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The role of cultural moderation on knowledge acquisition through AMO HR practice at oil and gas company

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Abstract

The oil and gas company is a crucial sector due to its significant contribution to the global economy, and its success is heavily dependent on the effective management of human resources. This industry faces unique challenges caused by resource curses, which can negatively impact firm performance, especially in Indonesian oil and gas companies. The strategic human resource management interventions, such as the Ability, Motivation, Opportunity (AMO) framework with HR practices implementation, can mitigate these challenges. Thus, this study aimed to investigate the role of cultural moderation on the relationship between AMO HR practices and knowledge acquisition within the context of the Indonesian state-owned oil and gas company. By using descriptive and explanatory surveys, we obtained data from 348 respondents taken from seven affiliated oil and gas companies such as Pertamina Hulu Rokan, Pertamina Offshore North West Java, Pertamina Offshore Southeast Sumatera, Pertamina Gas Negara, Pertamina Hulu Mahakam, Pertamina Hulu Kalimantan Timur, and Pertamina Hulu Sanga-Sanga. By using correlation analysis, the results show a range of 0.58 to 0.86, respectively. Here, PT Pertamina Hulu Mahakam has the best performance as a benchmark for others to enhance their HR practices in the near future.

Keywords: Ability, HR practices, Motivation, Oil and gas company, Opportunity (AMO).

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1. Introduction

The oil and gas industry is a cornerstone of Indonesia's economy, serving as one of the largest contributors to national revenue. State-owned enterprises, particularly Pertamina and its subsidiaries, play a leading role in this sector, overseeing both upstream and downstream operations. In the face of increasing complexity in the global energy market, organizations in this industry are challenged to maintain their competitive edge through effective knowledge acquisition. This process

encompassing the identification, assimilation, and application of knowledge is essential for fostering organizational learning, driving innovation, and ensuring long-term success.

In this context, Human Resource (HR) practices emerge as critical enablers of knowledge acquisition. The AMO (Ability, Motivation, Opportunity) framework offers a valuable perspective for understanding how HR practices can enhance employee performance and organizational outcomes. By addressing the three dimensions of ability (skills and expertise), motivation (incentives and engagement), and opportunity (a supportive work environment and resources), organizations can create conditions that encourage employees to acquire and share knowledge effectively.

However, the effectiveness of HR practices in promoting knowledge acquisition is often influenced by the cultural context in which they are implemented. Cultural differences both at the national and organizational levels can significantly shape how employees perceive and respond to HR initiatives. For example, cultural dimensions such as collectivism, power distance, and uncertainty avoidance may moderate the relationship between AMO-based HR practices and knowledge acquisition.

This study seeks to examine the moderating role of culture in the relationship between AMO HR practices and knowledge acquisition within the Indonesian oil and gas industry. Drawing on data from 335 employees across various Pertamina subsidiaries including Pertamina Hulu Rokan, Pertamina Offshore North West Java, Pertamina Offshore Southeast Sumatera, Pertamina Gas Negara, Pertamina Hulu Mahakam, Pertamina Hulu Kalimantan Timur, and Pertamina Hulu Sanga-Sanga this research aims to provide insights into how HR practices can be tailored to align with cultural nuances. By doing so, it seeks to enhance knowledge acquisition and, ultimately, improve organizational performance.

2. Brief Overview of Oil and Gas Production and Financial Condition

2.1. Current Status of Oil and Gas in Indonesia

The oil and gas (MIGAS) industry are inherently characterized by uncertainty and significant volatility, both of which stem from a variety of interconnected factors. This volatility is largely driven by fluctuations in consumer demand, price changes, geopolitical dynamics, and unexpected company-level risks. These variations create an environment where long-term stability is often elusive, and organizations must continuously adapt to external pressures. For instance, geopolitical tensions frequently disrupt the global supply chain, exerting an immediate and far-reaching impact on both the availability of oil and gas and their corresponding price levels in the international market [1]. Such geopolitical disruptions amplify the complexity of operating in the oil and gas industry, necessitating swift and strategic responses from industry stakeholders.

Historically, global oil prices have demonstrated significant swings, reflecting the volatile nature of this sector. Between 2009 and 2011, for example, global oil prices experienced a consistent upward trend, eventually peaking at USD 113.39 per barrel in April 2011. This period of rising prices was influenced by a combination of factors, including increasing global demand and heightened geopolitical tensions in key oil-producing regions. However, this upward trend was reversed during the period from 2014 to 2016, when oil prices experienced a sharp decline. By January 2016, prices had dropped to a low of USD 33.54 per barrel, representing a drastic shift in market conditions (see Figure 1). This steep decline was attributed to oversupply in the market, driven by the rise of shale oil production, coupled with a slowdown in global economic growth. These historical fluctuations underscore the inherent challenges faced by the MIGAS industry, highlighting the need for robust risk management strategies and adaptive measures to navigate an unpredictable and volatile global energy landscape.

Figure 1.
Historical data of Petroleum price in 2009 to 2018.
Source: Shelhamer, et al. [2]

The challenges posed by climate change and rapid technological advancements worldwide have exerted significant pressure on sustainability, driving the global energy sector, including the oil and gas (MIGAS) industry toward substantial transformation. These pressures have fostered the growth of renewable and alternative energy initiatives, which are not only reshaping the global energy landscape but are also steering the MIGAS sector to adapt to a more sustainable framework [3].

As countries strive to transition toward cleaner energy sources, the traditional oil and gas industry faces mounting challenges to remain competitive and relevant in this evolving environment.

These global shifts have direct repercussions for Indonesia's MIGAS sector. According to the Special Task Force for Upstream Oil and Gas Business Activities (SKK Migas), the country's total oil and gas production, as well as its reserves, have experienced a consistent downward trend over the past decade. This decline has raised concerns about the long-term sustainability of Indonesia's oil and gas industry in the face of intensifying global competition and diminishing resources. Furthermore, as Patria and Adrison [4] point out, one of the critical challenges for the industry is the prolonged period of low global crude oil prices. These low prices have created a situation where exploration and production costs frequently exceed the potential earnings, making it economically viable for companies to invest in new projects or maintain existing operations (see Table 1).

This combination of declining production, economic constraints, and the global push for renewable energy underscores the urgent need for Indonesia's MIGAS sector to implement innovative strategies. By embracing emerging technologies and prioritizing sustainable practices, the industry can navigate these challenges and position itself for long-term resilience in an increasingly competitive and environmentally conscious global energy market.

Table 1.
Indonesian Oil and Gas Production and Reserves in 2010 to 2018 (SKK Migas, 2018).

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Oil & Gas Production									
Oil (MBPOD)	1.003	952	918	825	789	786	831	804	772
Gas (MMSCFD)	8.857	8.415	7.110	6.826	8.218	8.102	7.939	7.621	7.760
Potential Oil and Gas Reserves									
Oil (MMSTB)	7.760	7.730	7.410	7.550	7.370	7.305	7.251	7.535	7.512
Gas (TSCF)	157.1	152.9	150.7	150.4	149.3	151.3	144.8	143.7	135.6

The retention of reduced oil and gas production and reserves over the past decade has become a major challenge for Indonesia's trade balance. As reported by Yuriy [5], Indonesia's fuel oil (BBM) consumption in the last decade was three times higher than its crude oil production. This situation highlights Indonesia's heavy reliance on oil imports to meet domestic fuel demands. Moreover, this dependency on imported fuel oil makes Indonesia's economic performance highly susceptible to fluctuations in global crude oil prices. According to Sarala et al. [6], even if the forecast declining trend continues, Indonesia could face a fuel shortage by 2025 (see Table 2).

Table 2.
Indonesian Petroleum Consumption and Production in 2010 to 2018 (British Petroleum, 2019).

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Consumption	151.1	164.6	173.4	178.2	167.2	165.7	170.2	176.9	151.1
Production	48.6	46.3	44.6	42.7	41.0	40.6	42.8	41.0	48.6

Note: Nb: Units of consumption and production in million tons.

2.2. Financial Deficit Oil and Gas Company

The government has undertaken various efforts to address the significant gap between oil and gas (MIGAS) consumption and production. One key measure has been reclaiming oil and gas blocks previously controlled by foreign companies. In 2008, foreign oil and gas firms dominated 117 out of 137 operational blocks across Indonesia, accounting for 85.4% of the total. By 2020, this share had declined to 53.66%, with only 44 out of 82 blocks still under foreign ownership [7]. A significant portion of these oil and gas concessions is now held by Pertamina [8]. Additionally, in 2023, Pertamina contributed 68% of Indonesia's total oil and gas production through its subsidiary, PT Pertamina Hulu Energi, which produced 566,000 barrels of oil per day (BOPD) [9].

State-owned enterprises (BUMN) play a crucial role in ensuring the sustainability of Indonesia's oil and gas sector. As the leading state-owned company in this industry, Pertamina has been meeting the country's oil and gas needs for over six decades. Since the liberalization of the sector in 2001, Pertamina and its subsidiaries have dominated the downstream market. Although Pertamina no longer holds a retail monopoly on petroleum products following the issuance of retail licenses to Shell and Petronas in July 2004, it remains the dominant player and market leader due to its extensive distribution network.[8].

This market dominance has motivated research efforts to focus on PT Pertamina (Persero). Across industries, companies have widely adopted mergers and acquisitions (M&A) as a corporate strategy to enhance competitiveness, achieve sustainable growth, and expand market reach. Successful M&A initiatives strengthen a company's competitive position and ensure long-term business continuity [10]. According to Brigham [11], M&A enables companies to create synergies and diversify operations, ultimately increasing market power and securing competitive advantages. In the oil and gas sector, M&A activities are heavily influenced by technological advancements, globalization, deregulation, industry dynamics, economic pressures, and market conditions [12]. Key factors driving M&A decisions include production levels, reserves, pricing, valuation, and overall performance [13, 14].

Pertamina has adopted an M&A strategy to strengthen Indonesia's oil and gas sector. Over the past five years, the company has acquired numerous foreign oil and gas firms operating in Indonesia. In 2018, it acquired five major companies: China National Offshore Oil Corporation (CNOOC), Total Oil Indonesia, PT Chevron Indonesia, Virginia Indonesia Company, LLC, and Perusahaan Gas Negara (PGN). Previously, in 2009, it had acquired Pertamina Offshore North West Java (ONWJ) from BP Indonesia. More recently, in 2021, it took over Pertamina Hulu Rokan (PHR) from PT Chevron Indonesia. However, despite these acquisitions, Pertamina continues to face performance challenges (see Table 3).

Table 3.
Operational and Financial Performance of Oil and Gas Industry in Indonesia.

Panel A. Performance of Oil and Gas Industry in Indonesia						
Year	**Oil**			**Gas**		
	Target	**Realization**	**Percentage**	**Target**	**Realization**	**Percentage**
	bopd	bopd	%	MMScfd	MMScfd	%
2019	775000	746000	96.3%	7000	5934	84.8%
2020	705000	70700	100.3%	5556	5461	98.3%
Panel B. Operational Performance						
	2016	2017	2018	2019	2020	2021
Oil Production (bpod)	312000	342000	393000	413680	408000	445000
Gas Production (MMscfd)	3059	2035	3059	2822.46	2635	2615
Panel C. Financial Performance						
	2016	2017	2018	2019	2020	2021
Revenue (In million USD)	39.812	46.176	58.111	54.793	41.469	57.509
Net Income (million USD)	5.614	3.873	3.907	4.004	1.622	1.839
Total Assets (million USD)	53.976	57.583	64.873	67.299	69.144	78.051
Return on Equity (ROE)	22.2%	14.3%	13.2%	12.8%	5.2%	4.6%
Return on Investment (ROI)	17.4%	13.6%	15.6%	13.0%	11.3%	11.0%
Debt ratio	53.2%	53.0%	54.2%	53.5%	54.8%	48.5%

Table 3 shows operational and financial performance by year. Panel B shows operational performance measured using the level of achievement of daily production targets. This data shows that in 2020, there was an increase in operational performance compared to 2019. However, the company's financial performance showed the opposite trend. Panel C shows Pertamina's financial performance by year. The data shows that although revenue has grown, the profitability ratio has shown a downward trend in the last five years due to a decrease in the Company's net income.

2.3. Work Performance and Human Resources at Oil and Gas Company

In this study, HR has a significant role in Pertamina's M&A performance. Especially the various knowledge they bring from their previous companies. Thus, Pertamina's M&A performance is identical to the KPI of the acquired company and the achievement of M&A objectives. Meanwhile, the management practices and strategies developed by Pertamina have a significant impact on the success or achievement of M&A objectives. This is in line with the statements of Gregoriou and Renneboog [15] and Hsu et al. [13] that M&A in the oil and gas sector aims to achieve strategic objectives and efficiency gains by achieving operational and financial synergies.

The resource-based view (RBV) is one of the dominant perspectives in strategic management [16]. The core of RBV is that the resources or collection of resources owned by a company are the basis for achieving competitive advantage [17-21]. According to the RBV argument, resource ownership is the key to corporate growth [22]. Therefore, M&A is a corporate strategy to collect resources so that it can achieve a sustainable competitive advantage. Integrated into RBV, the knowledge-based view (KBV) emphasizes the strategic role of knowledge in organizations that must be processed in order to achieve competitive advantage [23]. Learning how to successfully acquire and build capabilities to improve M&A performance has become the center of recent research in corporate strategy [24]. In this regard, this study places RBV and KBV as the basis for examining the M&A performance of SOEs in the Oil and Gas sector. M&A performance has a broad meaning and very diverse measurements. Scholars have been trying to explain M&A performance since the 1960s. Some argue that each M&A is unique, so that comparisons of findings across typologies and situations are meaningless [25]. Others have argued that unidentified variables would better explain variance in M&A performance [26]. Others have observed that M&A scholars have shown little concern for the construct validity of M&A performance, which may hinder confidence in the generalizability of research findings [27]. Still others have suggested that the measurement of the performance construct needs further attention and have offered suggestions for improving it [28]. The reason for the diversity in how to measure performance is that performance does not have a universal definition and construct and depends on the questions that researchers want to answer [29]. This study attempts to explain M&A performance from the perspective of employees. To explain this, performance is measured using three dimensions that are considered capable of describing M&A performance, namely employee performance, post-acquisition integration performance, and subjective assessment. Following the suggestions obtained through FGDs, employee performance measurement may be biased if researchers follow performance standards that exist in the literature. Therefore, employee performance is approached using Pertamina's KPI as the acquirer.

Furthermore, post-acquisition integration performance plays a crucial role in M&A [30]. While human integration (i.e., the creation of shared identity and satisfaction among employees of both organizations) tends to be detrimental, task integration (i.e., the transfer, sharing of resources, and capabilities) is beneficial to M&A outcomes [31, 32]. In addition, subjective performance, such as the achievement of M&A goals, needs to be considered [13, 15, 33]. In this regard, this study attempts to complement subjective performance by considering the achievement of the company's RKAP and long-term plan (RJPP). Thus, it is expected that employee performance, post-acquisition integration performance, and subjective assessments can well explain M&A performance in this study. Previous studies have shown the importance of knowledge acquisition (AP) in M&A activities. KBV theory illustrates the value of the knowledge management process for firms and clearly implies the need for the ability to both acquire and apply information [34]. Acquisition capabilities provide access to valuable new resources, while application capabilities enable firms to transform those resources into competitive advantages. To build a sustainable competitive advantage, firms must build a knowledge repository through the acquisition process and integrate the acquired specialized knowledge with existing knowledge to generate value for customers Arsawan et al. [35]. Hung and Chou [36] showed that AP plays an important role in improving firm performance. In practice, AP has a significant effect on firm performance and generates significant competitive effects [37]. Empirical tests support this view that AP has a positive and significant effect on post-M&A performance [38, 39]. However, several studies show no significant relationship between AP and performance [40, 41].

3. Theoretical Framework

Various theories in management literature explore the relationships of Ability, Motivation, and Opportunity (AMO) on work performance.

3.1. Knowledge Based Theory

Knowledge-Based View (KBV) places knowledge as a key strategic resource in the creation of value and competitive advantage of a company. As an extension of the Resource-Based View (RBV), KBV highlights how companies can manage, integrate, and leverage knowledge to generate innovation and sustainable advantage. In the context of mergers and acquisitions (M&A), KBV provides a framework for understanding the challenges and opportunities associated with the transfer, integration, and application of knowledge during the post-acquisition phase [42]. KBV views the company as a knowledge-processing institution that aims to create value through the management of explicit and tacit knowledge [42-44]. In the M&A process, the acquiring company often expects the transfer of technical, operational, or managerial knowledge from the acquired company to strengthen its capabilities. This knowledge can be explicit, such as technical documents or standard operating procedures, or tacit, such as individual expertise or specific cultural practices that are difficult to articulate. In the oil and gas (O&G) sector, the acquired company may have tacit knowledge related to exploration techniques that are specific to certain geological conditions. This knowledge transfer requires the active involvement of employees from both parties to ensure that the knowledge can be applied under new operational conditions. In addition, technological infrastructure, such as digital-based knowledge management systems, can accelerate the process of transferring explicit knowledge by providing quick access to relevant information.

KBV also highlights the challenges that often arise in knowledge transfer during post-M&A integration. One of them is the risk of knowledge loss, which occurs when key employees of the acquired company choose to leave due to cultural incompatibility or lack of career opportunities. Therefore, it is important for the acquiring company to adopt a talent management strategy that focuses on retaining key employees and creating a supportive work environment [45, 46].

In addition, the modularity and "loose coupling" properties suggested by KBV Zahra et al. [47] can be applied to reduce over-dependence on a single source of knowledge. For example, companies can create autonomous units responsible for the integration of specific knowledge, thus enabling innovation and adaptation without disrupting the entire organization [47-50].

In the O&G sector, knowledge transfer during post-M&A integration can play a significant role in improving operational efficiency and expanding technical capabilities. For example, an acquiring company can leverage the acquired company's technical knowledge to improve drilling technology or optimize production processes. However, this success requires careful planning, including an early assessment of knowledge compatibility and the development of a supportive integration strategy [34].

3.2. Ability, Motivation, Dan Opportunity (AMO) Theory

Ability, Motivation, and Opportunity (AMO) emphasizes the importance of a combination of employee abilities, strong motivation, and adequate opportunities to drive optimal performance in an organization. In the context of mergers and acquisitions (M&A) in the oil and gas sector, this framework is relevant to understanding how companies can improve the effectiveness of post-acquisition integration by strategically leveraging human resources [51].

Ability refers to the skills, knowledge, and competencies required by employees to perform their jobs effectively [52]. In the oil and gas sector, technical and operational capabilities play a critical role, especially when the acquiring company seeks to leverage the unique expertise of the acquired company. For example, the acquired company may have expertise in horizontal drilling technology or specific exploration methods for certain geological conditions. The transfer of these capabilities becomes a key element to improve operational efficiency post-acquisition.

Motivation refers to the internal and external drives that encourage employees to perform optimally. In the context of M&A, employee motivation is often influenced by their perception of career opportunities, job security, and the rewards

provided by the company. Studies show that acquisitions can create uncertainty and lower employee morale, especially if they feel that organizational values or compensation structures have changed drastically [53].

To maintain employee motivation, the acquiring company can implement a performance-based reward system that reflects the contributions of employees from both organizations. In addition, it is important to ensure that transparent communication is carried out during the integration process to reduce uncertainty and create a sense of ownership. For example, recognizing the unique contributions of employees from the acquired company can increase their motivation to support the success of the integration.

Opportunity refers to the organizational environment and structure that allows employees to apply their abilities and utilize their motivation. In the context of post-M&A integration, opportunities often relate to job design, job autonomy, and employee involvement in decision making [49]. In the post-M&A integration process, Pertamina's organizational structure is often redesigned to provide greater autonomy to cross-functional teams. For example, a team of employees from both companies is tasked with exploring innovative solutions in production operations and occupational safety. In the context of M&A in the O&G sector, the AMO framework provides a systematic approach to managing employees during the integration phase. The capability dimension ensures that employees have the necessary competencies to adapt to the new operating system. The motivation dimension ensures that employees remain eager to contribute to the success of the organization. Meanwhile, the opportunity dimension creates an environment that supports active employee engagement.

4. Empirical Review

Several empirical investigations have been conducted to analyze Ability, Motivation, and Opportunity (AMO) in relation to work performance. The descriptive survey method is a technique used to examine the status of a group of people, an object, a set of conditions, a system of thought, or a class of events in the present. Meanwhile, the explanatory survey method is a technique that seeks to clarify the relationship between variables in the study [54].

Population is a collection of individuals or research objects that have predetermined quality characteristics. Based on these characteristics, the population can be understood as a group of individuals or objects of observation that have at least one similarity [55]. The population in this study was 2,048, namely 1,298 at the Assistant Manager / Head of / Superintendent / Section Head level, 511 at the Manager / Deputy level, and 239 at the Sr. Manager / Chief level. The sample is part of the population, while the sample survey is a procedure in which only a portion of the population is taken to be used as a data source. Determination of the number of samples was carried out using the Slovin Formula with a precision level of 5% / 0.05 [56]. The types of data in this study consist of qualitative data and quantitative data sourced from primary data sources. Primary data is the main data needed in the discussion of this study and is obtained directly through the distribution of questionnaires to Assistant Managers / Heads of / Superintendents / Section Heads, Managers / Deputies, Senior Managers / Chiefs, hereinafter referred to as respondents.

5. Data and Methodology

The correspondent of this study consisted of 2,048 individuals, categorized as follows: 1,298 at the level of Assistant Manager/Head of/Superintendent/Section Head, 511 at the Manager/Deputy level, and 239 at the Senior Manager/Chief level. A sample is a subset of the population, and a sample survey is a procedure in which only a portion of the population is selected to serve as the data source. The sample size was determined using Slovin's formula with a precision level of 5% (0.05), Bessell et al. [56], as follows.

$$n = N/(1+N\ 〖(d)〗\ ^2) \quad (1)$$

The type of criteria for selecting the sample included, firstly, employees who had joined the company before it was acquired by PT Pertamina (Persero). This criterion was chosen to ensure that the perceptions analyzed by the researcher accurately reflect the actual conditions. Secondly, employees holding a minimum position of Assistant Manager, Head of, Superintendent, or Section Head. This criterion was selected based on the assumption that individuals in these positions have a sufficient understanding of the strategies and policies implemented by the company after the acquisition. To collect data in the field, several data collection techniques were employed, including:

Questionnaires: This method aimed to gather data related to the research problem by distributing questionnaires. This technique involves using a list of questions or statements related to the research variables, which respondents (the sample) are required to answer. Specifically, for measuring the AL variable, respondents (employees and management of the acquired company) were asked to evaluate the leadership style implemented by the top management of the parent company, PT Pertamina (Persero).

Literature Review: Information was collected by reading, analyzing, and reviewing various sources of literature, including textbooks, scientific journals, magazines, and previous studies relevant to the research topic.

Focus Group Discussion (FGD): FGDs were conducted with several key personnel from the company acquired by PT Pertamina (Persero). The purpose of the FGDs was to gain deeper insights into the research phenomenon, specifically the performance of Pertamina's mergers and acquisitions (M&A). Additionally, the FGDs aimed to enhance the researcher's understanding of the integration and synergy processes within the acquired company. These discussions were conducted prior to the survey.

Semi-Structured Interviews: Interviews were conducted with the leadership of the acquiring company, PT Pertamina (Persero).

5.1. Correspondent Assessment based on Different Position in Oil and Gas Company

Based on the respondent characteristics by position or role, there is a diverse distribution that reflects the hierarchy within the organizational structure. Respondents holding positions such as General Manager, Senior Vice President (Sr. VP), Vice President (VP), Senior Expert, or equivalent represent the smallest group, comprising 36 individuals or approximately 10% of the total respondents. This group reflects those occupying strategic roles at the highest level of decision-making. Furthermore, respondents in Senior Manager or Manager positions total 93 individuals, accounting for about 27%. This group represents the middle management level, responsible for managing work units and implementing operational policies derived from strategic directives. The largest group consists of respondents in roles such as Assistant Manager, Superintendent, Senior Analyst, Senior Engineer, Senior Officer, Coordinator, or equivalent, with 159 individuals or 46%. These positions represent significant operational roles, where individuals are typically responsible for technical execution, inter-unit coordination, and supporting management in achieving organizational goals. Finally, 60 individuals, or 17% of the respondents, hold positions such as Senior Supervisor, Analyst, Engineer, Officer, or equivalent. These roles are at a more direct operational level, actively involved in daily technical activities, supporting workflows, and ensuring smooth operational processes in the field (see Figure 2).

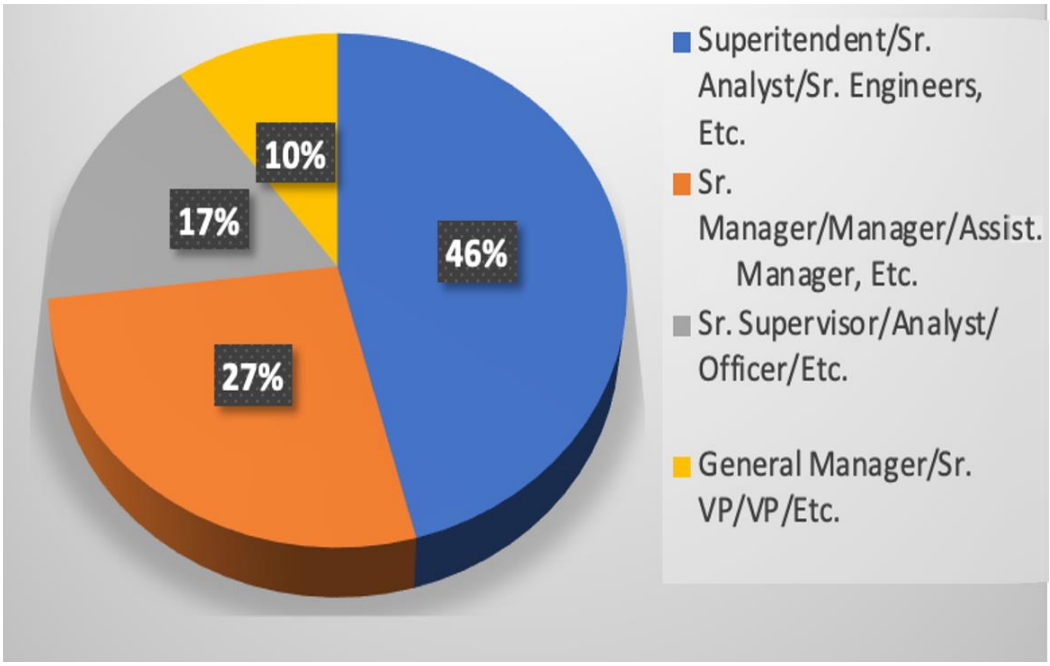

Figure 2.
Correspondent assessment based on Job position.

This distribution illustrates that the majority of respondents are from operational to early managerial levels, with a smaller proportion occupying strategic positions at the top. This provides a representative profile of an organization with a comprehensive and well-structured hierarchy.

Furthermore, the data survey was processed by using descriptive statistics methods. Here, the collection and presentation of data to provide useful information [57]. Descriptive statistics are used to describe or provide an overview of the object being studied through data from a sample or population [58]. In this study, descriptive analysis was employed to illustrate the characteristics of the respondents and the research object. Descriptive statistical analysis includes measures such as the mean, median, maximum, minimum, and standard deviation.

Additionally, descriptive analysis can also be used to explain respondents' responses to each research variable. The descriptive analysis of respondents' responses was conducted by calculating the mean value of their responses to each statement and overall. To categorize the average responses of the respondents, a class interval was determined using the following formula [59].

$$\text{Class Interval} = (\text{Highest Value} - \text{Lowest Value}) / \text{Number of Classes} \quad (2)$$

The class interval values were then used to classify respondents' responses into five categories: very low, low, moderate, high, and very high. Furthermore, this survey data are analyzed using the descriptive analysis method. Here, the data will systematically, factually, and accurately describe or illustrate facts, characteristics, and relationships between the phenomena being investigated [54]. To determine each respondent's answers to the statement items for each research variable, it is necessary to categorize the responses (see Table 4).

Table 4.
Descriptive analysis method.

Score Response	Category	Description
1	Very Poor (VP)/Strongly Disagree (SD)/Very Low (VL)	Very poor or very low agreement
2	Poor (P)/Disagree (D)/Low (L)	Poor or low agreement
3	Fair (F)/Somewhat Disagree (SD)/Moderate (M)	Air or moderate agreement.
4	Good (G)/Agree (A)/High (H)	Good or high agreement.
5	Very Good (VG)/Strongly Agree (SA)/Very High (VH)	Very good or very high agreement.

Based on the results obtained, the holding positions such as General Manager, Senior Vice President (Sr. VP), Vice President (VP), Senior Expert, or equivalent represent the smallest group, totaling 36 individuals or approximately 10% of the total respondents. These positions represent a group with strategic roles at the highest level of decision-making. Here, respondents in positions such as Senior Manager or Manager account for 93 individuals, or around 27%. This group belongs to the middle-management level, responsible for managing work units and implementing operational policies derived from strategic directives. The largest group consists of respondents in roles such as Assistant Manager, Superintendent, Senior Analyst, Senior Engineer, Senior Officer, Coordinator, or equivalent, totaling 159 individuals or 46%. These positions signify significant operational roles, where individuals are typically responsible for technical execution, inter-unit coordination, and supporting management in achieving organizational goals. Lastly, 60 individuals, or 17% of the respondents, hold positions such as Senior Supervisor, Analyst, Engineer, Officer, or equivalent. These roles are at a more hands-on operational level, directly involved in daily technical activities, supporting workflows, and ensuring smooth operational processes in the field. This distribution shows that the majority of respondents are from operational to early managerial levels, with a smaller proportion occupying strategic positions at the top. This provides a representative overview of an organization with a complete and well-structured hierarchy.

5.2. Survey Assessment Based on Education Background

Based on respondent surveys, the Master's degree dominates with 184 individuals or approximately 52.87% of the total respondents. This indicates that most respondents have completed postgraduate education, reflecting a high level of competence and expertise in their respective fields. Furthermore, respondents with a Bachelor's degree make up the second-largest group, with 135 individuals or 38.79%. This group also contributes significantly to the total respondents, demonstrating that a Bachelor's degree is the dominant minimum standard in the organizational or professional environment being analyzed. While the respondents with a Diploma-level education account for 26 individuals or 7.47%. Although their percentage is smaller compared to the Bachelor's and Master's groups, their presence remains important, particularly in technical or operational roles within the organizational structure. In addition, the respondents with a Doctoral degree represent the smallest group, with only 3 individuals or 0.86%. Despite their small number, this group typically occupies positions requiring highly specialized expertise or strategic roles within the organization. This distribution shows that the majority of respondents have a high level of education, reflecting the competency standards required in the organization or profession being studied. It also indicates that the organization emphasizes the development of human resources through quality formal education (see Table 5).

Table 5.
Survey results based on educational background.

Respondent Data	Education Background	Percentage (%)
3	Doctoral degree	0.86
184	Master degree	52.87
135	Bachelor degree	38.79
26	Diploma	7.47

5.3. Survey Assessment based on Oil and Gas Company

Based on the respondent survey, the majority of respondents are from PT Pertamina Hulu Mahakam, with 102 individuals or 29.31% of the total respondents. This indicates that the company is the primary contributor to this study, reflecting its strategic role in Indonesia's upstream oil and gas sector. The second group of respondents is from PT Pertamina Hulu Rokan, with 75 individuals or 21.55%. This company also makes a significant contribution to the respondent population, highlighting its position as one of the key players in managing major oil and gas blocks in Indonesia. PT Perusahaan Gas Negara has 62 respondents or 17.82%. As one of the critical companies in gas distribution and infrastructure management, the presence of respondents from this company enriches the analysis of downstream activities within the oil and gas sector. Respondents from PT Pertamina Hulu Energi Offshore Southeast Sumatra number 41 individuals or 11.78%, followed by PT Pertamina Hulu Energi Offshore North West Java with 33 individuals or 9.48%. Both companies represent the important contributions of the offshore sector in exploration and production activities within the oil and gas industry. Furthermore, there are smaller respondent groups from PT Pertamina Hulu Kalimantan Timur with 20 individuals or 5.75% and PT Pertamina Hulu Sanga with 15 individuals or 4.31%. While smaller in size, their inclusion remains relevant to provide a comprehensive overview of the involvement of various companies in the oil and gas sector. Here, the distribution illustrates that the study involves respondents from a range of strategic entities within the oil and gas sector, from major companies managing large blocks,

such as PT Pertamina Hulu Mahakam, to other companies playing significant roles in supporting national energy security. This combination reflects a broad and diverse representation of Indonesia's oil and gas ecosystem (see Table 6).

Table 6.
Survey result based on Affiliation Oil & Gas Company.

Respondent Data	Affiliation Oil & Gas Company	Percentage (%)
102	PT Pertamina Hulu Mahakam	29.31
75	PT Pertamina Hulu Rokan	21.55%
62	PT Perusahaan Gas Negara	17.82
41	PT Pertamina Hulu Energi Offshore Southeast Sumatra	11.78
33	PT Pertamina Hulu Energi Offshore North West Java	9.48
20	PT Pertamina Hulu Kalimantan Timur	5.75
15	PT Pertamina Hulu Sanga -Sanga	4.31

5.4. Correlation Analysis between AMO HR Practices and Survey Results on Affiliation with Oil and Gas Companies

After all parameter data were obtained, the correlation between AMO HR practices (Ability, Motivation, and Opportunity) and survey results from affiliated oil and gas companies was analyzed using a correlation analysis method. The scatter plots in the figure above visually represent the relationship between specific parameters of AMO HR practices and survey results, with regression lines showing the direction and strength of the correlations. The analysis reveals a positive relationship between AMO HR practices and survey outcomes across all parameters. This means that as AMO HR practices are effectively implemented, survey results covering aspects like employee satisfaction, engagement, and performance tend to improve. The upward-sloping regression lines in all plots signify this positive trend. The strength of the correlation varies across the parameters, as seen in the scatter plots. In some cases, the data points are tightly clustered around the regression line, indicating a stronger correlation. Such clusters suggest that certain AMO HR practices have a more direct and significant impact on the survey results. On the other hand, some parameters show a more dispersed pattern of data points, reflecting a weaker but still positive correlation, suggesting that the effect of those practices may be more indirect or less pronounced. This correlation analysis is particularly important for the oil and gas sector, as it highlights the strategic value of AMO HR practices in driving favorable outcomes. Specifically, the Ability (A) parameter ensures employees have the skills and knowledge needed for their roles, Motivation (M) fosters engagement and dedication, and Opportunity (O) creates an enabling environment for performance. Together, these practices enhance workforce productivity, satisfaction, and alignment with organizational goals. Overall, the analysis confirms that AMO HR practices are integral to achieving positive organizational outcomes in affiliated oil and gas companies, emphasizing the need for robust HR strategies to maximize their impact (see Figure 3).

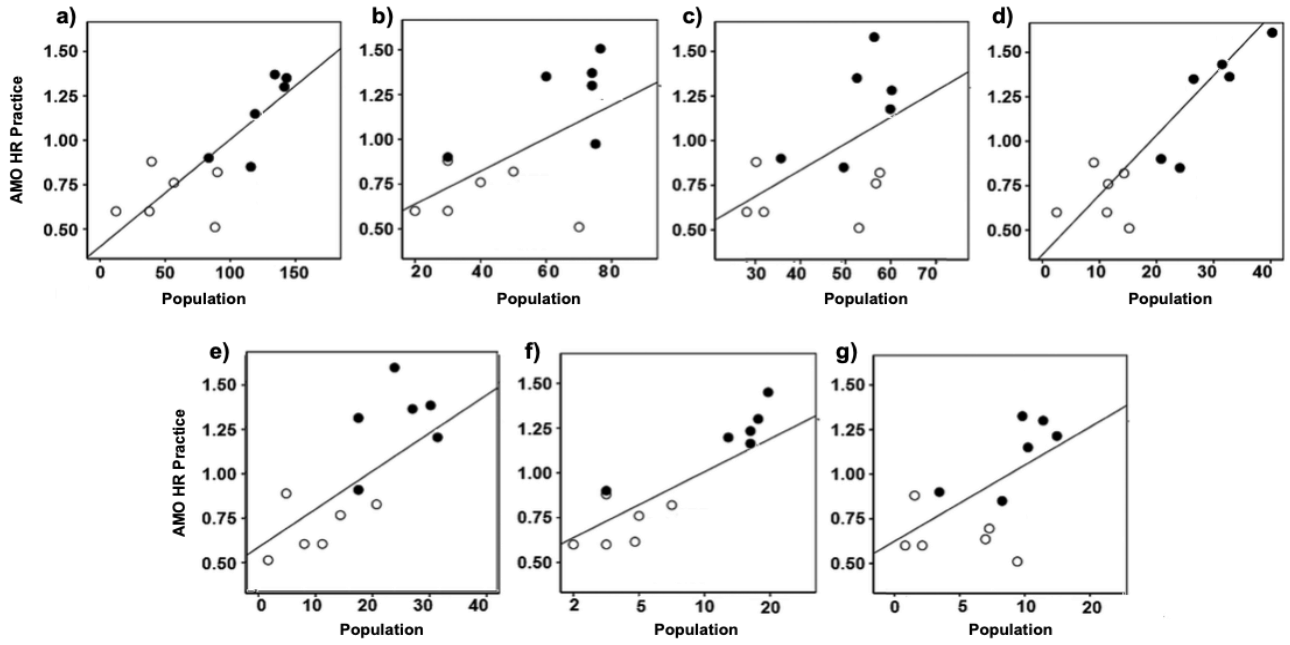

Figure 3.
Correlation Analysis between AMO HR Practice and survey result on Affiliation Oil & Gas Company especially for (a) Hulu Mahakam (b) Hulu Rokan (c) Perusahaan Gas Negara (d) Hulu Energi Offshore Southeast Sumatra (e) Hulu Energi Offshore North West Java (f) Hulu Kalimantan Timur (g) Hulu Sanga.

In addition, the provided scatter plots visually represent the correlation analysis between AMO HR practices and survey results for employees in various affiliated oil and gas companies. Each plot corresponds to a specific company with the regression line indicating the strength and direction of the correlation. The R-squared (R^2) values quantify how well the data

points fit the regression line, reflecting the strength of the relationship. The details of the calculation of the R-squared value are shown in Table 7, as follows:

Table 7.
The calculation of R-sq between AMO HR Practice and survey result on Affiliation Oil & Gas Company.

Affiliation Oil & Gas Company	R-Sq Value	Description
PT Pertamina Hulu Mahakam	0.86	HR practices in this company are highly effective in driving positive employee outcomes
PT Pertamina Hulu Rokan	0.63	A weaker but still significant influence of AMO HR practices on survey results
PT Perusahaan Gas Negara	0.59	AMO HR practices have a positive impact, other factors may also contribute to survey outcomes
PT Pertamina Hulu Energi Offshore Southeast Sumatra	0.77	AMO HR practices significantly influence survey results in this company
PT Pertamina Hulu Energi Offshore North West Java	0.58	A weaker relationship between AMO HR practices and survey results
PT Pertamina Hulu Kalimantan Timur	0.64	Moderately clustered, suggesting a positive but not very strong relationship
PT Pertamina Hulu Sanga-Sanga	0.61	Positive but less pronounced relationship

The correlation analysis shows varying strengths of relationships between AMO HR practices and survey results across the companies. PT Pertamina Hulu Mahakam demonstrates the strongest correlation, suggesting highly effective HR practices, while other companies show moderate correlations, indicating room for improvement. These findings highlight the importance of tailoring HR practices to maximize their impact on employee outcomes.

6. Conclusion

The study titled "The Role of Cultural Moderation on Knowledge Acquisition Through AMO HR Practice at Oil and Gas Companies" successfully analyzed data from seven affiliated oil and gas companies in Indonesia, involving a total of 348 respondents. The primary focus was to explore the correlation between AMO (Ability, Motivation, Opportunity) HR practices and survey results, revealing the effectiveness of these practices in driving employee outcomes across the companies. The correlation analysis produced varying R-squared (R^2) values, which quantify the strength of the relationship between AMO HR practices and survey results for each company. The overall analysis, supported by scatter plots and regression lines, confirms that AMO HR practices positively influence survey results, with varying levels of effectiveness across companies. These findings emphasize the critical role of tailoring and optimizing HR strategies to maximize employee outcomes and organizational success, with variation R-sq 0.58 to 0.86, respectively. PT Pertamina Hulu Mahakam's performance serves as a benchmark for others to enhance their HR practices.

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