Why Examining Adoption Factors, HR Role and Attitude towards Using E-HRM is the Start-Off in Determining the Successfulness of Green HRM?

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Abstract—**This study utilized a quantitative approach where questionnaires were used to collect data from 201 E-HRM users. We analyzed the data using SmartPLS version 2.0.M3 for two stages related to the measurement model and the structural model. The result suggests that perceived ease of use, perceived usefulness, E-HRM trust, strategic partner, and change agent have a significant effect on attitude towards using E-HRM. However, administrative expert and employee champion have no significant effect on attitude towards using E-HRM. The study also found that E-HRM trust has a positive relationship with perceived usefulness. The paper makes an important contribution to the emerging E-HRM literature, in that few previous studies have examined these variables through the Technology Acceptance Model.**

Index Terms—**attitude, E-HRM, HR role, perceived ease of use, perceived usefulness, trust**

I. INTRODUCTION

Green HRM gained its unique position in recent research since the awareness on environmental management and sustainable development has gradually arisen. The emergence of Green HRM is not limited to awareness toward environmental concern (e.g., reduced wastes) but also to the extent of improving the social (e.g., work-life balance) and economic well- being (e.g., sustain profits).

Green HRM has actually holds and supports the paradigmatic understanding of the concept of 'triple bottom-line'. In other words, the Greening HRM involves specific HR's policies and practices aligned with the three sustainability pillars–environment, social and economic balance.

The field of Green HRM is young [1], [2]. Reference [2] further added 'in order for Green HRM to develop and mature, scholarship that addresses a broad array of issues is needed' (p. 104). The Green HRM literature is largely a Western one and, given the importance of Asian economic development for environmental management, this is an important gap for future studies to reduce [1]. Reference [1] suggested that Green HRM has

considerable potential as a management research area, but that academic research is rather lagging behind in practice, given the imbalance between practitioner and academic publications. The gap includes the green scope, coverage, a process model and research agenda [3]. Thus, it is useful to first spotlight on several scopes that have been investigated by recent research related in order to strengthen the understanding of 'Green HRM'.

Transformation of HRM activities from manual conduct toward automatic by using technologies is designed to address solution of this problem. Technologies implementation into HRM activities is also known as Electronic HRM (E-HRM). E-HRM's implementation in organization has ability into promote sustainability as it reduces environmental, social and economics' negative consequences. For example, by using technologies, HR managers received improved quality of information of sick leave administration and employees could fasten their search of documents [4]. E-HRM facilitates strategic decision making, automate HR's routines, brand organizations and improve organizational image, reduced HR's administrative burden, and empower managers through development and support [5]. The automation of HR's systems simultaneously helps in reducing environmental waste (e.g., paper, staples, files) and social waste (e.g., process' time for searching documents and decision making), and economical waste (e.g., cost related with preparing documents, labours' salary due to extra time of working) of conducting HR's task. The sustainability outcome brought to idea that E-HRM should be appreciated as one of the initiatives of Greening HRM in organization.

Greening HRM will not solely effective with the physical implementation (e.g., E-HRM) but the most important thing is how this could be integrated with key values and mindset of employees in the organization. Reference [6] emphasized that complexity of designs and evaluation related with Green HRM processes could be the barrier to make it success. Little is known that attitude toward E-HRM is the start-off in determining the successfulness of Green HRM. In order for an 'environmental action-based company' to be successful, it must be driven by the human resource factor [7].

II. E-HRM

The term of E-HRM was first used in the late 1990's when "e-commerce" was sweeping the business world [8]. HRM departments using information and communication technologies (ICTs) is becoming an increasingly important phenomenon commonly referred to as E-HRM [8]. E-HRM can be specifically defined as administrative support of the HR function in organizations by using internet technology [9]. E-HRM is defined as 'a way of implementing HRM strategies, policies and practices in organizations through a conscious and directed support of, and/or with the full use of, web-technology-based channels' [10, p.335], [11]. Reference [12] defined E-HRM as 'an umbrella term covering all possible integration mechanisms and contents between HRM and Information Technologies aiming at creating value within and across organizations for targeted employees and management' (p. 507). Meanwhile, reference [13] defined E-HRM to using computer-based technologies to put HR activities in the hands of "customers".

III. GAP IN E-HRM RESEARCH

E-HRM as a research stream is only recently emerging, partly as a consequence of the technology advancements [7]. The involvement of academia in this topic is quite recent and yet to find a serious answer [11], [14]. But reference [15] finds that it is actually in the increasing trend. The study on E-HRM is yet to take effect worldwide but eventually more popular in the US and European countries [14].

Much discussion exists in the academic literature about the potential goals of E-HRM, but few scholars have looked at what factors have an impact on this [10]. Reference [16] highlighted that in terms of scholarly activity, however, surprisingly little research has been conducted on the impact of IT on HR. A small number of academic studies have investigated this issue. For example, reference [11] found that individual assessment of E-HRM applications (perceived quality of the content and the structure of E-HRM applications) have a significant and positive effect on HRM technical and strategic effectiveness.

Previous research [4], [9], [11], [16], [17] have examined variables in the Technology Model and Theory in the context of E-HRM. The TAM describe that certain factors may have significant impact on the attitude of employees. With some adaptations from this theory, this paper considers the mindset of employees (e.g., perceived ease of use, E-HRM trust, and HR roles) as well as the key values perceived by the employees (e.g., perceived usefulness of the E-HRM implementation) to be the stimulators of positive attitudes toward E-HRM adoption. Consequently, the positive attitudes towards using E-HRM will impact the success of Greening HRM.

Building upon Technology Acceptance Model, a study [4] conducted a qualitative study at a public sector organization that aimed to explore the relationships between the perceived usefulness and ease of use of E-HRM tools and HRM effectiveness as seen by two different social groups: line managers and employees. Reference [16] investigated the effects of language standardization on the acceptance and use of E-HRM systems in foreign subsidiaries by adopting Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT). Results of a study [10] demonstrated that e-HRM is introduced in order to improve efficiency, service delivery, standardization and organizational image, to empower managers and transform HR into a more strategic function. They also found that HR staff had more time and information to support the organization in achieving its business strategy.

To partly close the knowledge gap, this paper presents the results of a quantitative study aimed at gaining insights in the contribution of assessment of E-HRM to attitude towards using E-HRM.

IV. CONCEPTUAL MODEL AND HYPOTHESES

Fig. 1 presents a conceptual model of the relation of the five variables: perceived ease of use, perceived usefulness, E-HRM trust, HR roles, and attitude. It indicates that perceived ease of use, perceived usefulness, E-HRM trust, and HR roles–the four primary independent variables, lead to the linkage of attitude towards using E-HRM. In addition, E-HRM trust affects perceived usefulness.
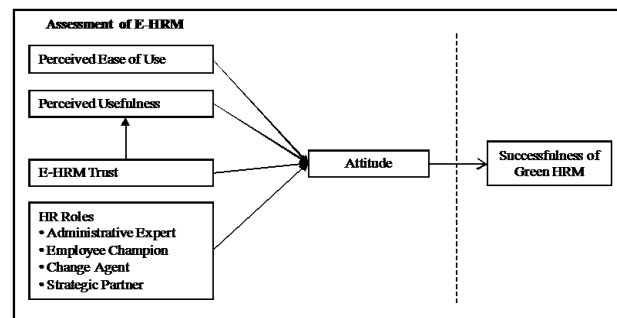

Figure 1   Conceptual model

A. Perceived Ease of Use and Perceived Usefulness and Attitude

Attitude is defined as the degree of E-HRM user's positive feelings about using E-HRM technology. Perceived ease of use is defined as 'the degree to which a person believes that using a particular system would be free of physical and mental effort' and perceived usefulness is defined as 'the degree to which a person believes that using a particular system would enhance his/her job performance' [18]. Several studies in E-HRM have demonstrated that there is a positive relationship between perceived ease of use and perceived usefulness and attitude [19], [20], [21], [22], [23] and between perceived usefulness and attitude For example, [19] examined on a model extension of the attitude towards using E-HRM by linking attitude to E-HRM continuance usage intention among E-HRM users. The study found that perceived ease of use and perceived usefulness were positively related to attitude. Reference [20], [21], [22], [23] investigated the determinants of attitude towards E-HRM among HR professionals in Malaysia, all studies

confirmed that perceived usefulness and perceived ease of use were positively related with attitude towards using E-HRM. This leads to the first and second hypothesis within the research model:

H1. Perceived ease of use of E-HRM has a direct positive impact on user's attitude towards using E-HRM.

H2. Perceived usefulness of E-HRM has a direct positive impact on user's attitude towards using E-HRM.

B. E-HRM Trust and Perceived Usefulness

Trust refers to 'the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party' [24]. The foundation of the E-HRM system has been on the trust that users belief for it. Uploading important personal documents and store the sensitive data in the E-HRM system is due to the belief that the parties being involved in the system will keep the data confidentially on the basis of trust. In effect, hey confidence in the system that will consequently be more willing to use E-HRM technology. Previous IS research discovered the importance of addressing the role of trust in influencing perceived usefulness (e.g., [25], [26], [27]). Trust in E-HRM is therefore recognized as a major concern in influencing perceived usefulness of E-HRM. However, there is a lack of research examining the influence of trust in E-HRM in relation to perceived usefulness of E-HRM. This leads to the third hypothesis:

H3. Trust towards E-HRM has a direct positive impact on perceived usefulness of E-HRM.

C. E-HRM Trust and Attitude

Users' trust in E-HRM is believed to play a pivotal role in influencing the positive attitude towards using the system. Due to the importance of trust in terms of reducing risk facilitating adoption usage behavior, we incorporate E-HRM trust in our research model and further propose a positive link between trust and attitude towards using E-HRM. Recent IS research demonstrated that trust influences attitude [28], [29], [30]. In E-HRM context, the following hypothesis is posited:

H4. Trust towards E-HRM has a direct positive impact on user's attitude towards using E-HRM.

D. Human Resource Roles and Attitude

E-HRM systems are argued to be transforming the role of HR by facilitating the transfer of transaction processing responsibilities to employees, managers and other third parties [16].

Role of the HR department typology is widely cited and perhaps the best known is Ulrich's (1997) typology. The typology defines people and process aspects of HR roles, and operational and strategic activities. Ulrich emphasizes that HR professionals do not have to fulfill each of the four roles themselves; depending on the processes designed to reach the goal, line managers, outside consultants, employees, technology or other

delivery mechanisms may share the work. The allocation of HR activities to different parties will vary depending on the organization.

In Ulrich's model of the role of the HR department, administrative expert concerns more with process efficiency that involve people and most of the HR function's time is spent on this role. This role "requires that HR professionals design and deliver efficient HR processes for staffing, training, appraising, rewarding, promoting, and otherwise managing the flow of employees through the organization." As employee champion, requires the HR function to know the concerns of employees and spend time talking to them and listening to their concerns rather than processes. The HR role as change agent, is that of a facilitator, involving modeling change to other departments, being a positive advocate of change across the entire organization, resolving employee issues arising from change, and embedding change by implementing efficient and flexible processes. The final role, strategic partner, HR must make sure that its practices, processes, and policies complement the overall organizational strategy. It must also develop the capacity to execute that strategy in the minimum amount of time. Ulrich (1997) mentioned that "the strategic HR role focuses on aligning HR strategies and practices with business strategy".

Based on a research, [9] proposed that a manager or shop-floor employee preferring administrative expert role is expected to have a positive attitude towards E-HRM. Reference [23] found a positive relationship between administrative expert role and attitude towards E-HRM. Therefore, we extend the proposed relationship by [9] and [23] to E-HRM users that are in favor of administrative expert role is also expected to be supportive of E-HRM, which is reflected by a positive attitude towards E-HRM. Thus, it can be summarized that:

H5a. Role of HR as administrative expert has a direct positive impact on user's attitude towards using E-HRM.

Role of HR as employee champion has been found negatively related to attitude towards using E-HRM [9]. Therefore, we offer the following hypothesis to guide research:

H5b. Role of HR as employee champion has a direct negative impact on user's attitude towards using E-HRM.

Information technology has been cited as a critical driver of HR's transition from a focus on administrative tasks to a focus on serving as a strategic business partner [31]. Previous studies [9] and [32] hypothesized a positive relation between preferences for the strategic partner and change agent roles on the one hand and a positive attitude towards E-HRM on the other hand. Reference [20] confirmed that change agent and strategic partner role were positively related with attitude towards using E-HRM. Hence, our next hypotheses are:

H5c. Role of HR as change agent has a direct positive impact on user's attitude towards using E-HRM.

H5d. Role of HR as strategic partner has a direct positive impact on user's attitude towards using E-HRM.

We have assembled our ideas in a conceptual model as shown in Fig. 1.

V. METHOD

A. Sampling and Data Collection

Data were collected from E-HRM users within various multinational companies in Malaysia. Therefore, the unit of analysis in our research is the individual user of E-HRM. The questionnaire survey was the main form of data collection. The questionnaires were distributed personally by the researcher with the help from an officer/coordinator from either the human resource or administration department within the organization. A covering letter explaining the purpose of this study was attached together, assuring them of the confidentiality of their responses, and instructing them to complete the questions, seal and return the completed questionnaires using the attached envelope. Out of the 300 questionnaires distributed to E-HRM users in various organizations, 201 usable questionnaires were returned, yielding a response rate of 64.3 percent, which is considered acceptable.

B. Research Instruments

In order to empirically test the conceptual model, this study adopts a 20-item-questionnaire by [33] which consists of four dimensions of HR roles, namely strategic partner, change agent, employee champion, and administrative expert. The questionnaire items of perceived usefulness (4 items), perceived ease of use (5 items), and attitude (5 items) were adopted from [34] and trust (four items) was adopted from [35]. A thirty-eight-item questionnaire was designed in English formats with a seven point Likert scale, ranging from strongly disagree (1) to strongly agree (7).

VI. RESEARCH ANALYSIS AND RESULTS

We analyzed the data using SmartPLS version 2.0.M3 [36] for two stages related to the measurement model and the structural model. The SmartPLS structural equation modeling technique is recommended when the model is complex, the sample size is quite small, or assumptions of normality are not satisfied [37]. For our research, the model was complex.

A. Characteristics of Samples

There were 61 male and 140 female respondents. The average age and working experience with current organization of the sample was 34.5 and 5.4 years, respectively. They we dominantly Malay (62.2%), followed by Chinese (58.0%), Indian (6.5%), and others (2.5%). With regard to marital status, more than half of the respondents were married (64.7%) and 35.3% were single. Out of 201 respondents, 50.7% had achieved a bachelor degree. Users from two types of multinational companies were represented in the sample (i.e. manufacturing, $n = 139$, service, $n = 62$).

TABLE I. MEASUREMENT MODEL

Constru	Item	Loa-dings	AVE	CR
Admin	AE1	0.897	0.774	0.945
Expert	AE2	0.851		
	AE3	0.869		
	AE4	0.897		
	AE5	0.883		
Attitud	ATT1	0.844	0.779	0.946
	ATT2	0.884		
	ATT3	0.932		
	ATT4	0.858		
	ATT5	0.892		
Change	CA1	0.913	0.844	0.964
Agent	CA2	0.915		
	CA3	0.913		
	CA4	0.915		
	CA5	0.937		
Employ	EC1	0.868	0.773	0.944
Champi	EC2	0.887		
	EC3	0.934		
	EC4	0.908		
	EC5	0.793		
Ease o	PEU1	0.893	0.820	0.958
Use	PEU2	0.917		
	PEU3	0.924		
	PEU4	0.869		
	PEU5	0.924		
Usefulne	PU1	0.938	0.878	0.966
	PU2	0.937		
	PU3	0.937		
	PU4	0.937		
Strategi	SP1	0.872	0.829	0.960
Partne	SP2	0.921		
	SP3	0.917		
	SP4	0.926		
	SP5	0.916		
Trust	Trust3	0.492	0.563	0.701
	Trust4	0.941		

Note: Trust3 and Trust4 were deleted due to low loading
AVE = Average Variance Extracted, CR = Composite Reliability

First we tested the convergence validity by assessing the loadings, AVE and composite reliability values as presented in Table I. As suggested by the literature the

loadings were all above the cut off value of 0.7, composite reliability was also all above 0.7 and the average variance extracted were also all above 0.5 suggesting that the measurement items were reliable and valid.

Next the discriminant validity was assessed by comparing the square root of the average variance extracted and the correlations as suggested by [38]. They suggested that if the square root of the average variance extracted is greater than the values in the column and row then we can conclude that the measures are discriminant. Based on discriminant validity result, all the values in the diagonal are greater than the values in their respective rows and columns thus indicating our measures are discriminant.

The analysis presented in Table II shows that all the predictors can explain 62.3% ($R^2 = 0.623$) of the variance in attitude towards E-HRM. The predictive relevance analysis also yielded a Q^2 value of 0.484 which is indicative of a good model [39]. From Table II it can be seen that out of the 8 hypothesis 6 were supported (H1, H2, H3, H4, H5c and H5d) and two were not supported (H5a and H5b). A closer look shows that the perceived ease of use and perceived usefulness were the 2 main drivers of attitude towards E-HRM.

TABLE II.   REGRESSION ANALYSIS

Hypo-thesis	Relationship	Std. Beta	Std. Error	t-value	Decision
H1	Ease of Use -> Attitude	0.434	0.06?	6.896**	Supporte
H2	Usefulness -> Attitude	0.318	0.05?	5.713**	Supporte
H3	Trust -> Usefulne	0.522	0.05?	8.939**	Supporte
H4	Trust -> Attitud?	0.068	0.05?	1.308*	Supporte
H5a	Admin Expert -? Attitude	0.049	0.06?	0.753	Not Supporte
H5b	Employee Champ? -> Attitude	0.004	0.06?	0.072	Not Supporte
H5c	Change Agent -? Attitude	0.227	0.09?	2.344**	Supporte
H5d	Strategic Partner Attitude	0.277	0.08?	3.283**	Supporte

VII.   DISCUSSION

The results indicate that key determinants of user's attitude towards using E-HRM were perceived ease of use, perceived usefulness, E-HRM trust, change agent, and strategic partner. The present study also discovered that E-HRM trust has a positive relationship with perceived usefulness.

Specifically, once a user perceives an E-HRM as easy to use, he or she will develop a positive attitude towards the use of E-HRM. Thus, perceived ease of use affects the attitude towards using E-HRM. The result also indicated that E-HRM users are more likely to have a favorable attitude toward using E-HRM if they feel that using them as a useful tool if they perceive that using them is not complicated. This result is consistent with previous E-HRM research on the relationship between perceived ease of use and perceived usefulness and attitude towards using E-HRM [19], [20], [21], [22], [23].

For the relationship between E-HRM trust and attitude towards using E-HRM, we could infer that E-HRM users are confident to use E-HRM system if element of trust exist in their belief, and thus will influence their positive attitude towards using E-HRM. This result is consistent with previous IS research on the relationship between trust and attitude towards using technology [28], [29], [30].

Hypothesis 5c and 5d were related to the role of HR as change agent and strategic partner as a predictor for attitude towards E-HRM. This positive relation is expected because of the possibility E-HRM provides an HR Manager to focus on change agent and strategic partner role which is strategic HR tasks as opposed to more operational tasks. E-HRM users may also benefit from such a shift in tasks for HR professionals because E-HRM users prefer to focus on operational tasks which are much easier as compared to strategic level tasks. Therefore, their attitude towards E-HRM is positive. Such findings confirm the discoveries in recent E-HRM studies investigating the relationship between these variables [9], [20].

E-HRM trust has been found to play significant positive influence on perceived usefulness as expected. This result implies that without trust in E-HRM system, perceived usefulness sometimes cannot guarantee that E-HRM users will actually use the E-HRM system in the organization. Other research has also shown that trust can influence perceived usefulness [25], [26], [27].

VIII.   CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The major contributions of this study can be described as below. First, the proposed research model was different from other E-HRM models because it included E-HRM trust as well as HR roles that seemed to be highly relevant to the user's attitude towards using E-HRM. Based on the present's study findings, this suggested that the model relative and adequately provided the insights for E-HRM and can be further extended to investigate the E-HRM adoption.

Even though rigorous research procedures were used, this study had some limitations that could be addressed in future studies. First, data collection was geographically limited to Malaysia, and all informants were E-HRM users. In future studies researchers should randomize their sample to include HR professionals who are the best informants to answer on HR roles. Furthermore, future studies should include other geographical areas outside of Malaysia to make more generalizations from the data.

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