

Electronic Human Resource Management Activities for Educational Institution Excellence

Afridayanti Surbakti¹, Ritha F. Dalimunthe², Sirojuzilam³, Elisabet Siahaan⁴

Abstract

Purpose: This Research is to analyze the relationship between "The Role of Competitive Advantage in Mediating the Influence of Customer Relationship Management, Marketing Innovation, on Marketing Performance". Theoretical Reference: The study was conducted on retail companies in Indonesia using a quantitative approach, and responses from 175 retail owners/managers were obtained via the random sampling method. Method: The analysis technique used is structural equation modeling (SEM) using SmartPLS software. Results and Conclusion: The research findings reveal that retail competitive advantage can be achieved through the implementation of customer-oriented CRM. CRM is also able to support Marketing Innovation, which will further increase competitive advantage. It is important for retail companies to strengthen the implementation of customer relationship management in order to achieve Marketing Performance because CRM is proven to increase the ability of innovation and competitive advantage of retail companies. So it is clear that Marketing Performance is largely determined by Competitive Advantage, Indicates that for the wood furniture industry, the only options available to stay competitive are to use both semi-customized and fast order fulfillment strategies. Implications of Research: implication of research availability of Customer Relationship Management and Marketing Innovation. Further and in-depth research is needed on large samples from various regions in Indonesia's. Value: The novelty of this study is that factors can affect the marketing performance in family business at Indonesia.

Keywords: E-HRM, Contextual Technology, Actor and External Environment.

1. Introduction

Higher education is one of the pillars of human resource development and agents of change in improving a country's quality of human resource performance. Rapid developments and environmental changes have affected universities, including technological and socio-economic advances. It causes a high level of business competition in universities, especially private universities. Such conditions require that every private university explore and develop existing resources to have a competitive advantage. (Tobari., 2015; Haloho & Purba., 2019). The performance of the best universities in Indonesia nationally is still dominated by state universities such as University of Indonesia, University of Gajah Mada, and Insitute od Agricultural Bogor (<https://www.webometrics.info/en/asia/indonesia>), and since 2015-2020 there is only 1 (one) private university in North Sumatra which is ranked in the top 100 best universities

¹ Doctoral Program of Management Science, Universitas Sumatera Utara, Medan, Indonesia

² Faculty of Economy and Business Universitas Sumatera Utara, Medan, Indonesia

³ Faculty of Economy and Business Universitas Sumatera Utara, Medan, Indonesia

⁴ Faculty of Economy and Business Universitas Sumatera Utara, Medan, Indonesia

in Indonesia, namely the Muhammadiyah University of North Sumatra which is in cluster 2, which is ranked 75 (analisadaily.com, 2019).

One of the most important aspects of university competitive advantage is the aspect of research output (Wahyudin., 2015). The research outputs at universities are the form, appearance, or codification of research results that can be seen from scientific publications, prototypes, patents and other intellectual property from research reports (Permenristekdikti No. 20 of 2018) and other outputs such as: textbooks or textbooks with ISBN, models, prototypes, designs, works of art, social engineering, appropriate technology, goods and services, and policies (<http://simlitabmas.ristekdikti.go.id>). However, it is different from the results of the research by (Chou et al., 2013) in Taiwan, which strongly rejects the use of research published in the journal Science Citation Index (SCI) and Social Sciences Citation Index (SSCI) because it ignores the humanities and social sciences in assessing university performance. The competitive advantage of universities in the city of Medan seen from the performance of lecturers at private universities is not optimal. Data in the Dikti Database for July 2020 can be seen, from the number of lecturers as many as 13,591 people, only 43 people (0.32%) have the functional position of professor (professor), 574 people (4.22%) have the position of Associate Professor, 2,380 people (17.51%) have the position of Assistant Professor and the remaining majority as many as 3,456 (25.43%) are Associate Lecturer positions.

Factors that influence competitive advantage in an organization can be influenced by contextual technology, organizational readiness, actor and the external environment. The e-HRM activity implements all functions in technology-based human resource management to make the entire process simpler and more concise. The competitive advantage of an organization can be increased by increasing contextual technology, organizational readiness, actors and the external environment through e-HRM activities in the organization. E-HRM is a form of planning, application and implementation of information technology that is important in the network and supports collective actors who must be more than two individuals to carry out human resource activities together (Juana., 2012). E-HRM is growing to incorporate all HRM policies in an organization. In e-HRM, line managers can evaluate and develop work programs using computer devices in the e-HRM system, training and planning, assessing the evaluation of labor costs and checking indicators for each absenteeism and employee turnover (Al-Hmouze, 2016).

The main purpose of implementing e-HRM in organizations, according to (Wahyudi & Park, 2014; Parry & Tyson, 2011; Lin, 2011), is to improve efficiency and effectiveness, namely to reduce costs, improve services, increase organizational potential, organizational innovation and increase the value of human resource management functions. The organization's strategic capabilities have the potential as a major competitive advantage that can be provided by e-HRM, which can emerge through a combination of strategically useful information in the planning process, support cultural change and increase organizational value. At this level, e-HRM supports the achievement of competitive advantage and can be the main differentiator between one organization and another because the organization has unmatched capabilities by other parties. Therefore, the adoption and implementation of e-HRM are very important and a major determinant of success in organizations (Pietrewicz., 2019). E-HRM performs various functions, from simple storage and data communication to more complex transactions. Therefore, the main purpose of implementing e-HRM to ease administrative and transactional burdens on HR functions can be fulfilled. Furthermore, the rapid development of technology makes the e-HRM function also experience development. Based on the various explanations above, this study wants to explore: 1. Does contextual technology have a positive and significant effect on e-HRM activities at private universities in Medan City? 2. Does the organizational readiness factor have a positive and significant effect on e-HRM activities at private universities in Medan City? 3. Do actorial factors have a positive and significant effect on e-HRM activities at private universities in Medan City?

4. Do external environmental factors positively and significantly affect e-HRM activities at private universities in Medan City?

2. Literature Review

Resource-Based View (RBV) theory is the main theory (grand theory) used in this study. RBV theory, or organizational resource-based view theory, is a framework that emphasizes understanding the sources of an organizational competitive advantage, which proposed in 1959 (Nason & Wiklund., 2015). This theory was later developed into the Ricardian theory of rents put forward by Barney & Arikan (2001), which states that organizational competitive advantage comes from unique and intangible internal organizational inputs, such as knowledge, leadership and culture (Wang, 2014). The RBV model believes that core competencies are the basis of competitive advantage for the company/organization, the key to strategic advantage, and the ability to earn above-average profits. The RBV model can be traced from the work of (Wernelfelt 1984; Conner 1991; Montgomery 1995), which was developed from (Penrose 1959; Richardson (1972). Organizational resources may include all assets, capabilities, administrative processes, organizational attributes, information, knowledge, and others controlled by the organization and enable the organization to formulate and implement strategies that will increase its efficiency and effectiveness.

Technology Acceptance Model (TAM) is an applied theory used in this study and by other researchers such as: (Parvari et al., 2015; Bamel et al., 2014; Huang & Martin-Taylor, 2013; Maier et.al., 2013; Yusliza & Ramayah, 2011; Yusoff et al., 2010; de Juana Espinosa and Lujan-Mora, 2010; Bondarouk et al., 2009; Ruel & Bondarouk, 2008; Voermans & Veldhoven, 2007). This theory is adapted from the Theory of Reasoned Action (TRA), which was introduced by Ajzen and Fishbein in 1980 and proposed by Davis in 1989. TRA explains the reasons that underlie a person to do an activity because he has a will or intention of himself or of his own accord.

TAM theory explains the benefits of information systems and their ease of use, behavior, needs and users of information systems. TAM is a theory that can explain the perception of information technology users. The user's perception will affect the interest in using the information technology. In the TAM model, the level of acceptance of the use of information technology is determined by five constructs, namely, perceived ease of use, perceived usefulness, attitude toward using, behavior to continue using (behavioral intention to use) and actual system usage conditions. Of the five constructs, two dominant factors influence the technology system, namely the perception of usefulness and ease of use of technology. The development of information and communication technology (ICT) is an innovation or new breakthrough to improve service quality, contribute to changes in structure and function as well as improve performance and effectiveness and is a new way to bring organizations to success (Bondarouk & Ruel, 2014; Parry, 2011). ICT development, which is currently being developed and used by various organizations, is Electronic Human Resource Management (e-HRM).

Johnson et al., (2015) mention that e-HRM is seen as an application of computers and telecommunications equipment to collect, store, retrieve, and disseminate data for business purposes. Marler and Fisher (2014) explain that e-HRM is a set of patterns used to manage HR in organizations to create a competitive advantage and realize organizational goals. E-HRM is also defined as creating and implementing quality human resource management (HRM) based on information and communication technology and a set of innovative ways that function to overhaul traditional systems in organizations to improve human resource performance and provide a competitive advantage for the organization. organization (Tavakoli et al., 2015; Bondarouk et al., 2013). Thus, it is clear that the main characteristic of e-HRM is that it is based on ICT, so that the activities supported by e-HRM are no longer completely dependent on face-to-face meetings.

The adoption of e-HRM helps employees to catch up in day-to-day work (Tavakoli et al., 2015 & Gachunga et al., 2014), providing the HR function with the opportunity to create new avenues to contribute to organizational effectiveness such as knowledge management and intellectual capital creation. and social (Sokolov & Zavyialova., 2020). E-HRM makes it easier for employees to access information. In addition, Furthermore, their duties and obligations and access data and process various data (Tabiu & Nura., 2013, Berber, Dordevic & Milanovic., 2018). Based on several definitions of electronic, human resource management (e-HRM) above, it can be concluded that e-HRM is a tool or application based on new information and communication technology that aims to implement human resource strategies, provide policies and practices within the organization, with time and cost efficiency to improve business processes and competitive advantages.

Technology is the most important factor for universities to have when they want to adopt e-HRM. The adoption of e-HRM in universities can improve service quality, efficiency, and reliability so that, in the end, it can increase the university's competitive advantage. Research conducted by Diana and Kurniawan (2014) states that there is a positive and significant influence between technology variables (system quality, information quality and service quality) on the acceptance of e-HRM at Bina Darma University. The results of this study are in line with research conducted by other researchers in various countries who researched various organizations, that technological factors affect the implementation of e-HRM in an organization (Gani and Anjum., 2017; Stone, Deadrick, Lukaszewizki & Jhonson., 2015; Saleh., 2014; Lin., 2011). However, the important factors that must be considered in technology are adequate infrastructure and human resources who have the appropriate information technology expertise to facilitate adoption.

Technology influences the adoption of e-HRM because it is a type of innovation adoption in organizations, in this research university. Information technology implemented in the human resource department process will help universities to be more effective and efficient in carrying out their activities. Good collaboration between HRM and IT has also been identified as a critical success factor in adopting and using e-HRM. Good collaboration between the two can ensure the successful adoption of technology into the HRM process so that the need for quality HR services at universities can be met, such as: e-recruitment, e-selection, e-compensation, e-learning and university e-performance. Research conducted by Subhatree and Vasantha (2020) says that technology affects e-HRM adoption because many routine activities in organizations can be done more quickly and concisely when using technology.

H1: Contextual technology factors have a positive and significant effect on e-HRM activities.

Organizational readiness affects e-HRM activities. The organizational readiness factor is a variable centered on e-HRM functionality, for example, related to the benefits of using e-HRM for various HRM activities within universities. This opinion is in line with research by Haddad, Ameen & Mukred (2018), Yoon & George (2013) but differs from the results of research by (Xin, et al., 2014; Wang & Ahmed., 2009). Organizational readiness is influenced by organizational dimensions, which include employee involvement starting from the process of introducing a new system to the change transition process, internal organizational capacity, acceptance, leadership, relationship patterns and work mechanisms between organizational members (Ochurub., 2012; Straatmann et al., 2016; Nordin., 2011). One's position in the organizational structure also affects the organization's readiness to change, especially concerning e-HRM adoption. Organizational readiness is influenced by various individual dimensions, including life experience, life values, organizational traits and commitment, job satisfaction, knowledge of the change, and emotional intelligence (Saragih., 2015; Nordin., 2011). Aspects of old habits and mindsets can also affect organizational readiness to change, where employees

who are accustomed to working with long and slow work patterns will tend to be in a comfort zone that makes it difficult for employees to change. Changes in organizations related to e-HRM implementation can lead to a radical transformation of HR processes and capabilities, as new capabilities are required for HR professionals to apply technology and operate administratively, relationally and strategically (Reddington et al., 2011; Muafi et al., 2012; Chakraborty & Mansor., 2013). In line with Ruel et al., (2004) stated that e-HRM is a driving factor for changing HRM in an organizational readiness from a bureaucratic approach to a market approach.

Adopting e-HRM in an organization can support line managers to play a more active role in organizational activities because e-HRM helps improve communication between managers and teams, improves the quality of HR activities through a well-designed intranet communication system, and improves employee data collection systems. The adoption of e-HRM also increases the type and quality of HR information managers use in making managerial decisions. In addition, the use of HR intranet applications in HR activities affects the perception of service user satisfaction related to the HR function. Following the research results conducted by Al-Dmour et al., (2013), who conducted research on shareholding organizations in Jordan, and Bellamy & Tang., (2017) in Southeast Michigan stated that organizational readiness is very important in e-commerce adoption. - HRM that uses technology. In this regard, organizations must meet various requirements to feel the benefits of implementing e-HRM (Ceric., 2017).

H2: The organizational readiness factor has a positive and significant effect on e-HRM activities.

Employees are an important factor that organizations must own so that they can implement e-HRM well, and this is also related to the level of education they have, experience, education and training (Part., 2012; Sari., 2018; Werner., 2012; Chatraborty & Manso.r, 2013). For example, according to Sari (2018), who researched at Udayana University in Bali, Sareen (2015) in the National Capital Region of India, Diana & Kurniawan (2014) at Bina Darma University, Chatraborty & Mansor (2013), Part (2012), and Werner (2012) showed that the actorial characteristics have a positive and significant effect on the effectiveness of the use and performance of e-HRM. Meanwhile, according to Allui & Sahni (2016), higher education in Saudi Arabia has HR problems in e-HRM practices. Furthermore, according to Yogatama (2016), e-HRM can be used without special abilities in using e-HRM. Therefore, organizations need employees who always improve their abilities, especially regarding the development of ICT in the implementation of e-HRM.

Research conducted by Ngai et al., (2008) in Hong Kong found that HR practitioners' perception of the implementation of e-HRM is very good because the adoption of e-HRM can help managers get information quickly and accurately. However, organizations will use their employees differently because expectations, perceptions, and understandings of HR policies and practices are also different. After all, e-HRM activities require employee interactions with external systems and environments (Arjomandy., 2013; Bondarouk., 2015). It happens because HR professionals' implementation of the consequences of HR innovation in each organization will be based on the strategic interests of each HR policy and practice. Line managers who carry out HR activities in organizations may not implement HRM innovations properly and correctly, because their perceptions of e-HRM policies and practices do not align with top management. Therefore, the adoption and implementation of e-HRM cannot be determined in advance because its implementation is influenced by the expectations, perceptions and understanding of the implementers about e-HRM policies and practices.

Organizational challenges in a rapidly changing environment require organizations to shift the role of HR from administrative 'actors' to 'strategic business partners' (outsourcing), focusing on key long-term issues related to management, HR development

and employment relations (Igbinomwanhia, et al., 2013). HR outsourcing is a strategy that enables the HR function to increase the challenges posed by today's business environment by allowing time to concentrate on the core strategic issues that ensure that an organization can achieve competitive advantage through the people it employs, and the practices that truly make it a business partner. Value-driven strategies (e.g., training, payroll, transportation, etc.). According to Hoang (2018), management decisions to use effective HR outsourcing can increase job stability, positively affect the lives of HR staff, increase US business profitability, and contribute to a stable US economy. Meanwhile, according to Cicek & Ozer (2011), outsourcing is considered one of the methods organizations use to strengthen their core competencies to allocate their resources efficiently. The relationship between HR outsourcing and financial performance is perceived as positive for small organizations but negative for large organizations, and the positive relationship between HR involvement, and organizational readiness effectiveness is shown to increase in HRM activities (Sheehan and Cooper, 2011).

H3: Actoral factors have a positive and significant effect on e-HRM activities.

Research by Aldmour, Love, & Alzubi (2013) found a significant relationship between the influence of government regulations and regulations on the implementation of e-HRM. Agree with the research of Oliveira et al. (2019); Chong & Olesen (2017). On the other hand, government involvement, policy, and support motivate companies to adapt e-HRM. The government base of the e-HRM industry, such as taxation, leads to providing better services to clients at reliable prices. In addition, governments have a responsibility to bridge ICT companies and organizations. According to Dissanayake & Nandasena (2019), Badhurudheen (2018) and Khan, Hasan, & Rubel (2015), it is also proven that the external environment element has a considerable influence and relationship on the success of e-HRM. In contrast to the research results of Shah, Michael & Chalu (2020), Al-Dmour (2014) and Ocloo, et al., (2018) stated that government policies and support were not proven to be important with the level of e-HRM implementation.

The study conducted by Al-Dmour & Shannak (2012) highlighted the main determinants in implementing e-HRM in several organizations listed on the Jordan Stock Exchange. The main findings of their study indicate that the level of e-HRM implementation is considered moderate. Around 60% of the variation in the level of e-HRM implementation can be explained by internal factors, while external factors can explain about 14% of the variation. Adopters and non-adopters of e-HRM were found to differ in terms of their internal and external environment characteristics in most cases. The results of the descriptive analysis show that the questions that measure the level of implementation of the e-HRM function are moderate for the organization. Their average indicates the highest level of implementation of the e-HRM function is higher than the average scale above 3, such as employee registration, recruitment and selection, internal and external communication, respectively. These results prove that external factors will impact the HRM function in an organization. Saleh (2014) highlights four main factors that influence the acceptance and implementation of e-HRM technology. These factors are the attitudes accepted by the workforce, organizational features, technological capabilities, and determinants of the work environment. The successful implementation and adoption of e-HRM can also be influenced by various factors such as economic, political, social, cultural, and organizational, technological and environmental factors.

H4: External factors have a positive and significant effect on e-HRM activities.

3. Methods

This research is designed to be verified using a quantitative approach. The location of this research is in all private universities in the city of Medan within the Higher Education Service Institute (Lidikti) Region 1 North Sumatra, namely all universities that are

accredited A and B. The research methods used in this study are descriptive methods and explanatory surveys. The type of investigation used in this study is a causality type because it will examine the causal relationship of the independent variables to the dependent variable. In this study using the census technique, the number of population is the same as the number of samples, which is 385 people. The sampling technique used is probability sampling, which is a sampling technique that provides equal opportunities/opportunities for each element (member) of the population to be selected as a member of the sample. The dependent variable in this study is E-HRM activity, while the independent variables in this study include: contextual technology (TK), organizational readiness (KO), actorial (AK), and the external environment (LE). The statistical tool used in this study is based on SEM-PLS with the WarpPLS statistical tool which can analyze the variant-based SEM model or better known as Partial Least Square. SEM analysis model with WarpPLS can identify and estimate the relationship between latent variables whether the relationship is linear or non-linear.

4. Result and Discussion

Of the 385 questionnaires distributed to the respondents, 309 (80.26%) filled out and returned the questionnaire, while 76 (19.74%) did not return the questionnaire. Before testing the hypothesis, it is necessary to test the proposed research model's measurement model (outer model). The first evaluation that must be done in Warp Partial Least Square (Warp PLS) is the evaluation of the measurement model (outer model). Evaluation of the measurement model for the reflective construct is done by looking at the value of the reliability indicator, namely the variance of the construct indicator. In addition, the overall construct reliability must be measured by looking at the factor loading value of each construct indicator. If the P-value factor loading in this study is less than 0.05 (P-value < 0.05), then the construct indicator has met the criteria (rule of thumb) for the reliability indicator. A measuring instrument or instrument in the form of a questionnaire is said to be able to provide stable or constant measurement results if the measuring instrument is reliable (reliable). It is presented in the following table:

Table 1. Average Variance Extracted (AVE)

Indicator	TK	KO	AK	LE	EHRM
TK	(0.658)	0.635	0.498	0.549	0.532
KO	0.635	(0.693)	0.516	0.571	0.514
AK	0.498	0.516	(0.679)	0.644	0.529
LE	0.549	0.571	0.644	(0.648)	0.603
EHRM	0.532	0.514	0.529	0.603	(0.630)

Source: Data processed 2021

This study tested reliability using composite reliability and Cronbach's alpha coefficient. A construct is reliable if it has a composite reliability value and Cronbach's alpha above 0.70 (Ghozali, 2020).

Table 2. Alpha Cronbach's dan Composite Reliability

	TK	KO	AK	LE	EHRM
R-squared					0,462
Adj. R-squared					0,455
Composite reliability	0,891	0,917	0,91	0,895	0,924

Cronbach's alpha	0,865	0,901	0,892	0,871	0,912
------------------	-------	-------	-------	-------	-------

Source: Data processed 2021

Table 2 explains that the composite reliability value for contextual technology is 0.891, organizational readiness is 0.917, actorial is 0.910, the external environment is 0.895, e-HRM activity is 0.924, and competitive advantage is 0.917. It means that all constructs have met the reliability requirements based on composite reliability. It can be seen that Cronbach's alpha value for each construct is: contextual technology of 0.865, organizational readiness of 0.901, actorial of 0.892, external environment of 0.871, e-HRM activity of 0.912 and competitive advantage of 0.902. It means that all constructs have met the reliability requirements based on Cronbach's alpha value. The adjusted R-squared value in Table 5.14 for the e-HRM construct is 0.455, meaning that the influence of contextual technology constructs, organizational readiness, actorial and external environment on e-HRM activities is 45.5%. While the adjusted R-squared value for the competitive advantage construct is 0.577, which means that the influence of contextual technology, organizational readiness, actorial and external environmental constructs on competitive advantage is 57.7%. According to Ghazali (2020), the adjusted R-squared value in the middle category is 0.45. Also, according to Kock and Lynn, (2012), the value of R-square or adjusted R-square 0.70, 0.45, 0.25 indicates a strong, medium (moderate) and weak model. The maximum limit for this value is 0.70 in the context of PLS, and if it is greater, then it is likely that the model has collinearity problems.

Table 3. Goodness of Fit

	Indeks	P-value	Criteria	Description
Average Path Coefficient (APC)	0,191	< 0,001	< $\alpha_{0,05}$	Accepted
Average R-squared (ARS)	0,521	< 0,001	< $\alpha_{0,05}$	Accepted
Average Adjusted R-squared (AARS)	0,514	< 0,001	< $\alpha_{0,05}$	Accepted
Average Block Variance Inflation Factor (AVIF)	2,225	–	$\leq 3,3$	Accepted
Average full collinearity VIF (AFVIF)	2,119	–	$\leq 3,3$	Accepted
Tenenhaus (GoF)	0,475	–	*	Large
Sympson's Paradox Ratio (SPR)	1,000	–	$\geq 0,7$	Accepted
R-Squared Contribution Ratio (RSCR)	1,000	–	$\geq 0,9$	Accepted
Statistical Suppression Ratio (SSR)	1,000	–	$\geq 0,7$	Accepted
Nonlinear bivariate causality direction ratio (NLBCDR)	1,000	–	$\geq 0,7$	Accepted

Source: Data processed 2021

The resulting Goodness Tenenhaus (GoF) value is 0.475 and is in the large criteria, so it can be concluded that the fit model of this study is very good. Furthermore, for the value of Sympson's Paradox Ratio (SPR), R-Squared Contribution Ratio (RSCR), Statistical Suppression Ratio (SSR), and Nonlinear bivariate causality direction ratio (NLBCDR) produce a value equal to 1, which means that there is no problem with causality in this research model. . The results of hypothesis testing show that:

1. Hypothesis 1, the value of the contextual technology path coefficient (TK) on e-HRM (EHRM) activities is 0.261, which is positive. It means that contextual technology (TK) positively affects e-HRM (EHRM) activities. Meanwhile, the P-value between contextual technology (TK) on e-HRM (EHRM) activities produced is < 0.001, meaning that contextual technology (TK) has a significant effect on e-HRM (EHRM) activities.

2. Hypothesis 2, the value of the path coefficient of organizational readiness (KO) on e-HRM (EHRM) activities is 0.054, which is positive. Therefore, it means that organizational readiness (KO) positively affects e-HRM (EHRM) activities. Meanwhile, the P-value between organizational readiness (KO) and e-HRM activity (EHRM) produced is 0.170, which is greater than the significance level of 0.05 (5%), meaning that organizational readiness (KO) has no significant effect on e-HRM activities. (EHRM).

3. Hypothesis 3, the value of the actorial path coefficient (AK) on e-HRM (EHRM) activity is 0.176, which is positive. Therefore, it means that actor (AK) positively affects e-HRM (EHRM) activity. Meanwhile, the P-value between actorial (AK) on e-HRM (EHRM) activity produced is < 0.001 , meaning that actor (AK) has a significant effect on e-HRM (EHRM) activity.

4. Hypothesis 4, the external environment (LE) coefficient (e-HRM (EHRM) activity is 0.307, which is positive. It means that the external environment (LE) positively affects e-HRM (EHRM) activity. Meanwhile, the P-value between the external environment (LE) and the resulting e-HRM (EHRM) activity is < 0.001 , meaning that the external environment (LE) has a significant effect on e-HRM (EHRM) activity.

The results of data analysis show that contextual technology has a positive and significant effect on e-HRM activities. It shows that there is a positive and linear influence between technology and e-HRM activities. The results of this study are in line with previous research conducted by Diana and Kurniawan (2014), which revealed the fact that there was a positive and significant influence between technology variables (system quality, information quality and service quality) on the acceptance of e-HRM at Bina Darma University. In implementing e-HRM, private universities in the city of Medan should pay attention to aspects related to hardware (maintenance and development of computers, servers, backbones, scanners, etc.), software (Ms. Office, Academy System, e-HRM). library, university WhatsApp, university Facebook and others) and facilities in the university environment such as: internet connection, ICT Helpdesk service and campus wifi. If all these aspects increase, it will increase the activities of web-based HR functions such as: e-recruitment, e-selection, e-compensation, e-learning and university e-performance, which is often referred to as e-HRM. Good collaboration between HRM and IT (e-HRM) is expected to be able to organize university HR management and management and can support decision making by providing information through information technology media in a fast, precise, accurate, and integrated manner. The basic thing that e-HRM can do is the level of accuracy combined with time efficiency. e-HRM in universities is useful for providing speed, suitability, ease of access and updating, and integrating existing resource data. To increase the capacity and ease of control in the overall reporting system. It is in line with Pietrewicz's research literature review (2019), and to build effective and efficient institutions (Moghavvemi 2012), universities, in this case, universities, need technological innovation (e-HRM) and can be the main determinant of success in institutions.

The results of the research data analysis prove that organizational readiness has a positive and insignificant effect on e-HRM activities. Furthermore, it shows that there is no influence between organizational readiness and e-HRM activities in a private university environment in the city of Medan. The results of this study are in line with previous research conducted by Xin, et al., (2014) in the Penang service industry and Molla, Peszynski, & Pittayachawan (2010), (Wang & Ahmed., 2009). However, in contrast to the results of previous research conducted by Haddad, Ameen & Mukred (2018), Yoon & George (2013) found that organizational readiness among organizational factors influenced organizational intention to implement e-HRM significantly. Furthermore, in line with previous research by Esen & Ozbag, (2014), who researched in Turkey, Diana and Kurniawan (2014) at Bina Darma University, Al-Dmou et al., (2013) in Jordan and Wraikat, Bellamy & Tang, (2017) at a non-profit service company in Southeast Michigan, stated that organizational readiness is very important in e-HRM adoption and

implementation. Meanwhile, according to Napier, Amborski & Pesek, (2017), organizational change encourages the adoption of new behaviors, processes, and technologies, in this case, e-HRM, by the actual end-users of the system.

The results of the data analysis in this study are that actorial variables have a positive and significant effect on e-HRM activities. It means showing a positive and linear influence between actorial and e-HRM activities. The results of this study are in line with previous research conducted by Sari (2018), who researched at Udayana University Bali, Sareen (2015) in the National Capital Region of India, Diana & Kurniawan (2014) at Bina Darma University, Chatraborty & Mansor (2013), Part (2012) and Werner (2012) show that actorial characteristics such as: tenure, work experience, age, training, education, and human variables (system use and user satisfaction) have a positive and significant effect on the effectiveness of the use and performance of e-HRM and the level of satisfaction with the e-HRM system. However, this study is not in line with the results of Allui & Sahni's (2016) research in Saudi Arabia's higher education, showing that higher education faces big problems around human resource development, especially faculty members, and needs to devote more attention to e-HRM practices. The employee recruitment and selection process is largely inadequate and requires effective attention. Al-Shobaki et al., (2017), who researched at Palestinian universities, stated that they fully agreed on the importance of human resource management; however, e-HRM applications are still limited and have not been used optimally. The use of ICT focuses on the functions of incentives (compensation) and performance appraisal, while the university's e-HRM system focuses on the functions of training and development, communication and e-learning.

Based on the data analysis in this study, the results of the external environment variable have a positive and significant effect on e-HRM activities. It means showing a positive and linear influence between the external environment and e-HRM activities. The results of this study are in line with previous research conducted by Dissanayake & Nandasena (2019); Oliveira et al., (2019); Chong & Olesen (2017); technology vendor support (Sulaiman and Wickramasinghe., 2014), government regulations (Lian, Yen & Wang., 2014; Aldmour, Love, & Alzubi (2013) on IT innovation adoption decisions in developing countries. In addition, Tiwari and Saxena (2012) suggest that e-implementation -HRM must be adapted to state regulations. However, this study is not in line with the results of research by Shah, Michael & Chalu (2020); Al-Dmour (2014) and Ocloo, et al., (2018), which stated that government policies and support did not prove importantly related to the level of implementation of e-HRM but the government should be more supportive through the formulation of policies and laws, offering training and education programs, electronic infrastructure and funding in Ghanaian SMEs, while according to Schneider and Sunyaev (2016), there is an indirect influence from environmental factors external institutions in the e-HRM adoption decision process, this is related to the uncertainty that arises, the lack of transparency, and the legal situation that immature which allows for conflicts of law on personal data.

5. Conclusion

Based on the inferential analysis, the conclusions of this study are based on the results of the hypotheses, namely: 1.) Contextual technology has a positive and significant effect on e-HRM activities. 2.) Organizational readiness has a positive and insignificant effect on e-HRM activities. 3.) The actor has a positive and significant effect on e-HRM activities. 4.) The external environment has a positive and significant effect on e-HRM activities. 1. This research was conducted amid the Covid-19 pandemic; according to government recommendations, all universities use online learning processes to prevent transmission. Structural officials who are respondents in this study are difficult to find, so that the process of distributing questionnaires and interviews cannot be carried out optimally. The

distribution of the questionnaire was carried out in 2 ways, namely directly (hardcopy) and through the google form. Through the google form without direct contact with the respondent concerned, so the researcher cannot know whether the respondent understands well the intent of the statement given. In addition, the waiting time for the questionnaire to get the desired number of respondents also takes a very long time. The object of this research is only 8 (eight) private universities accredited B (Very Good) in the city of Medan. So it cannot generalize the quality of universities in North Sumatra. From the research that has been done, it can be given suggestions for recommendations as follows: 1.) Private universities in Medan are expected to provide comprehensive and structured training to education staff and lecturers when they will start using the new software. 2.) Policymakers (regulators) are expected to provide socialization and training if there are changes to the curriculum or new rules. 3.) Private universities in the city of Medan are expected to collaborate with industry, government, and other universities by taking into account the needs of study programs. 4.) Private universities in the city of Medan to pay attention to the level of age and education of lecturers so that there is no gap between the comparison of the number of lecturers for Masters and Doctoral Degrees. Likewise, with the number of lecturers with functional positions between lector to lector's head. It is hoped that the university will provide support in the form of moral and material.

References

- Al-Hmouze Lubna Hussien. (2016). The Impact of Electronic Human Resource Management (E-HRM) Application on Organizational Performance. Thesis. Master of E-Business Business Administrative Department Faculty of Business Middle East University
- Al-Dmour, Shannak. (2012). Determinants of The Implementation Level Of Electronic Human Resources Management (E-Hrm) In Jordanian Shareholding Companies. European Scientific Journal August Edition 8(17), Issn: 1857 – 7881 (Print) E - Issn 1857-7431
- Ameen (2018). The Impact of the System and Information Quality of Smart Government in UAE on User Satisfaction. IT Applications and Management (ITAM21). Huelva, Spain
- Barney, J. B. (2001) Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review*, 13, 656-665.
- Bamel, U. K., Rangnekar, S., Rastogi, R., Kumar, S. (2013). Organizational process as antecedent of managerial flexibility. *Global Journal of Flexible Systems Management*, 14(1), 3–15.
- Bondarouk, T., Ruel, H., van der Heijden, B. (2009). E-HRM effectiveness in a public sector organization: a multi-stakeholder perspective. *The International Journal of Human Resource Management*, 20(3), 578-590.
- Berber, Dordevic, Milanovic., (2018). Electronic human resource management (e-HRM): A New Concept for Digital age. *Strategic Management*, 23(2), 22-32
- Chakrabortya, A.R. and Mansor, N.N. (2013) Adoption of Human Resource Information System: A Theoretical Analysis *Procedia - Social and Behavioral Sciences* 75 (2013) 473 – 478
- Chou Chung P, Lin Hsiao Fang, Chiu Yun-ju. (2013). The impact of SSCI and SCI on Taiwan's academy: an outcry for fair play. *Asia Pacific Educ. Rev.* (2013) 14:23–31. DOI 10.1007/s12564-013-9245-1
- Conner, K. (1991), "Historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm?" *Journal of Management*, 17(1), pp.121-154.
- Gachunga Hazel, Muriithi James Gitari, Mburugu Chris Kathoka. (2014). Effects of Electronic Human Resource Systems on Human Resource Management Practices and Firm Performance in Listed Commercial Banks at Nairobi Securities Exchange. *European Journal of Business and Management*. ISSN 2222-1905, 6(29),47 – 55.

- Gani & Anjum. (2017). e- Human Resource Management (e-HRM). *International Journal of Emerging Research in Management & Technology* ISSN: 2278-9359 (Volume-6, Issue-6). P84-188.
- Haloho Elizabeth dan Purba Idawati. (2019). Meningkatkan Kinerja Pendidikan Tinggi Melalui Kemitraan Universitas Swasta Di Kota Medan. *Jurnal Mutiara Manajemen*, 4(2), E-Issn: 2579-759x
- Huang, J., Taylor, M. M (2013). Turnaround user acceptance in the context of HR self-service technology adoption: an action research approach. *The International Journal of Human Resource Management* 24(3)
- Juana, (2012). *Human resource management in the digital economy: creating synergy between competency models and information*. Hershey, PA: Information Science Reference.
- Johnson, R.D., Lukaszewski, K.M., Stone, D.L. (2015). The Evolution of the Field of Human From digital HRM to firm performance 58 *Resource Information Systems: Co-Evolution of Technology and HR-Processes*. *Communications of the Association for Information Systems*, 38, 1-37.
- Liu, Lomovtseva, Korobeynikova. (2020). Online Learning Platforms: Reconstructing Modern Higher Education. *iJET* – 15(13), 2020. <http://www.i-jet.org>. <https://doi.org/10.3991/ijet.v15i13.14645>
- Lin, L. H. (2011). Electronic human resource management and organizational innovation: the roles of information technology and virtual organizational structure. *The International Journal of Human Resource Management*, 22(02), 235–257. <https://doi.org/10.1080/09585192.2011.540149>
- Maier, C., Laumer, S., Eckhardt, A., Weitzel, T. (2013). Analyzing the impact of HRIS implementations on HR personnel's job satisfaction and turnover intention. *The Journal of Strategic Information Systems*, 22(3), 193-207.
- Marler, Fisher. (2016). The e-HRM Value Proposition: Introduction to the Special Section. *Canadian Journal of Administrative Sciences Revue canadienne des sciences de l'administration*. 33: 91 –94 (2016). Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/CJAS.1388
- Nason, R., Wiklund, J. (2015). An Assessment of Resource-Based Theorizing on Firm Growth and Suggestions for the Future. *Journal of Management*. 44(1), 32-60.
- Ochurub. M. (2012) Organizational Readiness for Introducing a performance Management System. *Journal of Human Resource Management*. 10(1), 1-11.
- Parvar (2013). Effect of Quality of Work Life on Organizational Commitment by SEM. *International Journal of Academic Research in Business and Social Sciences*, 3(10), 135-144.
- Parry, E. and Tyson, S. (2011) Desired goals and actual outcomes of e-HRM. *Human Resource Management Journal*, 21(3), 335-354.
- Penrose, E. T. (1959). *The Theory of the Growth of the Firm*. New York: John Wiley
- Pietrewicz. (2019). Technology, Business Models and Competitive Advantage in the Age of Industry 4.0. *agement Issues*, 17(2), 32 –52. ISSN 1644-9584, © Wydział Zarządzania UW. DOI 10.7172/1644-9584.82.2
- Ruel H, Bondarouk, T. and Looise, J. (2004). E-HRM: Innovation or Irritation: An Explorative Empirical Study In Five Large Companies On Web-Based HRM“, *Management Review*, 15(3), 364-381.
- Saleh, M. (2014) Factors Affecting the Acceptance of Electronic Human Resource Management System in Palestinian Service Sector. MSc in Engineering Management, Faculty of Graduate Studies, An-Najah National University, Nablus, Palestine
- Stone, D., Stone-Romero, E. and Lukaszewski, K. (2015). Factors affecting the acceptance and effectiveness of electronic human resource systems. *Human Resource Management Review* 16 (2006) 229–244

- Subhashree, Vasantha. (2020). Influence Of It Infrastructure And It Expertise On E-Hrm Adoption. *International Journal Of Scientific & Technology Research* Volume 9, Issue 01, January 2020.
- Tobari. (2015). Strategi Perguruan Tinggi Swasta Menghadapi Persaingan Jurnal Media Wahana *Ekonomika*, 12(3), 61 – 68
- Tavakoli Gholamreza, Nazri Younes, Mahedi Ahmadi, Niknam Omidali. (2015). The Analysis of the Impact of Electronic Human Resource Management (E-Hrm) On the Internal Marketing in the Melli Bank of Khoram Abad. *Journal of Social Issues & Humanities*, (3), ISSN 2345-2633.
- Tabiu, A., Nura, A. (2013). Assessing the Effects of Electronic Human Resource Management (EHRM) Practies On Employee Job Performance: A Study Of Usmanu Danfofiyo University Sukoto. *Journal of Bussiness Studies Quarterly*. 5(2). 1-14.
- Voermans M., Van Veldhoven, M. (2007). Attitude towards e-HRM: an empirical study at Philips. *Personnel Review*, 36(6), 887-902.
- Wahyudi, Park. (2014). Unveiling the Value Creation Process of Electronic Human Resource Management: An Indonesian Case. *Public Personnel Management*. 2014, 43(1), 83 –117. DOI: 10.1177/0091026013517555
- Wang, W. C., Lin, C. H., Chu, Y. C. (2011). Types of competitive advantage and analysis. *International Journal of Business and Management*, 6(5), 100.
- Wernerfelt. 1984. A resource-based view of the firm. *Strategic Management Journal*.
- Xin. (2014). Analyzing the Use of Web 2.0 for Brand Awareness and Competitive Advantage: An Empirical Study in the Malaysian hospitability Industry. *Information Systems Management*, 31:96–103, 2014. Copyright © Taylor & Francis Group, LLC. ISSN: 1058-0530 print / 1934-8703 online. DOI: 0.1080/10580530.2014.890425.
- Yusliza, M. Y., Ramayah, T. (2012). Determinants of attitude towards E-HRM: an empirical study among HR professionals. *Procedia-Social and Behavioral Sciences*, 57, 312-319.