

## THE INFLUENCE OF HUMAN CAPITAL ADAPTIVE CAPACITY STRATEGIES ON ORGANIZATIONAL PERFORMANCE ACHIEVEMENTS MEDIATED BY ADAPTIVE E-PROCUREMENT SYSTEMS

**Tatiek Ekawati Permana**

Indonesian University of Education

tatiek.ekawati@upi.edu

### ABSTRACT

Tourism is an important aspect of economic activity, especially in Indonesia which has superior natural resource potential. However, there is a gap between tourism potential and the quality of human resources in driving the tourism economy, resulting in low tourism competitiveness compared to other countries. This research aims to find the best formula for building a model for improving organizational performance and competitiveness in the hotel industry through a strategic human resource management approach. How much organizational performance is achieved depends on the performance of its people, regardless of the shape, size, goals and characteristics of the organization. In the context of research, some research results also still contain disagreements regarding the understanding of Human Capital Management, which is generally widely understood as performance measurement, as well as the Adaptive E-Procurement system. This research uses quantitative methods with partial least squares (PLS) analysis tools. In this case, the researchers took samples based on the total population of 19 five-star hotels and 94 4-star hotels, according to the Slovin formula, namely 88 samples. The results showed that HCACS-X2 had a significant positive effect on OPC-Y. The HCACS-X2 variable against OPC-Y has an original sample of 0.382 in a positive direction, meaning that the better the HCACS-X2, the OPC-Y will also increase by 0.382. HCACS-X2 has a significant positive effect on OPC-Y through AE-PS-X3. The HCACS-X2 variable against OPC-Y via EPSA has an original sample of 0.352 in a positive direction, meaning that the better the HCACS-X2 via AE-PS-X3, the OPC-Y will also increase by 0.352.

**Keywords:** Human Capital Adaptive Capacity Strategy; Organizational Performance Achievements; Company; Hotel Business; Tourist.

### Introduction

The tourist and creative economy sectors in Indonesia have a substantial impact on the country's economy. These sectors contribute to the value-added, foreign exchange generation, and employment opportunities inside the nation (Ministry of Tourist and Economy, 2022). The diverse cultural, ethnic, and linguistic composition of the Indonesian landscape presents significant opportunities for the growth of tourism. Additionally, the creative economy sector holds the potential to serve as a driving force in enhancing labour absorption (Yunus & Indrasari, 2017).

The Ministry of Tourism and Creative Economy's report (2022) reveals that in 2021, the COVID-19 pandemic had a significant impact on the workforce in the tourism sector. Specifically, the report indicates that a total of 3.90 million individuals were affected. This figure encompasses 345 thousand individuals who were temporarily unemployed as a direct

result of COVID-19, as well as 3.55 million working residents who experienced a reduction in their working hours due to the pandemic. In comparison to the previous year, the COVID-19 pandemic has resulted in a reduction of 1.09 million individuals employed in the tourist industry.

The decrease in the quantity of individuals employed in the tourist industry may be attributed to the reduction in the workforce within the hotel sector. The hotel industry was the initial sector to see the impact of the coronavirus following its debut in late 2019. According to the findings presented in the 2021 report by the Central Statistics Agency (BPS), it was observed that a total of 3,216 establishments in the lodging sector experienced closure as a consequence of measures used to limit individuals' mobility, namely social distancing protocols, during the pandemic. However, it is anticipated that in the years 2021 and 2022, this particular industry would experience a resurgence due to the gradual relaxation of rules pertaining to community movement. According to the Ministry of Tourism and Economy (2022), there is evidence of a gradual recovery in the Indonesian economy, leading to improvements in the lodging sector, particularly hotels. The below information presents the numerical facts pertaining to the year 2022.

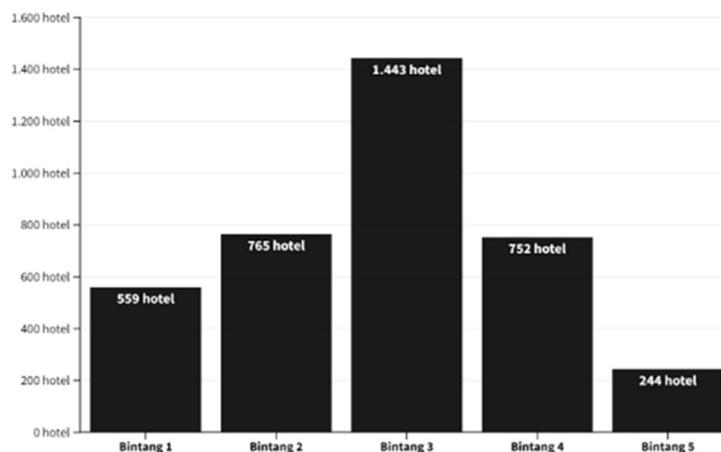


Figure 1. Number of Star Hotels in Indonesia in 2022

Source: BPS, 2022

According to the data presented in Figure 1, it can be observed that 3-star hotels exhibit the highest prevalence among the various categories of star hotels in Indonesia. Specifically, this category comprises a total of 1,443 hotels, accounting for about 38.3 percent of the overall star hotel count. The quantity of hotels classified as 2-star is the second highest, with a cumulative count of 765 establishments, while the number of 4-star hotels is next with a total of 752. In Indonesia, the total count of 1-star hotels amounts to 559, while the number of 5-star hotels has reached 244. In the meantime, the Bureau of Planning and Statistics (BPS) reported that the quantity of budget hotels in Indonesia has reached 12,970 establishments, encompassing a cumulative capacity of 294,001 rooms. This phenomenon elucidates the empirical state that is anticipated to manifest within the hotel business throughout the course of 2022. According to the Ministry of Tourism and Economy (2022), there is an anticipated

substantial growth in the number of foreign tourist visits in 2023, indicating that hotel performance is gradually returning to levels observed prior to the pandemic.

The disparity between the growth of hotels, international tourist arrivals, and the proficiency of human resources within the tourism industry, particularly in hotels, poses a significant challenge for Indonesian hotel entrepreneurs in acquiring highly skilled personnel (Fadhila, 2019). The potential for development in the hotel sector is contingent upon several factors, including service quality, service facilities, comfort, cleanliness, availability to entertainment and information, and convenience of ordering (Fadhila, 2019; Rahayu et al., 2018). The support of a high-quality staff, namely in the field of human resources (HR), is essential for the successful implementation of these six aspects. This is particularly important for hotels, as they play a crucial role in driving tourism and maintaining long-term competitiveness (Rahayu et al., 2018).

The presence of various empirical phenomena highlights an empirical gap, which necessitates the identification of an optimal formula for constructing a model that enhances organizational performance and competitiveness within the hotel sector. This may be achieved through the implementation of a human capital management strategy approach.

According to the research conducted by Kim and Choi (2022), it was determined that human components inside commercial organizations play a crucial role as the primary driving force. These elements possess the ability to learn, adapt, innovate, and generate creative impulses. When appropriately motivated, they contribute significantly to the organization's long-term sustainability. This perspective aligns with the assertions made by Barney et al. (2021), whereby they posit that human beings occupy a crucial role in driving various manifestations of innovation and creativity. This implies that the effectiveness of an organization is primarily influenced by the caliber of its human resource management in fostering ideation, creativity, and innovation (Kim & Choi, 2022; Hermansyah et al., 2022; Barney et al., 2021; Nurul Ichsan et al., 2020; Hunger & Wheelen, 2011).

According to Rajnoha and Lorincova (2015), enhancing the organizational performance of a corporation may be accomplished by directing attention towards internal factors such as quality management, re-engineering, downsizing, and restructuring. Nevertheless, this study fails to acknowledge the significance of generating customer value and instead concentrates solely on the internal facets of the organization. Consequently, the notion of performance measurement still presents a research gap in terms of enhancing organizational management performance, as elucidated in the HR strategy concept proposed by Kim and Choi (2022).

Hunger and Wheelen (2011) assert that organizational performance management holds significant importance for both small and large companies, encompassing both for-profit and non-profit organizations, and spanning domestic and global contexts. This imperative arises from its objective to facilitate comprehensive understanding and quantification of work accomplishments and endeavors in pursuit of predetermined organizational objectives. This is achieved through the implementation of predetermined management strategies over a specific timeframe. The achievement of organizational performance is contingent upon the performance of its personnel, irrespective of the organization's structure, dimensions, objectives, and attributes (Hermansyah et al., 2022; Nurul Ichsan et al., 2020; Hunger & Wheelen, 2011).

According to Hossain (2016), multiple researchers in the domain of human resource management concur on the definition of Human Capital Management (HCM) as the aggregation of knowledge, skills, experience, creativity, and other pertinent workforce characteristics. This encompasses the utilization of metrics to assess the worth of these attributes and the application of this knowledge to effectively administer the organization.

According to Zamora (2007), human resource management, also known as Human Capital Management, focuses on the acquisition, analysis, and communication of data that guides value-enhancing strategic management decisions, investments, and operational activities pertaining to personnel, both at the organizational level and within front-line management. Asserts that Human Capital Management (HCM) encompasses a methodical examination, quantification, and assessment of the manner in which policies and practices pertaining to individuals contribute to value creation (Kearns, 2005). The paper provides an analysis of Human Capital Management (HCM) as a strategic approach to managing personnel, highlighting the need of considering it at a higher level rather than only as an operational matter. The report also emphasizes the significance of measuring organizational HCM goals, as discussed by Kearns (2005).

There remains ongoing debate around the comprehension of HCM, which is commonly recognized as a performance evaluation tool, as elucidated by Salau et al. (2016) in several study findings. Salau et al. (2016) posit that Human Capital Management (HCM) is perceived as a comprehensive and organized endeavor undertaken by an organization to effectively oversee and enhance the capabilities of its human resources, with the aim of attaining notably elevated levels of performance. Kearns (2005) provides an explanation of Human Capital Management (HCM) as a comprehensive system aimed at cultivating the complete human potential inside an organization, which is manifested via the organization's core values. According to Kearns (2005), the concept of Human Capital Management (HCM) is the implementation of an organizational strategy that seeks to cultivate organizational values through leveraging the potential of individuals, with the ultimate goal of enhancing competitiveness and overall organizational performance.

In contrast, McWilliams et al. (1970), proponents of the resource-based view (RBV), claim that organizations may use three distinct resources - physical, human, and organizational - to attain a sustained competitive edge within their respective industries. The competitive advantage of an organization is contingent upon its ability to address four key questions pertaining to Value, Rareness, Inimitability, and Non-substitutability (VRIN) (Wright et al., 1994; Barney, 1991). According to Putra et al. (2021) and McWilliams et al. (1970), a business organization can generate substantial value by either reducing the costs associated with its products/services or by differentiating said products/services in a manner that justifies a premium price.

The literature suggests that physical capital, which refers to human resources, and organizational capital, which pertains to the resources of an organization, have been seen to be replicated by competitors, thereby making them non-imitable resources (Barney et al., 2021; McWilliams et al., 1970). The quality of inimitability is often regarded as a fundamental requirement for an organization to attain a competitive advantage. Human resources, in addition to being acknowledged as the primary strategic asset of an organization, have been

acknowledged for their unparalleled potential due to the distinctive contributions that each person is capable of making (Barney et al., 2021; Bartlett & Ghoshal, 2004).

Based on a synthesis of many research presentations, it can be inferred that a research gap exists in the idea of the Adaptive e-Procurement Human Capital System (AEHCS). Specifically, there is a lack of comprehensive scholarly reviews pertaining to the evolving nature of the e-HCP concept within academic circles. The practical implementation of e-HCP in the hotel industry has given rise to certain barriers that restrict the HR procurement process and system within the industry. The current development of e-HCP is primarily focused on electronic recruitment applications and has not yet encompassed the concept of procurement (Babaita et al., 2020).

In the context of the Resources Based View (RBV), certain scholars argue that financial resources, economic scale, and technology are perceived as relatively more accessible sources of value creation (Barney et al., 2021; Bartlett & Ghoshal, 2004; Wright et al., 1994). This perspective highlights a theoretical gap. Nevertheless, the existing resources are inadequate in the present period. In the context of the global tourism industry's evolution, hotel establishments within the tourist accommodation sector place significant emphasis on human resource practices as a primary means of attaining sustainable competitive advantage, given the labor-intensive nature of the industry (Purusotomo & Hadinugroho, 2021; Baum et al., 2008). The empirical gaps, research result gaps, and gaps in the distinctive perspective of the organization are all factual in nature.

## **Method**

The present study employs quantitative methodologies, namely utilising partial least squares (PLS) analytic techniques. The present study employed a quantitative research methodology, specifically adopting a supply side strategy by focusing on providers within the hotel service business. The target audience for this study consisted of department managers from established hotels, who were selected as the sample for data collection. The collection of quantitative data was facilitated by the utilisation of a questionnaire that was constructed in accordance with pertinent theoretical frameworks and empirical research.

A structural equation model based on partial least squares (PLS) was employed to conduct multivariate quantitative analysis. The process of data analysis utilising Partial Least Squares (PLS) has been conducted in three distinct steps, which are as follows: The initial phase of model definition involves the identification and establishment of a model that incorporates latent variables and indicators, drawing upon existing theoretical frameworks and empirical research. The second stage of assessment involves assessing the outer model or measurement model. The outer model, also known as the measurement model, refers to a systematic procedure utilised to construct and assess a model that captures the association between latent variables and their corresponding indicators. The assessment step of the inner model or structural model is conducted to examine the connection and relevance of variables inside the model.

**Table 1. Operational Definition of Research Variables**

Variable Name	Definition	Indicator	Scale	Source
Human Capital Adaptive Capacity Strategy (HCACS)	The Human Capital Adaptive Capacity Strategy (HCACS) is a theoretical framework that integrates the principles of adaptive capacity strategy theory with the concept of absorptive capacity. HCACS specifically pertains to the capacity of individuals within a system to assimilate knowledge and adjust to climate change, including variations in workforce climate. This capacity enables individuals to mitigate potential negative impacts, capitalise on opportunities, and effectively respond to the consequences of climate change.	Acquisition Competency	Interval	(Mortreux & Barnett, 2017; Brooks, 2015; Barnett, 1960)Coltman et al., 2008; Fastré et al., 2010)
		Utilization Competency	Interval	
		Retention Competency	Interval	
Adaptive E-Procurement System (AE-PS)	The process of acquiring, absorbing, modifying, and leveraging the workforce procurement system inside an organisation is undertaken with the aim of developing high-quality human resource capabilities. This is achieved via the use of a dynamic recruitment application system, which is implemented in order to enhance overall organisational performance.	Recruitment Application System	Interval	Brooks, 2015; Chrisidu-Budnik & Przedańska, 2017; Hashim, 2022)
		Job Specifications	Interval	
		Test & Selection System	Interval	
		Test Results and Selection	Interval	
Organizational Performance (OPC)	Organizational performance is the effectiveness of the organization as a whole to meet the stated needs of each relevant group through systemic efforts and continuously improving organizational capabilities to achieve them effectively.	Excellent service	Interval	Faraj et al., (2021) I. Lee (2011) dan Alsultanny & Alotaibi (2015)
		High Creativity	Interval	
		Costs & Benefits	Interval	

Source: Processed data, 2023

In this particular instance, the researchers collected samples from a population consisting of 19 five-star hotels and 94 four-star hotels. The sample size of 88 was determined using the Slovin algorithm. Researchers gather data sources in the form of primary data and secondary data throughout the process of data collection. The data gathering approach employed by the author

was the utilisation of a survey method, wherein a questionnaire was directly administered to the respondents.

### Result & Discussion

Table 2. Descriptive HR Adaptive Capacity Strategy Variable (X2)

Variable	Dimensions	Statement Indicator	Alternative Answers											Score Value	Average Value	Information
			1	2	3	4	5	6	7	8	9	10				
HR Adaptive Capacity Strategy (HCA CS)	Acquisition Competency	Q 1 Every hotel employee must have competency certification in the field of communication and TOEIC with superior grades	0	0	2	5	2	3	18	40	51	64	1599	8.64	Good	
		Q 2 Every employee who will be accepted by the hotel must have competency certification in their field of expertise (kitchen, front office, management, housekeeping, etc.)	0	0	0	7	0	6	20	31	42	79	1620	8.76	Good	
		Q 3 Every incoming employee must have a history of	0	0	3	8	3	8	16	22	38	87	1604	8.67	Good	

		superior industry work practices															
Utilization Competency	Q 4	It is imperative for every employee to possess the requisite competencies that align with the established work standards and performance goals set by the hotel in order to get desired outcomes.	0	0	0	0	0	0	1	3	5	9	1715	9.27	Very Good		
	Q 5	The hotel's work standards must be used as a selection tool for professional and potential workers	0	0	4	5	1	6	2	2	3	7	1546	8.36	Good		
	Q 6	The skills of the workforce received must be able to maximize productivity in the	0	0	2	1	2	7	2	4	4	5	1591	8.60	Good		

		company (hotel)															
Retention Competency	Q7	The hotel provides a career path guarantee to employees who have achievements	0	0	0	0	0	1	2	3	5	8	1703	9.21	Very Good		
	Q8	The company provides transparent rewards according to performance and achievements to employees over a certain period	0	0	0	0	0	0	7	3	4	9	1714	9.26	Very Good		
	Q9	Companies or hotels are committed to increasing employee loyalty through improving employee welfare	0	0	0	0	4	1	2	4	3	5	1552	8.39	Good		
Minimum Score Value for HR Adaptive Capacity Strategy Variable												1546	8.36	Good			
Maximum Score Value of HR Adaptive Capacity Strategy Variable												1715	9.27	Very Good			
<b>Total average value of HR Adaptive Capacity Strategy Variables</b>												<b>1627.11</b>	<b>8.80</b>	<b>Good</b>			

Total Standard Deviation Value of HR Adaptive Capacity Strategy Variables	67.0 195	0.3 6
---	-------------	----------

Based on the data processing results described in the table above, it can be seen that the minimum score for the HR Adaptive Capacity Strategy variable is 1546, with an average of 8.36 and is in the good category. Meanwhile, the maximum score for the HR Adaptive Capacity Strategy variable is 1715, with an average of 9.27 and is in the very good category. Therefore, the total average value of the HR Adaptive Capacity Strategy variable is 8.80, therefore, it can be concluded that the HR Adaptive Capacity Strategy variable is in the good category.

Table 3. Descriptive Organizational Performance Variables

Variable	Dimensions	Statement Indicator	Alternative Answers											Score Value	Average Value	Information
			1	2	3	4	5	6	7	8	9	10				
Organizational Performance (OPC)	Excellent service	Q10	every employee has mastered excellent service according to 5 star hotel standards	0	0	0	0	0	0	1	3	6	8	1716	9.28	Very Good
		Q11	every employee can provide excellent service according to 5 star hotel standards	0	0	0	0	0	3	10	3	6	7	1681	9.09	Good
		Q12	Each employee can evaluate excellent service according to 5 star hotel standards to improve performance	0	0	6	0	10	16	19	35	52	47	1515	8.19	Quite Good

High Creativity	Q1 3	each employee is able to provide innovation in managing hotel activities that attract visitors	0	0	0	0	3	6	1	4	4	3	148	8.0	Quite Good
	Q1 4	each employee can provide offers in the marketing system to increase company sales/turnover (hotel packages, events, co-branding etc.)	0	0	3	2	2	1	1	2	4	5	149	8.0	Quite Good
	Q1 5	Employees can create certain activities to increase engagement internally (fellow employees) and externally (hotel guests)	0	0	3	2	2	1	1	2	4	5	149	8.0	Quite Good
	Q1 6	The recruitment system that already exists in the company can help make	0	0	0	0	1	2	1	3	6	6	165	8.9	Good

	the employee procurement process more conducive and efficient																
Q1 7	The right recruitment method can save training costs because you get employees who meet the company's needs and standards	0	0	0	0	8	5	14	29	56	73	1634	8.83	Good			
Q1 8	the recruitment system can adapt to changing standards of needs and required competencies	0	0	5	0	4	5	19	32	59	61	1595	8.62	Good			
Minimum Score Value for Organizational Performance Variables												1481	8.01	Quiet Good			
Maximum Score Value for Organizational Performance Variables												1716	9.28	Very Good			
<b>Average value of Total Organizational Performance Variables</b>												<b>1585.11</b>	<b>8.57</b>	<b>Good</b>			
Total Standard Deviation Value of Organizational Performance Variables												90.09	0.49				

Based on the data processing results described in the table above, it can be seen that the minimum score for the Organizational Performance variable is 1481, with an average of 8.01 and is in the somewhat good category. Meanwhile, the maximum score for the Organizational Performance variable is 1716, with an average of 9.28 and is in the very good category. Therefore, the total average value of the Organizational Performance variable is 8.57, therefore, it can be concluded that the Organizational Performance variable is in the good category.

Table 4. Descriptive Variables for Adaptive E-Procurement Systems

Alternative Answers					

Variable	Dimensions	Statement Indicator	1	2	3	4	5	6	7	8	9	10	Score Value	Average Value	Information
Adaptive E-Procurement System (AE-SP)	Recruitment Application System	Q19 The recruitment application presented by the hotel (company) must be easy to access and its appearance can be understood by prospective employees so that they can screen the prospective employees needed by the hotel	0	0	0	0	0	2	6	19	76	82	1710	9.24	Very Good
		Q20 The company's recruitment application is able to capture complete data and profiles of prospective employees	2	0	2	4	10	11	19	37	33	67	1536	8.30	Good
		Q21 The recruitment application	0	0	2	4	5	93	7	12	26	36	1344	7.26	Tends to

		provides tests and assessments in accordance with the competency areas that are evaluative in nature as material for consideration in the recruitment process														be good
Job Specifications	Q2 2	The recruitment application must be able to screen prospective employees according to the company's existing competency specifications	0	0	3	3	4	13	17	23	46	76	1596	8.63	Good	
	Q2 3	The recruitment application must be able to direct prospective employees to the type of work that is in	0	0	3	4	4	56	15	21	36	46	1438	7.77	Quite Good	

		accordance with the competencies they have and the competencies required by the company													
	Q2 4	The application must be able to describe the type of work according to the standards required by the company (5 star hotel) to prospective employees	0	0	1	2	3	54	1	2	2	2	13	7.1	Tends to be good
Test & Selection System	Q2 5	Every employee must be able to master English according to company standards	0	0	0	1	3	63	1	1	2	3	13	7.0	Tends to be good
	Q2 6	Each employee must pass a psychological test with a certain	1	0	1	4	2	11	1	4	6	4	15	8.4	Good

		score in accordance with hotel regulations													
	Q27	Every employee must have national and international competency certification	0	0	0	0	0	0	2	2	7	7	17	9.2	Very Good
Test Results and Selection	Q28	The results of the tests and selections carried out by the hotel are transparent and can be accessed by prospective employees	1	0	2	0	3	57	9	1	3	3	13	7.1	Tends to be good
	Q29	Test and selection results can be easily accessed or received by employees directly	0	0	1	1	3	61	1	2	2	2	12	7.0	Tends to be good
	Q30	Candidates who pass the test and selection can schedule an interview	0	0	1	0	8	13	2	3	4	4	14	8.0	Quite Good

			to determine the position and location of the job																
Minimum Score Value for Adaptive E-Procurement System Variables													1297	7.01	Tends to be good				
Maximum Score Value for Adaptive E-Procurement System Variables													1715	9.27	Very Good				
Average value of Total Adaptive E-Procurement System Variables													1469.08	7.94	Quite Good				
Standard Deviation Value of Total Adaptive E-Procurement System Variables													155.12	0.84					

Based on the data processing results described in the table above, it can be seen that the minimum score for the Adaptive E-Procurement System variable is 1297, with an average of 7.01 and is in the good category. Meanwhile, the maximum score for the Adaptive E-Procurement System variable is 1715, with an average of 9.27 and is in the very good category. Therefore, the total average value of the Adaptive E-Procurement System variable is 7.94, therefore, it can be concluded that the Adaptive E-Procurement System variable is in the rather good category.

Table 5. Path Significance Test

Hypothesis	Influence	Original Sample (O)	T Statistics ( O/STDEV )	P Values	Information
H1	HCACS-X2 -> OPC-Y	0.382	7.984	0.000	Significant
H2	HCACS-X2 -> AE-PS-X3 -> OPC-Y	0.352	9.339	0.000	Significant

Based on this figure, it shows that both H1 and H2 show a significant influence. The following is a visualization of the research results.

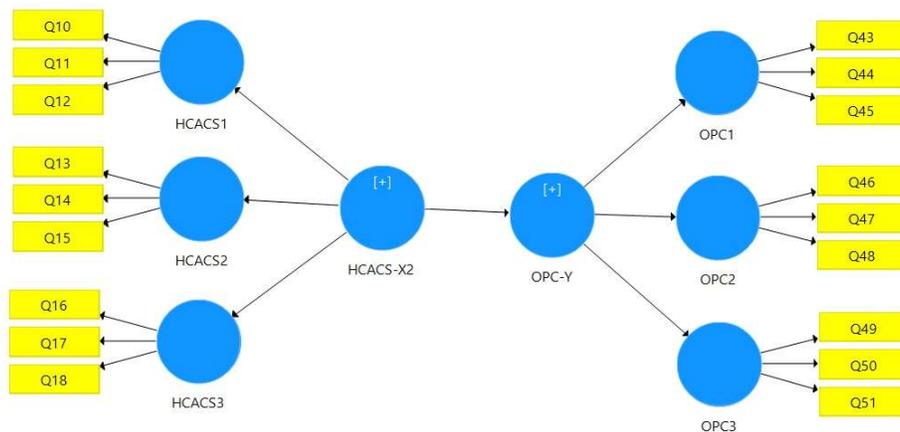


Figure 2. Hypothesis Test 1

The results of the analysis using Smart PLS are presented in the table above with a significance level of 5%. The resulting T statistic value of 7.984 is greater than the t table value (1.64) and the P-value is  $0.000 < 0.05$ . Thus, the results of testing hypothesis 3 are that  $H_0$  is rejected and  $H_1$  is accepted, meaning that HCACS-X2 has a significant positive effect on OPC-Y. The HCACS-X2 variable against OPC-Y has an original sample of 0.382 in a positive direction, meaning that the better the HCACS-X2, the OPC-Y will also increase by 0.382.

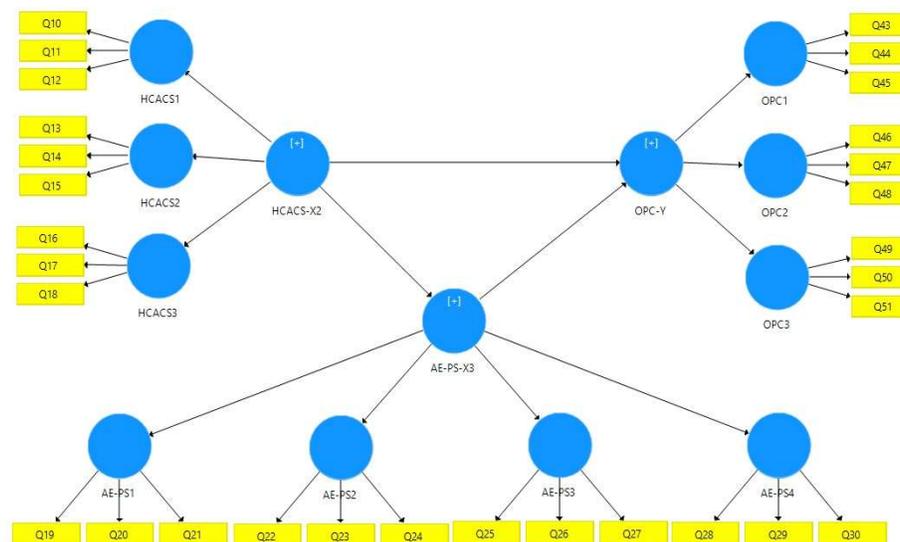


Figure 3. Hypothesis Test 3

The results of the analysis using Smart PLS are presented in the table above with a significance level of 5%. The resulting T statistic value of 9.339 is greater than the t table value (1.64) and the P-value is  $0.000 < 0.05$ . Thus, the results of testing hypothesis 5 are that  $H_0$  is rejected and  $H_1$  is accepted, meaning that HCACS-X2 has a significant positive effect on OPC-Y through AE-PS-X3. The HCACS-X2 variable against OPC-Y via EPSA has an original sample of 0.352 in a positive direction, meaning that the better the HCACS-X2 via AE-PS-X3, the OPC-Y will also increase by 0.352.

The findings of this study align with the Resource-Based View (RBV) hypothesis, which posits that a company's resources and capabilities play a crucial role in determining its competitive advantage and overall success. The Resource-Based View (RBV) is a theoretical framework that underscores the significance of strategic resources in enhancing an organization's competitive advantage. The concept of competitive advantage has been widely discussed in the academic literature, with scholars such as Wright et al. (1994), Barney (1991), and Wernerfelt (1984) highlighting its significance. Competitive advantage enables organisations to achieve better performance in their respective industries.

Boxall (1998) asserts that human resources, sometimes referred to as human capital, serve as the primary catalyst for the utilisation and optimisation of diverse material and technological resources. The origins of axial capacities. The ability to initiate and facilitate constructive transformation. The individual experiences a revitalization of their intellectual vigour and enhanced cognitive capacities. Garavan et al. (2016) posit that the process of human capital development encompasses two primary dimensions. The first dimension pertains to the enhancement of tangible skills, while the second dimension focuses on facilitating gainful employment opportunities. These dimensions are realised through investments in human capital, which are facilitated by organisational mechanisms such as education and training. These mechanisms aim to augment individuals' knowledge, skills, and abilities.

The research findings also validate the conclusions drawn by Wang et al. (2012), which demonstrate that the comprehensive mediation model establishes that strategic human capital not only encompasses the advantages of HR deployment and inimitability processes customised to the organization's strategic requirements, but also necessitates targeted restructuring focused on human capital to enhance the company's adaptable capabilities. According to the findings of Barney et al. (2021), it is imperative for organisations to effectively leverage their human resources in order to sustain dynamic strategic capabilities. This entails not only maximising productivity, but also ensuring that these resources contribute to the core competencies of the company. By doing so, the organisation can differentiate itself and continuously adapt and reconfigure its structure in response to evolving environmental conditions. The term "dynamic" refers to a state or process characterised by constant change, activity,

Cohen and Levinthal (1990) highlight the significance of absorptive capacity as a crucial concept that impacts strategic flexibility and many manifestations of innovation. The concept of absorptive capacity is of utmost importance for a company's innovation skills, as it pertains to the organization's capability to effectively identify, incorporate, and use important, novel, and external information. According to Miroshnychenko et al. (2021), the absorption capacity of an organisation is contingent upon the absorption ability exhibited by its individual members. As to his statement, the enhancement of an organization's absorptive ability would be contingent upon prior investments made in the growth of its constituents and individual absorptive capacity. The absorptive capacity of the organisation is likely to increase in an accumulative manner.

However, as Kimberly (2016) argues, the concept of absorptive ability in a corporation extends beyond the individual absorptive capacity of its employees. It is important to evaluate several elements of organisational absorptive capacity. The concept of absorptive capacity encompasses more than just the process of an organisation acquiring or assimilating

knowledge; it also encompasses the organization's capability to effectively utilise and exploit that information. Hence, the absorptive ability of an organisation is not only contingent upon the organization's direct interactions with the external environment. However, the effectiveness of information transfer across different divisions within the organisation is contingent upon several factors. In their study, Miroshnychenko et al. (2021) examine the concept of absorptive resources within organisations. They specifically investigate the communication dynamics between the organisation and its external environment, as well as the communication patterns among different sub-units within the organisation. Additionally, they analyse the nature and allocation of expertise within the organisation as factors influencing absorptive resources.

The findings that demonstrate the presence of both direct and media influence can be attributed to the success of the adaptive strategy concept. This concept combines the notion of adaptive dynamic capacity, which originated from the development of corporate strategic management (David, 2011; Hunger & Wheelen, 1994), with Todorova & Durisin (2007) dynamic strategy theory. Additionally, it incorporates the concept of absorptive capacity, which was developed by Cohen (1989) and Van Den Bosch et al. (1999). Absorptive capacity is an integral element of a company or organization's business strategy, which leverages the concept of sustainable competitive advantage and is rooted in resource theory or the Resource Based View (RBV) (Hossain, 2022).

Based on the findings of the synthesis process, the concept of the adaptive e-procurement system (AE-PS) proposed in this study can be characterised as a set of organisational activities aimed at acquiring, assimilating, modifying, and leveraging the workforce procurement system to enhance the quality of human resource capabilities. This is achieved through the utilisation of a dynamic recruitment application system, with the ultimate goal of improving organisational performance. This suggests the necessity of HR procurement, since the procedure of finding, sourcing, and hiring personnel may be categorised into two primary classifications: active and passive. Active human resource procurement refers to the proactive approach adopted by organisations in actively seeking out and recruiting new personnel. Passive human resource procurement refers to the practise employed by organisations to find eligible individuals via the utilisation of online databases or interview systems. Adaptive e-procurement systems (AE-PS) may be categorised as a form of HR procurement that falls under this passive approach.

The practise of HR procurement enables an organisation or corporation to effectively discover and evaluate the requisite skills and competencies required to fulfil its workforce requirements. According to Odhiambo and Theuri (2014), this practise also aids organisations in identifying suitable individuals who align with their organisational culture and objectives. In their book, Chrisidu-Budnik and Przedzińska (2017) elucidate that HR procurement encompasses the systematic endeavour of identifying and acquiring highly skilled persons who possess the potential to make significant contributions to the achievements of an organisation.

## **Conclusion**

The hotel sector has experienced significant changes in work practises and processes as a result of advancements in digital technology, particularly in the area of human resource procurement. The transformation of the contemporary paradigm in the operational performance of hotel sector organisations in Indonesia necessitates diligent efforts and substantial financial

resources to achieve enhanced industrial competitiveness. The hotel industry in Indonesia has been significantly impacted by the rapid advancement of digital technology and social media, as well as the COVID-19 pandemic. These factors have prompted the industry to enhance the competence of its workforce in order to deliver exceptional, inventive, and forward-thinking services. This is crucial for the industry to remain competitive and sustain its operations amidst the evolving dynamics within the tourism sector.

## References

- Alsultanny, Y. A., & Alotaibi, M. F. (2015). Evaluating the Factors Affecting on Intension to Use of E-Recruitment Health record View project Image Processing View project Evaluating the Factors Affecting on Intension to Use of E-Recruitment. *American Journal of Information Science and Computer Engineering*, 1(5), 324–331. <http://www.aiscience.org/journal/ajiscehttp://creativecommons.org/licenses/by-nc/4.0/>
- Babaita, I. S., Rafiu, A. J., & Aremu, S. A. (2020). Impact of Information Technology on Human Resource Management Procurement Functions: A Case of A Nigerian University. *Malaysian Management Journal*, 22(December), 139–151. <https://doi.org/10.32890/mmj.22.2018.9676>
- Barnett, H. . (1960). Research and Development, Economic Growth, and National Security. *The ANNALS of The American Academy of Political and Social Science*, 327(1), 36–49. <https://books.google.com/books?hl=en&lr=&id=P7zxudnqdzMC&oi=fnd&pg=PA395&dq=national+security&ots=uy4iozBmsv&sig=rLMi28O9OKcuYItC44H4YaVRuBU>
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99–120.
- Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-Based Theory and the Value Creation Framework. *Journal of Management*, 47(7), 1936–1955. <https://doi.org/10.1177/01492063211021655>
- Barney, J. B., Ketchen, D. J., & Wright, M. (2021). Resource-Based Theory and the Value Creation Framework. *Journal of Management*, 47(7), 1936–1955. <https://doi.org/10.1177/01492063211021655>
- Bartlett, C. A., & Ghoshal, S. (2004). Building Competitive Advantage Through People. *MIT Sloan Management Review*, 45(2), 26–32. <http://dialnet.unirioja.es/servlet/articulo?codigo=2316408>
- Baum, T., Watson, S., & Deery, M. (2008). Implications of Hospitality and Tourism Labour Markets for Talent Management Strategies. *International Journal of Contemporary Hospitality Management*, 20(7), 720–729. <http://dx.doi.org/10.1108/09596110810897574%0Ahttp://%0Ahttp://dx.doi.org/10.1108/09596110810897592>
- Boxall, P. (1998). Achieving Competitive Advantage Through Human Resource Strategy: Towards A Theory of Industry Dynamics. *Human Resource Management Review*, 8(3), 265–288. [https://doi.org/10.1016/s1053-4822\(98\)90005-5](https://doi.org/10.1016/s1053-4822(98)90005-5)

- Brooks, N. W. N. A. (2015). Assessing and Enhancing Adaptive Capacity. In *Adaptation Policy, Frameworks For Climate Change: Developing Strategies, Policies And Measures* (pp. 22–35). CAMBRIDGE UNIVERSITY PRESS. <https://doi.org/10.4324/9780203105061>
- Chrisidu-Budnik, A., & Przedańska, J. (2017). The Agency Theory Approach to the Public Procurement System. *Wroclaw Review of Law, Administration & Economics*, 7(1), 154–165. <https://doi.org/10.1515/wrlae-2015-0059>
- Chrispine Odhiambo, A., & Simba Theuri, D. (2014). Effects of Public Procurement Processes on Organization Performance. *International Journal of Scientific and Research Publications*, 5(1), 2250–3153. [www.ijsrp.org](http://www.ijsrp.org)
- Cohen, W. M. (1989). Innovation and Learning: The Two Faces of R & D. *The Economic Journal*, 99(397), 569–596.
- Coltman, T. R., Devinney, T. M., & Midgley, D. F. (2008). The value of managerial beliefs in turbulent environments: Managerial orientation and e-business advantage. *Journal of Strategy and Management*, 1(2), 181–197. <https://doi.org/10.1108/17554250810926366>
- David, F. F. D. M. D. (2011). *Strategic Management: A Competitive Advantage Approach* (Issue 1).
- Fadhila, R. S. N. R. (2019). Pengaruh Jumlah Kunjungan Wisatawan, Tingkat Hunian Hotel, Lama Menginap Wisatawan Terhadap Pertumbuhan Ekonomi Kalimantan Selatan. *JIEP: Jurnal Ilmu Ekonomi Dan Pembangunan*, 2(1), 21. <https://doi.org/10.20527/jiep.v2i1.1152>
- Faraj, K. M., Faeq, D. K., Abdulla, D. F., & Ali, B. J. (2021). Total Quality Management And Hotel Employee Creative Performance: The Mediation Role Of Job Embeddedment. *Journal of Contemporary Issues in Business and Government*, 27(1), 3838–3855. <https://doi.org/10.47750/cibg.2021.27.01.001>
- Fastré, G. M. J., van der Klink, M. R., & van Merriënboer, J. J. G. (2010). The effects of performance-based assessment criteria on student performance and self-assessment skills. *Advances in Health Sciences Education*, 15(4), 517–532. <https://doi.org/10.1007/s10459-009-9215-x>
- Garavan, T., Shanahan, V., Carbery, R., & Watson, S. (2016). Strategic Human Resource Development: Towards A Conceptual Framework to Understand Its Contribution to Dynamic Capabilities. *Human Resource Development International*, 19(4), 289–306. <https://doi.org/10.1080/13678868.2016.1169765>
- Hashim, N. L., Yusof, N., Hussain, A., & Ibrahim, M. (2022). User Experience Dimensions for E-procurement: A Systematic Review. *Journal of Information and Communication Technology*, 21(4), 465–494. <https://doi.org/10.32890/jict2022.21.4.1>
- Hermansyah, H., Tukiran, M., Herlina, E., & Andrianto, M. T. (2022). A Review of Strategic Human Resources Management in Organization. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences*, 5(2), 14422–14429. <https://bircu-journal.com/index.php/birci/article/view/5309>
- Hossain, M. S., Hussain, K., Kannan, S., & Kunju Raman Nair, S. K. (2022). Determinants of sustainable competitive advantage from resource-based view: implications for hotel industry. *Journal of Hospitality and Tourism Insights*, 5(1), 79-98.

- Hossain, M. U. I. R. (2016). Human Capital Management: The New Competitive Approach. *International Journal of Economics, Commerce and Management*, IV(5), 247–271. [https://doi.org/10.1007/978-3-658-14330-5\\_10](https://doi.org/10.1007/978-3-658-14330-5_10)
- Hunger, D., & Wheelen, T. (2011). *Essential of Strategic Management*. In Prentice Hall.
- Kearns, P. T. (2005). What Do We Mean by Human Capital Management. In *What's the Future for Human Capital?* (Issue April, pp. 1–10). CIPD Essay 1.
- Kim, J. Y., & Choi, J. H. (2022). The Impact of Adaptation-Oriented HRM on Exploration: Mediating Effects of Self-Organization. *Sustainability (Switzerland)*, 14(23), 1–14. <https://doi.org/10.3390/su14231577>
- Kimberly, K. W. Z. G. Z. E. P. (2016). Absortive Capacity Versus Distributive Capability. *International Journal of Operations & Production Management*, 36(10), 282–315. <http://dx.doi.org/10.1108/IJOPM-03-2014-0143%5Cnhttp://dx.doi.org/10.1108/IJOPM-04-2013-0182%5Cnhttp://dx.doi.org/10.1108/IJOPM-08-2012-0315>
- Lee, I. (2011). Modeling the benefit of e-recruiting process integration. *Decision Support Systems*, 51(1), 230–239. <https://doi.org/10.1016/j.dss.2010.12.011>
- McWilliams, A., Van Fleet, D., & Wright, P. (1970). Strategic Management of Human Resources For Global Competitive Advantage. *Journal of Business Strategies*, 18(1), 1–24. <https://doi.org/10.54155/jbs.18.1.1-24>
- Ministry of Tourist and Economy. (2022). *Tourism and Creative Economy Labor Statistics 2018-2021*. Tourism and Creative Economy Agency.
- Miroshnychenko, I., Strobl, A., Matzler, K., & De Massis, A. (2021). Absorptive capacity, strategic flexibility, and business model innovation: Empirical evidence from Italian SMEs. *Journal of Business Research*, 130(February 2019), 670–682. <https://doi.org/10.1016/j.jbusres.2020.02.015>
- Mortreux, C., & Barnett, J. (2017). Adaptive capacity: exploring the research frontier. *Wiley Interdisciplinary Reviews: Climate Change*, 8(4), 1–12. <https://doi.org/10.1002/wcc.467>
- Nurul Ichsan, R., Santosa, S., Shara, Y., Yustiasari Liriwati, F., Al Washliyah, N., & Auliaurasyidin Tembilahan Riau, S. (2020). Investigation of Strategic Human Resource Management Practices in Business after COVID-19 Disruption. *Journal Of Archaeology Of Egypt/Egyptology*, 17(7), 13098
- Purusotomo, B. A., & Hadinugroho, B. (2021). The Moderating Role of Agency Cost on The Relationship Between Capital Structure and Firm Performance: Empirical Evidence From Indonesia State-Owned Enterprises. *International Journal of Economics, Business and Accounting Research (IJEBAR)*, 5(3), 1019–1032.
- Putra, I. G. C., Wiagustini, N. L. P., Ramantha, I. W., & Sedana, I. B. P. (2021). Financial Sustainability Based on Resource Based View Theory and Knowledge Based View Theory. *Academy of Accounting and Financial Studies Journal*, 25(Special Issue 2), 1–15.
- Rahayu, M. A., Senen, S. H., & Razati, G. (2018). Gambaran Lingkungan, Kepuasan Kerja Dan Loyalitas Karyawan El Royale Hotel Bandung. *Journal of Business Management Education (JBME)*, 3(1), 11–20. <https://doi.org/10.17509/jbme.v3i1.14243>

- Rajnoha, R., & Lorincova, S. (2015). Strategic Management of Business Performance Based on Innovations and Information Support in Specific Conditions of Slovakia. *Journal of Competitiveness*, 7(1), 3–21. <https://doi.org/10.7441/joc.2015.01.01>
- Salau, O. P., Falola, H. O., Ibidunni, A. S., & Igbino, E. E. (2016). Exploring the role of human capital management on organizational success: evidence from public universities. *Management Dynamics in the Knowledge Economy*, 4(4), 493–513.
- Todorova, G., & Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy of management review*, 32(3), 774–786.
- Van Den Bosch, F. A. J., Volberda, H. W., & De Boer, M. (1999). Coevolution of Firm Absorptive Capacity and Knowledge Environment: Organizational Forms and Combinative Capabilities. *Organization Science*, 10(5), 551–568. <https://doi.org/10.1287/orsc.10.5.551>
- Wang, C. H., Chen, K. Y., & Chen, S. C. (2012). Total quality management, market orientation and hotel performance: The moderating effects of external environmental factors. *International Journal of Hospitality Management*, 31(1), 119–129. <https://doi.org/10.1016/j.ijhm.2011.03.013>
- Wernerfelt, B. (1984). A Resource-Based View of The Firm. *Journal of Management*, 5(2), 171–180.
- Wesley M. Cohen, & Daniel A. Levinthal. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, SAGE, 35(1), 128–152. <https://sci-hub.se/10.2307/2393553>
- Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: A resource-based perspective. *The International Journal of Human Resource Management*, 5(2), 301–326. <https://doi.org/10.1080/09585199400000020>
- Yunus, E., & Indrasari, M. (2017). Opportunities and challenges of tourism industry. *International Journal of Economic Research*, 14(7), 277–291.
- Zamora, B. (2007). a New Discussion of the Human Capital Theory in the Methodology of Scientific Research Programmes. *Departament d'Economia. Universitat Jaume I, Campus Riu Sec, E-12071 Castellón (Spain).*, December, 1–19
- Mehraj, H., Jayadevappa, D., Haleem, S. L. A., Parveen, R., Madduri, A., Ayyagari, M. R., & Dhabliya, D. (2021). Protection motivation theory using multi-factor authentication for providing security over social networking sites. *Pattern Recognition Letters*, 152, 218–224.
- Soni, M., Khan, I. R., Babu, K. S., Nasrullah, S., Madduri, A., & Rahin, S. A. (2022). Light weighted healthcare CNN model to detect prostate cancer on multiparametric MRI. *Computational Intelligence and Neuroscience*, 2022.
- Sreenivasu, S. V. N., Gomathi, S., Kumar, M. J., Prathap, L., Madduri, A., Almutairi, K., ... & Jayadhas, S. A. (2022). Dense convolutional neural network for detection of cancer from CT images. *BioMed Research International*, 2022.
- Sharma, D. K., Chakravarthi, D. S., Boddu, R. S. K., Madduri, A., Ayyagari, M. R., & Khaja Mohiddin, M. (2022, June). Effectiveness of machine learning technology in detecting patterns of certain diseases within patient electronic healthcare records. In

- Proceedings of Second International Conference in Mechanical and Energy Technology: ICMET 2021, India (pp. 73-81). Singapore: Springer Nature Singapore.
- Mannepalli, K., Vinoth, K., Mohapatra, S. K., Rahul, R., Gangodkar, D. P., Madduri, A., ... & Mohanavel, V. (2022). Allocation of optimal energy from storage systems using solar energy. *Energy Reports*, 8, 836-846.
- Rubavathy, S. J., Kannan, N., Dhanya, D., Shinde, S. K., Soni, N. B., Madduri, A., ... & Sathyamurthy, R. (2022). Machine Learning Strategy for Solar Energy optimisation in Distributed systems. *Energy Reports*, 8, 872-881.
- Bansal, P., Ansari, M. J., Ayyagari, M. R., Kalidoss, R., Madduri, A., & Kanaoujiya, R. (2023, April). Carbon quantum dots based nanozyme as bio-sensor for enhanced detection of glutathione (U) from cancer cells. In *AIP Conference Proceedings* (Vol. 2603, No. 1). AIP Publishing.
- Kadam, P. S., Rajagopal, N. K., Yadav, A. K., Madduri, A., Ansari, M. J., & Patil, P. Y. (2023, April). Biomedical waste management during pandemics. In *AIP Conference Proceedings* (Vol. 2603, No. 1). AIP Publishing.
- Torres-Cruz, F., Nerkar Charushila, K., Chobe Santosh, S., Subasree, N., Madduri, A., & Pant, B. (2023, April). A review on future prospects on magnetic levitation for disease diagnosis. In *AIP Conference Proceedings* (Vol. 2603, No. 1). AIP Publishing.
- Sugumar, D., Dixit, C. K., Saavedra-Lopez, M. A., Hernandez, R. M., Madduri, A., & Pant, B. (2023, April). White matter microstructural integrity in recovering alcoholic population. In *AIP Conference Proceedings* (Vol. 2603, No. 1). AIP Publishing.
- Durga Bhavani, K., Ferni Ukrit, M. Design of inception with deep convolutional neural network based fall detection and classification model. *Multimed Tools Appl* (2023). <https://doi.org/10.1007/s11042-023-16476-6>
- K. Durga Bhavani, Dr. Radhika N. (2020). K-Means Clustering using Nature-Inspired Optimization Algorithms-A Comparative Survey. *International Journal of Advanced Science and Technology*, 29(6s), 2466-2472.
- K. D. Bhavani and M. F. Ukrit, "Human Fall Detection using Gaussian Mixture Model and Fall Motion Mixture Model," 2023 5th International Conference on Inventive Research in Computing Applications (ICIRCA), Coimbatore, India, 2023, pp. 1814-1818, doi: 10.1109/ICIRCA57980.2023.10220913.
- Nigam, P., Waghmode, S., Yeware, A., Nawale, L., Dagde, P., Dhudhane, A., & Sarkar, D. (2014). Aptamer functionalized multifunctional fluorescent nanotheranostic platform for pancreatic cancer. *Journal of Nanopharmaceutics and Drug Delivery*, 2(4), 280-287.
- Alegaonkar, A. P., Kumar, A., Alegaonkar, P. S., Waghmode, S. A., & Pardeshi, S. K. (2014). Exchange interaction of itinerant electron donors of tetrakis (dimethylamino) ethylene with localized electrons in graphene. *Synthesis and Reactivity in Inorganic, Metal-Organic, and Nano-Metal Chemistry*, 44(10), 1477-1482.
- MESRAR, M., LAMCHARFI, T., ECHATOU, N., ABDI, F., & AHJYAJE, F. (2019). *AJ Csian JOURNAL OF CHEMISTRY* AJ Csian JOURNAL OF CHEMISTRY. *Asian Journal of Chemistry*, 31(2), 309-316.
- Mane, V., Lalaso, M., Waghmode, S., Jadhav, K. D., Dongare, M. K., & Dagade, S. P. (2014). Nitration of benzene using mixed oxide catalysts. *IOSR J. Appl. Chem*, 7, 50-57.

- Mahind, L. H., Waghmode, S. A., Nawale, A., Mane, V. B., & Dagade, S. P. (2013). Evaluation of antimicrobial activities of zirconium (IV) complex. *J Pharm Biol Sci*, 5, 102-5.
- Vanjare, K. J., & Waghmode, S. (2020). Lipase enzyme based green chemistry detergents for cleaning industry.
- Dagade, S. P., Mane, V. B., Jape, A. A., Waghmode, S. A., Dhapte, V. V., & Mahind, L. H. (2012). Synthesis, Characterization and Antimicrobial Study of Cr (III), Mn (II), Y (III) and Zr (IV) Schiff Base Complexes. *Int. J. of Chem. Anal. Sci*, 12, 1672-1674.
- Shaikh, A., Meroliya, H., Dagade-Gadale, S., & Waghmode, S. (2021). Applications of Nanotechnology in Precision Agriculture: A review.
- Kadam, S., Patul, V., Waghmode, S., & Dagade-Gadale, S. (2021). Use of Nano pesticide in Agriculture and its Toxicity—A Review.
- Waghmode, S. A., Gupta, V. S., & Rane, S. Y. (2010). Structure-function mimicry of oxidized purple acid phosphatase-PAP ox—A new functional model.
- Ganvir, V. Y., Ganvir, H. V., & Gedam, R. S. (2022). Effect of lanthanum oxide addition on physical, electrical and dielectric properties in lithium borosilicate glasses. *Ferroelectrics*, 587(1), 127-138.
- Ganvir, H. V., Ganvir, V. Y., & Gedam, R. S. (2022). Investigation of structural and electrical properties of nickel chloride doped pyrrole aniline copolymer. *Materials Today: Proceedings*, 49, 1827-1832.
- Ganvir, V. Y., Ganvir, H. V., & Gedam, R. S. (2022). Physical and optical study of Nd<sub>2</sub>O<sub>3</sub> doped sodium borosilicate glasses. *Materials Today: Proceedings*, 51, 1201-1205.
- Ganvir, V. Y., Ganvir, H. V., & Gedam, R. S. (2019). Effect of Dy<sub>2</sub>O<sub>3</sub> on electrical conductivity, dielectric properties and physical properties in lithium borosilicate glasses. *Integrated Ferroelectrics*, 203(1), 1-11.
- Wasnik, H. R., Kelkar, D. S., & Ganvir, V. Y. (2015). Yield analysis of copolymers: effect of temperature, feed ratio and initiator concentration on the copolymerization. *Journal of Polymer Engineering*, 35(2), 99-103.