

The Digitalization of Human Resources Management and Its Impact on Organizational Performance: The Interacting Role of VUCA and SMACs Business Environments

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Abstract : Purpose of this study: to examine the impact of human resource digitalization on organizational performance. Specifically, this study seeks to examine the moderating role of external environment characterized as VUCA. Furthermore, the study investigates the mediating role of information technology environment characterized as SMACs in the relationships between e-HRM and organizational performance. To answer to the formulated hypotheses a quantitative method is employed using data from 266 employees of the service sector in Ghana. **Findings:** findings from this study support the hypothesis that digitalization of HRM positively impact organizational performance ($B = .338$; $p < .000$). The second hypothesis that the VUCA environment moderates the relationships between human resource digitalization and organizational performance is rejected ($B = -.041$; $p < .724$). Finally, the hypothesis that the SMACs environment mediates the relationships between HRM digitalization and organizational performance is supported ($B = 0.178$; $t = 5.601$; $p < .000$). **Limitations and implications:** this study limitation is the unrepresentativeness of the sample as 2 leading firms are inadequate to represent a sector. However, the contribution of this study is not only managerial but theoretical. The managerial implication of this study is that managers are required to have the expertise of scanning the environments, but more importantly the ability to bundle internal resources to respond to the demand of the markets. Theoretically, this study contributes to the literature by developing a model that examines two segments of the environments namely the business and technology segments of the environments.

Keywords: human resource information system; electronic human resources; digitalization of human resources; VUCA Environment; SMACs technologies.

1. INTRODUCTION

Times have evolved, gone are the days when most organizations were mechanistic. These organizations have enjoyed some relative stability in their operating environments. Today's business environments are characterized by population growth, increasing demand of resources scarcity of natural resources, technological development, competition for few resources, increasing demand of accountability, etc. These happenings have made continents, nations and to an extent organizations heavily relying on one other. None suffices for itself, but all constantly depend on inputs or outputs from others. The increasing interactions between factors but also of actors complicated the structure of the business environments. These difficulties in understanding the context brought about its description in terms of volatility, uncertainty, complexity and ambiguity (VUCA). Organizations have become part and parcel of the larger environments. They are influenced by but also affect the external environments. So, they can't be studied in isolations without regards to their context.

However, most studies linking human resources practices to organizational performance failed to consider the environmental context (Lengnick-Hall et al, 2011; Allen et Wright, 2006). Many studies are calling for the inclusion of external context in a study relating HRM practices to organizational performance ((Hofe et al, 2005; Lengnick-Hall et al, 2011; Allen and Wright, 2006). It is for this reason that this study seeks at examining the interaction effects of the environmental and technological contexts. Specifically, this study seeks at examining the moderating effect of the environmental context in the relationships linking e-HRM to organizational performance. Moreover, this study seeks at examining the mediating effect of technological environment in the relationships linking e-HRM to organizational performance. This phenomenon is observed from the lens of the resource-based view theory. The proponents of this theory view human resources as the most vital resources any firm can possess but they equally recognize the importance of complementary assets such as technologies. Digitalization of human resources is the integration of digital technologies in the management of people.

This study is important as it will contribute to research linking environmental context to firm's performance. Also, this study will contribute to literature by examining the mediating effect of the technological segment of the greater business environment. Findings from this study will be used to make recommendations to managers as to what strategies they must take in this ever-evolving world to survive and maintain their competitiveness. Today, understanding the external environment and having the expertise to realigned organizational resources to the demand of the markets have become a winning strategies. Finally, this study contributes to research by empirically testing the relationships between e-HRM and organizational performance in the presence of other interacting factors. To answer to the research hypotheses of this study a quantitative research method is used to collect data from 266 employees of the service sector. Data analysis is carried out using the SPSS version 22 for descriptive analysis while the SmartPLS 4 is used to assess the structural model.

2. LITERATURE REVIEW

2.1 HRM digitalization and organizational performance

Development in digital technologies has accelerated the transformation of HRM to e-HRM or digital HRM. The impact of digital technologies on organizational performance has been clearly stated. For instance, Gupta et al (2019) argue that information systems are an internal firm resource, a source of competitive advantage, and a driver of firm performance. As a result, managers become under pressure to justify investment being made in corporate digitalization. Extant literature contributes to reporting a link between e-HRM and organizational performance. For example, Legner et al (2017) argue that digitalization is significantly impacting businesses by influencing processes, products, services, and business models. It connects machines, things, and individuals, as well as enabling new work, collaboration, and automation. Also, Bondarouk and Ruél (2005) empirically examine the effectiveness of e-HRM and reported that a positive use of e-HRM applications facilitate an improvement in HR effectiveness. The results also showed that the operational e-HRM application, got along with more positive perceptions of HR effectiveness and that easiness of use and quality of digitalization correlates significantly with technical and strategic HR effectiveness. Job relevance correlated only significantly with strategic HR effectiveness. Also, Zaki and Saad (2018) found that digitalization leads to cost reductions, improved customer satisfaction, increased market share, greater operating efficiency, improved customer services and the achievement of competitive advantages and improved overall performance.

Moreover, Ahmed (2019) investigates the impact of e-HRM on organizational performance by comparing two organizations in Bangladesh. Nine digital HRM practices namely recruitment system, employee system, information management system, salary management system, learning and training system, idea and creativity exchange system, assessment system, welfare system, and career development system are used as independent variables. The findings report that Informational e-HRM practices increases organization performance by 73%, Interactional e-HRM practices increases organization performance by 197% and finally, Transformational e-HRM practices increases organization performance by 242% than no e-HRM practicing organization. Also, in a review of literature, Bondarouk et al (2017) found cost savings, improved HR services and strategic reorientation of the HR department as the benefits associated with e-HRM. Furthermore, Bulmash (2008) states that e-HRM facilitates the manager's job by enabling him to view résumés that are on file, view merit reviews, submit job requisitions, view employee salaries, and keep track of employee performance and training histories. Nayak (2018) explains that e-HRM increases efficiency, reduces the time of transaction, and thereby enabling easy flow of funds, provides wider coverage area, improves quality of service, maintains proper records of transactions, reduces human error, saves paper and trees as being environment friendly, leads to quick and easy access to various banking services, increases investment activities, reduces the cost of printing currency notes as there is no usage of hard cash and less cost in maintaining records.

Besides, Weeks (2013) examines organizational performance relationships before and after the implementation of e-HRM. The study reports employee productivity rose from 78% before the HRIS implementation to 89% after the HRIS implementation, and employee absenteeism decreased from 13% before the HRIS implementation to 7.9% after the HRIS implementation. The finding also indicates that the rate of employees carrying out job-related tasks correctly rose from 92% to 97%, and the allocation of employees to the wrong job decreased from 8.5% before the HRIS implementation to 3% after the HRIS implementation. The result indicates Job satisfaction increased by 18%, task-related employee grievances decreased by 33%, the success rate of employees after training increased by 22%, mistakes being committed on-the-job decreased by 10.6%, employee productivity increased by 11. There was an overall improvement in every aspect of the job: a 16% decrease in training on-the-job, a 5% decrease in employees requesting job reassignments, a 5% decrease in employees quitting their job, and a 13% increase in employees handling their job successfully and efficiently. Based on the review of the above literature, this study proposes the below hypothesis:

H 1: Digitalization of human resource management positively impacts organizational performance.

2.2 The Characteristics of the VUCA Environment

Today's business environment has become complex due to globalization, technological development, population growth, the ever-increasing change of consumers taste, competitions and more. All these and other developments constitute a myriad of challenges that today's firms are facing. To describe the nature of today's environment, the US Army coined the acronym (VUCA) to describe its volatility, uncertainty, complexity, and ambiguity (Shoemaker et al, 2018). They contend that today's business environment has not only become riskier but volatile, uncertain, complex, and ambiguous where conventional management practices will no longer produce the desired outcomes. Also, Marchese et al (2020) describe the world as ever changing, with new consumers, technologies, and opportunities. They discuss that these factors increase the complexity of the world requiring firms to experiment and learn to size new opportunities and exploit them.

Different environmental factors shape the practices of HRM in organizations. Thite et al (2012) explain that firms are compelled to adopt cost reduction strategies through productivity improvement measures such as downsizing, flat organizational structure, teamwork, and outsourcing. It is because of increased competition, emergence of recent technologies, globalization and competition from Europe and Asia.

In a review of literature, Boslie et al (2003) compare the Anglo-Saxon to Dutch literature and they identify political, trade unions, governments and competitor's external factors which highly affect organizational performance. Both internal and external business environments affect firm's capabilities. They describe the external environment as being turbulent and complex. However, they outline managerial behavior, bounded rationality, leadership, social capital, organizational knowledge, and other resources as constituting the internal factors (Ambrosini and Bowman, 2009). Moreover, Gollan (2005) mentions the state intervention, consumer demands for quality and competition as factors affecting firms. Schuler and Jackson (2005) identify legal framework and labor market conditions, they note that the responsibility of HRM managers to monitor the external environment has increased, as it facilitates vertical integration by enabling internally consistent HRM practices to horizontal integration. Snell et al (2002) detail out globalization, intellectual capital, information technologies, and diversity as factors the speed and needs of change. As a result, agility, flexibility, and rapid response become a winning strategy.

Singh et al (2012) classify the external environment into two parts. One part includes demand conditions for its products, market structure and competitive environments. The other part consists of political, economic, social, technical, and legal factors. The impact of external environment on businesses are examined differently. Kitonyi et al (2020) study the moderating effects of macro-environment between firm's resources and export performance. The findings report that the macro environment factors including political, technological, and environmental factors negatively affect export performance while economic, social, and legal factors positively influence export performance. The study also shows that the macro environment significantly moderates the relationship between firm resources and export performance of SMEs in the manufacturing sector. In a longitudinal study of 206 Chinese firms, Yang et al (2020) examine the relationships between the macro and micro-environment and supply chain integration. The findings indicate that there are different configurations of macro and micro-environments and that these differences affect supply chain integration. Their findings confirm a statistically significant relationship between strategy implementation and firm's performance and that macro-environment moderate the relationships. Based on the above literature, this study proposes the below hypothesis:

H2: VUCA environment negatively moderates the relationships between digitalization and organizational performance.

2.3 SMACs Technologies and Organizational Performance

The SMACs environment has seen the day since the development and growth of information technologies. This environment consists of five main technologies namely the social media, mobile, big data & analytic, cloud computing and security technologies. They constitute the key features of this environment. Moreover, they are evolutionary and therefore constantly disrupt business operations. According to Leonardi et al (2013) social media support communication relating to marketing, employer branding, and customer relationship management. They explain that its benefits within the organization are knowledge sharing and management, communication with new hires, developing relationships and social capital. Mobile technologies facilitate voice and data communication, coordinate tasks and people, improve sociability by uniting employees, families, and friends (Lang and Jarvenpaa, 2005). Also, Pitichat (2013) reports that using mobile devices is valuable as it promotes autonomy, improves relationships between coworkers, and their superiors, and improves knowledge sharing. He further clarifies that these advantages in return provoke employer satisfaction and enhances organizational ability to adapt to its environment. Furthermore, Stieglitz and Brockman (2015) examine the impact of mobile devices in organizations and the study reveals four main benefits associated with the use of mobile technologies. The first one is the ubiquitous accessibility of data, the second benefit is that mobile technologies support business processes, third it unifies communication by pooling the resources together and finally, it causes employee satisfaction.

As far as big data is concerned, Mikalef et al (2012) postulate that big data impacts on organizational capabilities and enhances its operational efficiency. It enables firms to identify deficiencies in products, service delivery but also to identify and better understand the different market segments and provide them with solutions that are better and tailored to the firm's market

needs. Aldholay et al (2018) explain that the availability and the increasing nature of data is changing technology infrastructure, competencies, information technology organization. It impacts on the information technology ecosystem and improves decision making in organizations. As for Bowman et al (2019), they argue that big data technology has caused the emergence of new business models driven by data. They discuss that big data is not only useful in marketing and customer relationships management but in driving the creation of new business models. Besides, Raguseo and Vitari (2016) justify how investments in big data technology can create business values. They examine both direct and indirect effects through mediating variables (market performance and customer satisfaction). They report that the business value of big data analytics solutions explains 62.4% of the variance of customer satisfaction, 71.9% of the variance of market performance, and 78.6% of the variance of financial performance.

Cloud computing comes with an economy of scale advantages. For instance, Etro (2011) identifies some benefits associated with the adoption of cloud computing technology in SMEs. He stresses on the reduction of fixed and production costs, and the replacement of capital expenditure by operational costs, all this leads to reduction of costs relating to the entry barrier. In examining the impact of cloud computing on the development of SMEs, Devasena (2014) notes that cloud computing provides cheaper service, as the customer does not have to make an investment in information technology infrastructure, and it is not required to have skilled personnel to carry out the configuration and maintenance services. Gopichand (2015) outlines the benefits of cloud computing in terms of pay as you use, on demand access, flexibility, scalability, reliability, efficiency, and low costs. Kritzinger and Smith (2008) indicate that security retrieval and awareness creation can be used to improve employee's security alertness. Also, Herdrdstron et al (2011) discuss that information system technologies help businesses to protect vital organizational information asset which is of strategic importance to firms. This literature shows that digital technologies impact organizational performance. Besides, the literature has also shown that digitalized practices impact organizational performance. The impact of digitalization on organizational performance isn't constant but depends on the existing digital technologies. Changes in the existing technologies in the markets will require updating organizational processes, otherwise it will fail to generate its actual value. So based on the above literature, this study proposes the below hypothesis:

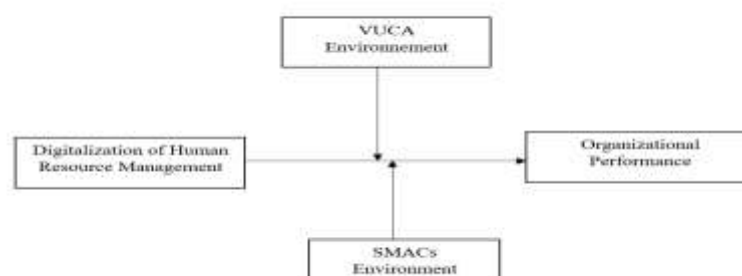
H3: SMACs environment mediates the relationships between digitalization and organizational performance.

3. THEORETICAL AND CONCEPTUAL FRAMEWORK

The phenomenon under study is viewed from the lens of the Resource-Based View Theory. According to Gupta et al (2019), the resource-based view is a classical and influential theory in the study of information systems. Also, Barney (1991) note that the resource-based view theory recognizes the contribution of other resources in gaining a competitive advantage; notably, on the list of these resources are the technological resources. Madhani (2010) discusses that RBV focuses on internal firm's resources and capabilities that generate sustained competitive advantage. He buttresses his point by indicating that resources are strategic if they are heterogeneous and immobile across firms. He concludes that, if resources are imitable or mobile, they will cease to produce the competitive advantage. Also, Peteraf (1993) discusses how the RBV model explains how firms with different levels of resources compete in the markets. He contends that firms with marginal resources can breakeven and firms with superior resources will generate rent. He posits that to achieve competitive advantage, firms must possess resources that are characterized as being heterogeneous and immobile. Digital resources that meet the requirements of the resource-based view assumption can generate superior economic performance.

Based on the review of the literature and the underpinning theory, this study identified three main constructs which are used to develop a conceptual model that explains the phenomenon under observation. Adom et al (2018) state that the conceptual framework outlines the key constructs of a study. Bordage (2009) refers to a conceptual framework as a reflection of a researcher's thinking about a problem, it can emanate from theories, models, or best practices. Integrated digital technologies is used as an independent variable, digitalization-based job satisfaction as a mediating variable and organizational performance as a dependent variable. This study assumes that the impact of the independent variable on the dependent variable is not constant but depends on a third variable which is the mediating variable. This mediating variable interposes itself between the two variables by interfering with the causal effect. Below is the illustration of the concept.

Figure 1: Conceptual model of this study



Based on this study model, we formulate the following hypotheses:

1. Digitalization of human resource management positively impact organizational performance.
2. The VUCA environment negatively moderates the relationships digitalized human resources and Organizational Performance.
3. The SMACs environment mediate the relationships between human resource digitalization and organizational performance.

4. METHODOLOGICAL APPROACH

The methodology section answers two main questions; how is the study data collected? How is it analyzed? It is an approach to the design of a research work. This section also looks at the research paradigm, the research design, area, study population and sampling procedure. It ends with the questionnaire design. The philosophical assumption of this study is the positivism. Creswell (2009) states that it is important for a researcher to clarify his philosophical assumption as it helps in understanding why he/she chooses either a qualitative, quantitative or a mixed method. The reason for adopting this approach emanates from the nature of this study, which is testing of hypotheses, checking relationships between variables, and examining a larger sample size. According to Creswell (2009) when research has a larger sample size, examines relationships, explores theories and an observable phenomenon, it is ideal for a positivist approach. A quantitative approach is employed to gather data from the sampled population.

The context of this study is in Ghana, a west African nation. Two leading service companies constitute the population and employees, and their managers are the units of analysis. This study employs convenient sampling technique. The choice of this technique is due to the inability of the researcher to assess employee records or file directories that can enable him to randomly select the study participants. According to Etikan et al (2016), convenient sampling has been dominant in quantitative studies. They further explained that it is useful when randomization is impossible. The research uses survey questionnaires to collect primary data to test the study hypotheses. Data on three (3) variables namely integrated digital technologies, digitalization-based job satisfaction and organizational performance are collected. They are assessed using 5 points Likert scale measurement, ranging from strongly disagree (1) to strongly agree (5). A Krejcie and Morgan (1970) sample size determination table is used to select a sample of 327 respondents out of a total population of 2,270 employees. A convenient sampling technique is used to administer the questionnaires over a period of one month. A response rate of 266 respondents (n=266; representing 81.34%) is achieved. This means that 61 respondents (n=61; representing 18.65%) questionnaires are unanswered or incomplete to be meaningful for inclusion in this study data.

The first variable digitalization of human resources is adopted from Pabuo et al (2017). It consists of; 1). This company engages in online branding activities. 2). This company has a dedicated online job portal. 3). This company advertises vacancies online. 4). This company has an e-learning platform for training. 5). This company uses a computerized performance management system. 6). This company uses an attendance tracking system. 7). Pay slips in this company are distributed electronically. 8). Employee benefits information are accessible online. 9). This company has an Employee Self-Service Platform (ESS). 10). This company makes use of digital HR Dashboards to communicate operational performance. 11). This company uses an HR Analytic software to support decision making. The second variable VUCA environment is measured using 9 items which are 1). Inflation and high interest rate affect our company performance; 2). The level of demand for our products and services affects our operations; 3). The level of economic activities in this country affects our operations; 4). Emerging technologies affect this company operations; 5). Events occurring globally highly affect our operations; 6). Changes in government legislations can affect our operations; 7). Customers and employee's expectations affect our operations; 8). The nature of competition in the industry affects our operations; 9). The labor quality on the market affects our operations. Finally, organizational performance is measured using 10 items. 1). I believe our customers are highly satisfied with our products and services, 2). As compared to our competitors, I believe we have better performance in the industry. 3). As compared to the industry, our employee productivity is higher than that of our competitors. 4). We have higher market share compared to competitors in the industry, 5). Employees of this company are more qualified and committed working with this company; 6). I believe we have a positive profit margin; 7) Compared to our competitors, this company is more innovative focus; 8.) This company has a steering committee that provides leadership and formulate strategies. 9). The company budget is driven by the corporate strategy. 10). This company has functional teams that meet regularly and discuss process improvement.

5. STUDY RESULTS

Firstly, Data analysis will not produce any meaningful results until the data to be analyzed is of good quality (Rovai et al, 2014). To identify missing values and outliers, missing values data analysis command of SPSS is used, and it reports less than 2% of missing values which is below the threshold of 10%. So, an indication that the data is good for analysis. Also, factor analysis is one of the techniques used to examine the goodness of measurement model. According to Sekaran (2003) a goodness of measurement

can be assessed through the analysis of questionnaire items. It examines the ability of each item to discriminate between the factors by loading either high or low. Factor analysis helps to determine the validity of a concept. A total of 30 questionnaire items measuring 4 variables are loaded using a SmartPLS4 Algorithm.

Secondly, the results obtained on gender shows that the workforce is dominated by men (n= 181, representing 68%) of the sample against women who remain a minority (n=85, representing 32%). Secondly, the outputs on age indicate that most of the respondents are young (n=158, representing 58%) having between 25 to 35 years, followed by those in the age bracket of 36 to 45 (n=78, representing 29.30%). The remaining respondents (n=30, representing 10.20%) of the sample population are older having between 46 to 60 years. Thirdly, the above data shows that a pyramidal form of the organizational structure with few managerial staff at the apex (n=37; representing 13.90%); followed by the supervisory staff (n=88, representing 33.10%); finally, comes the rank and file who are the operational staff constituting the wider base of most organizations (n=141, representing 53%). Fourthly, the results on educational variables show that these companies are a knowledge based-firms with predominantly educated workforce. The educated workforce with a High National Diploma, bachelor's and master's degrees constitutes 80% of the sample population. Finally, the fifth variable which is work experience indicates that the sample population is extensively experienced as those with 6 to 20 years' experience constitute 53.40%.

Thirdly, reliability is a key measurement criterion. For instance, Leary (2008) describes it as a consistency and dependability of a measure. Furthermore, Sekaran (2003) notes that the reliability of a measure indicates the stability and how unbiased an instrument can be when administered in a similar condition. Cronbach Alpha test statistic is the widely used test to measure reliability (Leary, 2008). The reliability measures can range from .00 to 1; the .00 means no reliability and 1 means perfect reliability. A reliability measure of .70 indicates good reliability (Sekaran, 2003). Besides, one assumption needs to be met before one can proceed with the assessment of a structural model. Related literature has cited multicollinearity as one assumption of a structural model (Rovai et al, 214; Adam, 2015). The issue of multicollinearity occurs when two or more variables are highly correlated. This can however be problematic for the outcomes of a study. Ravai et al (2014) added that multicollinearity is an indication of redundant variable which needs to be identified and removed. The rule of thumb for the VIF is a value of less than 10. The below table presents the results of goodness of measures of this study.

Table 2: Summary of Goodness of Measures

Constructs	Items	Loading	CR	AVE	VIF
SMACs Environment	SMACs 1	0,768	0,793	0,507	1,8
	SMACs 2	0,71			1,419
	SMACs 3	0,716			1,427
	SMACs 4	0,706			1,552
	SMACs 5	0,796			1,748
	SMACs 6	0,649			1,65
HRM Digitalization	HRM Digit 1	0,801	0,879	0,536	3,121
	HRM Digit 2	0,724			2,499
	HRM Digit 3	0,759			2,124
	HRM Digit 4	0,632			1,588
	HRM Digit 5	0,667			1,473
	HRM Digit 6	0,67			1,828
	HRM Digit 7	0,735			2,52
	HRM Digit 8	0,752			2,638
Organizational Performance	OP 1	0,804	0,903	0,548	2,69
	OP 2	0,633			1,951
	OP 3	0,793			2,463
	OP 4	0,753			2,371
	OP 5	0,65			1,742
	OP 6	0,69			1,756
	OP 7	0,793			2,757
	OP 8	0,768			2,516

	OP 9	0,725			2,221
	OP 10	0,685	0,788	0,51	2,222
	VUCA 1	0,59			1,677
	VUCA 2	0,842			2,671
	VUCA 3	0,794			3,193
VUCA Environment	VUCA 4	0,749			6,633
	VUCA 5	0,086			2,044
	VUCA 6	0,898			6,887

Note: CR= Cronbach Alpha; AVE=Average Variance Extracted VIF=Variance Inflation Factor

The discriminant validity is assessed using the HeterotraitMonotrait ratios and Fornell-Larcker criteria. The HeterotraitMonotrait ratio is used as it can provide more accurate result than the Fornell-Larcker criterion. The decision rule is that its ratio must be lower than a cut-off value of between 0.85 and 0.90 (Henseler et al; 2015). The decision rule for the Fornell-Larcker criteria is that the square root of the AVEs should be greater than the correlations of the constructs (Henseler et al, 2015). Thus, this study had acceptable convergent validity and discriminant validity in measuring the measurement model. The results are presented below:

Table 3: Summary of Discriminant Validity

Constructs	HeterotraitMonotrait			Fornell-Larcker Criteria				
HRM Digit	-							
OP	0,605			0,712				
SMACs	0,59	0,72		0,58	0,732			
VUCA	0,162	0,14	0,107	0,527	0,617	0,74		
VUCA x HRM Digit	0,14	0,125	0,135	0,623	-0,099	-0,114	0,03	0,714

Note: HRM Digit= Human Resource Digitalization; SMACs= SMACs Environment; VUCA= VUCA Environment; OP=Organizational Performance.

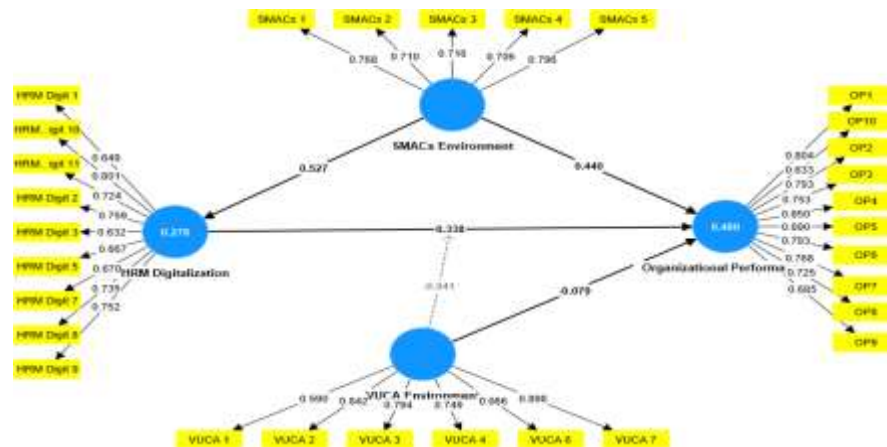
After confirming the goodness of the measurement model, we proceed to examine the structural model of this study. Four main hypotheses are formulated. The first one is HRM digitalization (HRM Digits) positively impact Organizational Performance (OP). This hypothesis is supported ($B = .338$; $p < .000$). The second hypothesis is that the VUCA Environment (VUCA) moderates the relationships between HRM Digitalization and Organizational Performance. This second hypothesis is rejected ($B = -.041$; $p < .724$). The third hypothesis is that the SMACs Environment mediates relationships between HRM Digitalization and organizational performance. The mediation analysis results indicate that the total effect is positive and significant ($B = 0.618$; $t = 14.609$; $P < .000$). Also, the result shows that the indirect effect, (with the presence of the mediator) is positive and significant ($B = 0.178$; $t = 5.601$; $p < .000$) and the direct effect is found to be positive and significant ($B = 0.338$; $t = 5.417$; $p < .000$). Based on the results of this analysis, we conclude that there is complementary partial mediation. The results of the analyses are presented on the below table:

Table 4: Results of Structural Model

Effect	Path	Coefficients	T-Statistics	P-Value
Total effect	HRM Digit -> OP	0,618	14,609	.000
Indirect effect	HRM Digit -> SMACs -> OP	0,178	5,601	.000
Direct effect	HRM Digit -> OP	0,338	5,417	.000
Moderation effect	VUCA Envir x HRM Digit -> OP	-0,041	0,353	0,724

Note: HRM Digit= Human Resource Digitalization; SMACs= SMACs Environment; VUCA= VUCA Environment; OP=Organizational Performance.

Figure 2: Structural Model of this study



6. DISCUSSION OF FINDINGS

The aim of this study is to investigate the relationships between HRM digitalization and organization. So, it is hypothesized that HRM digitalization positively impact organizational performance. This hypothesis is validated ($B = .338; p < .000$). This finding is corroborated in the literature. For instance, Bondarouk et al (2017) cost report that HRM digitalization leads to costs reduction, improvement in human resource services and strategic reorientation. Moreover, Zaki and Saad (2018) discuss that digitalization leads to cost reductions, improved customer satisfaction, increased market share, greater operating efficiency, improved customer services and the achievement of competitive advantages and improved overall performance. Digitalization positively impacts organizational performance. However, it must be noted that this relationship is not constant but depend on certain conditions. To leverage on digitalization, top management must take into consideration certain aspects. First, managers must recognize the role of digital competencies. For instance having HR Analytics unit without investing in datamining, modelling and predictive analysis competencies, the digitalization aim may be compromised. So, managers must be interested in recruiting competent but digitally savvy employees. They must be equally interested in the development of this talents in parallel with shift in the development in this domain.

Besides, this study seeks at examining the moderating effect of VUCA environment in the relationship between HRM digitalization and organizational performance. So, the hypothesizes that VUCA environment moderates the relationships between HRM digitalization and organizational performance is rejected ($B = -.041; p < .724$). Though, the beta coefficient is showing negative moderating effect, the impact is insignificant to be supported. Thus, this study concludes that there is no moderation. There are mixed reports of findings relating to VUCA moderating role in relation with firm's performance. Studies have differently examined the effect of external environment on firm's performance. Kitonyi et al (2020) study the moderating effects of macro-environment between firm's resources and export performance. The findings report that the macro environment factors including political, technological, and environmental factors negatively affect export performance while economic, social, and legal factors positively influence export performance. Also, Munday and Gituro (2020) investigate the moderating effect of macro environment on strategy implementation and performance. Their findings confirm a statistically significant relationship between strategy implementation and firm's performance and that macro environment moderate the relationships. Theoretically, the VUCA environment must negatively influence the relationship. For instance, changes in inflation, interest rate, political instability etc. would negatively impact firm's performance.

The short of expectation relating to the validation of the second hypothesis is likely due to sampling inadequacy as the result indicates negative coefficient but insignificant to be accepted. The simple slope analysis is showing VUCA at 1SD gradually dampens the relationship. This is an indication of negative effects but insignificant because of higher probability value ($p > 0.5$). This result is due to insufficient sample size. Ambiguity in the causal direction can be explained by problems associated either with sampling technique or modelling (Saunders and Lewis, 2018). This study case excludes the modelling issue as the relationships is theoretically sound and corroborated in extant studies. Despite the insignificance of the result, the beta coefficient indicates a negative trend as reported in studies. So, this study considers the importance of analyzing the business environment. The VUCA presents

both threats and opportunities. By analyzing the trends in the environment, top management can capitalize on the opportunity it presents and reduce its inherent risks.

Finally, this purpose of this study is to assess the mediating role of SMACs environment in the relationship between HRM digitalization and organizational performance. So, the hypothesis that SMACs mediates the relationships between HRM digitalization and organizational performance is supported ($B=0.178$; $t=5.601$; $p<.000$). This variable has not been considered as a mediating variables, but studies have linked SMACs technologies to organizational performance. For instance, Verma et al (2016) examine the link between SMACs capabilities and supply chain performance. Their findings indicate an increase in productivity, competitive advantage, and innovation. Moreover, Faruqui et al (2017) study the impact of SMACs technologies in 3 main sectors (banking, retail, and telecom) and their findings report an improvement in organizational productivity, business competitiveness and customer relations. The SMACs environment is multilevel phenomenon comprises of several technologies. An enterprise wide technological can differ from institution to another based on the number of integrated core technologies. This determines the digital maturity of a firm. The higher the digital maturity the higher the mediating effect. Thus, SMACs environment contributes to achieving organizational performance.

7. Limitations and Implications

This study is not left without limitation. The first limitation concerns the sampling size. The scope of this study is limited only to two organizations. So, the sample is inadequate to represent the sample population of the service sector in Ghana. However, the aim of this study is to gauge employee's perception about this observed phenomenon. So, this study is solely interested on employees' opinions. Furthermore, based on limitation in time and resources, the researcher couldn't go for a larger sample size. Second, the questionnaires are self-perceptual in nature. These limitations expose the study to the risk of common method bias. To control for this problem, Harman's single factor test is used to assess items total variance. The result reveals a value of 37.23% of total variance less than the 50% threshold, an indication that this study is free from common method bias.

This study first contributes to research by responding to calls for consideration to include the environmental context in studies linking HRM to organizational performance (Ambrosini and Bowman, 2009; Shoemaker et al, 2018; Corso et al; 2018). So, this study didn't only include the environmental context but considered the mediating role of the information technology environment. This study contributes to the literature by confirming the assumption of the resource-based view. Barney (1991) argues that human resource capabilities can be supported by technological resources. The findings of this study indicate though HRM digitalization positively impacts organizational performance, having a higher technological work environment can equally create an additional effect. Secondly, this study has managerial implications, that is managers must know that competitive advantage today can only be gained when we bundle both the human and technological resources. They must equally ensure that these resources remain valuable, rare, inimitable, and well organize to guarantee a competitive advantage. They must continually monitor changes in the business environments and refresh these resources to meet the demand of the markets. Doing so will guarantee not only a competitive edge but the achievement of superior economic performance.

8. CONCLUSION

The study perceives an organization as a system. It is interested in examining the combined effect of human and technological resources. This study perceives an organization as a subsystem. So, it assumes that an organization can't be studied in isolation. Specifically, the link between organization resources, activities or practices and firm's performance can't be made without regard to their operating environment. Doing so is to leave partly unexplained the process linking HRM digitalization to organizational performance'. It is for this reason that this study has examined the interaction effect of VUCA environment characterizes by its volatility, uncertainty, complexity, and ambiguity. The findings have shown a negative but insignificant effect of the external environment. Extant literature has equally shown a negative effect of the environmental context on organizational performance. For instance, changes in inflationary trends, political instability, growing insecurity, an increase in public debts, an emergence of a pandemic will negatively affect firms' performance.

Based on the findings of this and related studies, it is argued that no firm can survive without having the knowledge, skills and experience of spotting threats and opportunities that present the business environment. Apart from this know-how, managers must have the skills to bundle resources to meet the demands of the markets otherwise it stands to lose its competitive advantages and position. Digital technologies are the most used technologies in organization today. So, it is the aim of this study to solely investigate the mediating effect of this context. Five main technologies constitute the cornerstone of this environment. It is continuously shifting and presenting both opportunities and threats as well. Unlike the VUCA, they represent resources that firms can capitalize on for superior economic performance. The findings of this and related studies have revealed a linked between

technological environment and organizational performance. Thus, this study posits that human and technological resources are key organizational capabilities that must be harnessed for the benefits of organizations. The digitalized processes must continually be updated in accordance with new development of the SMACs environment. As internal resources, human and technological resources can collectively be used to solve external problems as noted by Barney. Future studies can emulate this study by collecting larger and varied sample population or consider a longitudinal study as moderation effect for cross-sectional studies are limited in statistical power. They can equally consider the moderating effect of each segment of the environment be it demographic, legal, technological and global to see which one has a higher moderating effect.

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DATA AVAILABILITY

The authors confirm that the data supporting the findings of this study are available upon request once the use is subject to data protection principles.

DISCLAIMER

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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