less restrictive in its distributional assumption and PLS applies to situations where knowledge about the distribution of the latent variables is limited and requires the estimates to be more closely tied to the data compared to covariance structure analysis (Fornell & Cha, 1994).

The Smart PLS M2 Version 2.0 (Ringle *et al.*, 2005) and two-step analysis approach as suggested by Anderson and Gerbing (1988) was adopted to analyze the data. Also following the suggestions of (Chin, 1998; Gil-Garcia, 2008) the bootstrapping method (200 resamples) was done to determine the significance levels for loadings, weights, and path coefficients.

4.1. Goodness of Measures:

The 2 main criteria used for testing goodness of measures are validity and reliability. Reliability is a test of how consistently a measuring instrument measures whatever concept it is measuring whereas validity is a test of how well an instrument that is developed measures the particular concept it is intended to measure (Sekaran and Bougie, 2010).

4.1.1. Construct Validity:

Construct validity testifies to how well the results obtained from the use of the measure fit the theories around which the test is designed (Sekaran & Bougie, 2010). The question here is does the instrument tap the concept as theorized? This can be assessed through convergent.

Table 1 shows the loadings and cross loadings. The table shows that all items measuring the same construct loaded highly on that particular construct and loaded lower on other constructs indicating convergent and discriminant validity.

Table 1: Loadings and Cross loadings.

Item	Attitude	Behavioral Control	Intention To Use	Subjective Norm
ATT1	0.904	0.418	0.705	0.354
ATT2	0.906	0.462	0.753	0.523
ATT3	0.921	0.472	0.746	0.484
ATT4	0.812	0.531	0.615	0.312
ATT5	0.933	0.515	0.738	0.460
ITU1	0.440	0.393	0.926	0.428
ITU2	0.448	0.380	0.852	0.377
ITU3	0.416	0.382	0.920	0.339
ITU4	0.488	0.413	0.942	0.424
PBC1	0.439	0.878	0.388	0.533
PBC2	0.438	0.860	0.335	0.383
PBC3	0.520	0.896	0.406	0.485
SN1	0.260	0.093	0.299	0.694
SN2	0.437	0.307	0.396	0.852
SN3	0.407	0.436	0.352	0.856
SN4	0.436	0.478	0.343	0.829

4.1.2. Convergent Validity:

Next we tested the convergent validity which is the degree to which multiple items to measure the same concept are in agreement. As suggested by Hair *et al.* (2010) we used the factor loadings, composite reliability and average variance extracted to assess convergence validity. The loadings for all items exceeded the recommended value of 0.5 (Hair *et al.* 2010).

Composite reliability values (see Table 2), which depict the degree to which the construct indicators indicate the latent, construct ranged from 0.812 to 0.942 which exceeded the recommended value of 0.7 (Hair *et al.*, 2010). The average variance extracted (AVE) measures the variance captured by the indicators relative to measurement error, and it should be greater than 0.50 to justify using a construct (Hair *et al.* 2010). The average variance extracted, were in the range of 0.657 and 0.829.

Table 2: Result of CFA for measurement model.

	ATTITUDE	AVE	CR	Cronbach
ATT1	0.904	0.803	0.953	0.938
ATT2	0.906			
ATT3	0.921			
ATT4	0.812			
ATT5	0.933			
ITU1	0.926	0.829	0.951	0.931
ITU2	0.852			
ITU3	0.920			
ITU4	0.942			
PBC1	0.878	0.771	0.910	0.852
PBC2	0.860			
PBC3	0.896			
SN1	0.694	0.657	0.884	0.823
SN2	0.852			
SN3	0.856			
SN4	0.829			

Note:

^a Composite Reliability (CR) = (square of the summation of the factor loadings)/{(square of the summation of the factor loadings) + (square of the summation of the error variances)}

^b Average Variance Extracted (AVE) = (summation of the square of the factor loadings)/{(summation of the square of the factor loadings) + (summation of the error variances)}

Table 3 presents the inter-correlations among the main constructs. As can be seen all the inter-correlations are significant at $p < 0.01$. There is no cause of concern for multicollinearity since the correlation coefficients for the inter-correlations between the independent variables are not very high.

Table 3: Intercorrelations.

	ATT	PBC	Intention	SN
Attitude	1.000			
Behavioral Control	0.532**	1.000		
Intention To Use	0.796**	0.431**	1.000	
Subjective Norm	0.481**	0.536**	0.431**	1.000

** $p < 0.01$

4.2. Hypotheses Testing:

Next we proceeded with the path analysis to test the 3 hypotheses generated. Figure 1 and Table 4 shows the results. The R^2 value for the relationship between the 3 variables and intention to use was 0.637 suggesting that 63.7% of the variance in intention to use can be explained by their attitude, subjective norms and perceived behavioural control. A closer look shows that attitude ($b = 0.772$, $p < 0.01$) was positively related to intention to use whereas subjective norm and perceived behavioural control were not significant. Thus H1 of this study was supported whereas H2 and H3 were not supported.

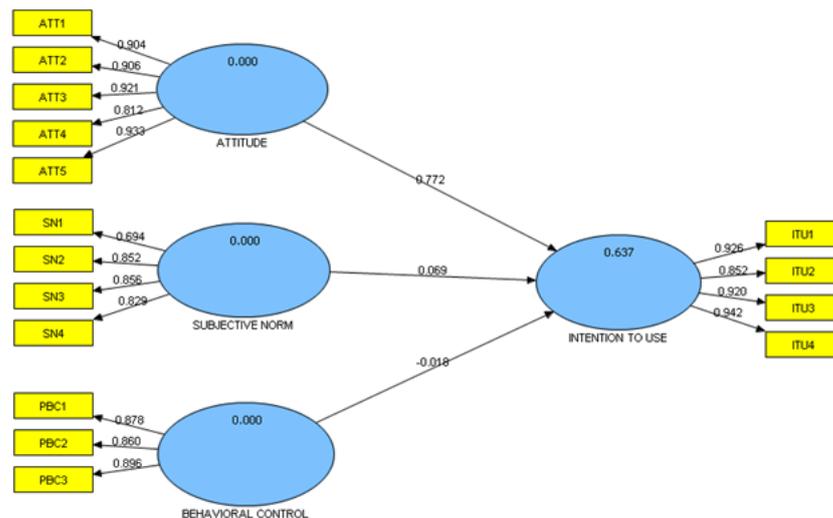


Fig. 2: Structural Model.

Table 4: Path coefficients and hypothesis testing.

	Relationship	Coefficient	p-value	Supported
H1	ATT @ INTENTION	0.772	9.492**	YES
H2	SN @ INTENTION	0.069	0.721	NO
H3	PBC @ INTENTION	-0.018	0.184	NO

**p< 0.01

Conclusion:

The results from the data analysis discovered that only attitude has been found to influence intention to use E-HRM technology. Subjective norm and perceived behavioural control did not give significant effect. This information is important when designing implementation methodologies and change management strategies as interventions need to be designed specially to meet the company’s requirement of E-HRM implementation. This research also has practical implications especially for the role of HR department in guiding change management strategies in collaboration with other department in the organization.

Generally, findings of the present study add to previous work on E-HRM adoption by explicitly addressing factors such as attitude, subjective norms, and perceived behavioural control that systematically separate between the intention to adopt and non-adoption organizations in a cross-national setting. Accepting that E-HRM obviously is not a strictly universal practice, it is appropriate for a certain type of organizations while inappropriate for other organizations. The above findings hence contribute to our understanding of the basic technology factors of E-HRM.

The limitation of the research derives, first of all, from the fact that the sample of respondents was small in order to consider the results of the research applicable to the overall population of Malaysian HR professionals. Therefore, the ultimate aim is to extend this research to a bigger number of HR professionals. Advanced IT-based HR systems can off-load administrative tasks, freeing up HR professionals for more value-adding roles. More importantly, they offer the potential for HR to collect and analyze data to yield knowledge about the effectiveness of various HR approaches and about the feasibility of various strategic paths given the human capital of the firm. This research need to be continued (quantitative research) in order to prove the factors towards E-HRM adoption. Therefore, it is suggested that further study is warranted in this area.

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