

# Specialization and Acting Agility: The Moderating Role of Work Meaningfulness in Nigeria's Major Oil and Gas Companies

Dr. Leesi Gabriel Gborogbosi<sup>1</sup>, Prof. Benedict Chima Onuoha<sup>2</sup>, Prof. Omoankhanlen Joseph Akhigbe<sup>3</sup>

<sup>1</sup>Department of Management, University of Port Harcourt, Nigeria

[leesi.gborogbosi@gmail.com](mailto:leesi.gborogbosi@gmail.com)

<sup>2</sup>Department of Management, University of Port Harcourt, Nigeria

<sup>3</sup>Department of Management, University of Port Harcourt, Nigeria

**Abstract:** This paper will discuss the effect of specialization on acting agility and the moderating effect of meaningfulness of work on the relationship between the two in the oil and gas companies of Nigeria. Although the industry generates high economic values, the firms experience dynamic challenges, which demand quick and efficient response in the operations. The issue dealt with is the ongoing difference between the technical specialization and the capacity of organizations to respond quickly, as well as ambiguous evidences of how meaningful work focuses this connection. Cross-sectional survey design was adopted by use of data on 384 managers working in large upstream oil and gas companies. Two hypotheses were tested by Structural Equation Modeling (SEM) through SmartPLS. The results indicate that specialization leads to a great improvement in acting agility, and it proves that profound knowledge increases responsiveness. Nonetheless, the relationship is moderated negatively by work meaningfulness, which means that, meaningful work of high meaning will decrease the rate at which the specialized employee is responsive. The researchers find that despite the agility enhancement of specialization; its impacts differ depending on the meaning of employees. It has been suggested to enhance role-based specialization and create work systems with meaningfulness and agile routines.

**Keywords:** Specialization; Acting Agility, Work Meaningfulness; Organizational Structure; Organizational Agility; Nigerian Oil and Gas Sector.

## INTRODUCTION

Oil and gas business in Nigeria has continued to be a serious source of economic development and major provider of governmental incomes, foreign exchange, and job creation (Anyaogu, 2025; Ernest, 2025). Although it is significant, the industry functions within a very dynamic and unpredictable context including unstable global oil prices, geopolitical risks, technological shocks, and a changing regulatory environment (Flowers et al., 2025; New Business Ethiopia, 2025). In this respect, the concept of acting agility, which can be described as the organizations being responsive to the environmental changes and responding to them in the most efficient manner possible, proves to be the crucial attribute of the competitive edge and operational efficiency (Anderson, 2024; Zulfiqar & Saeed, 2025). Agile action enables oil and gas firms to overcome market uncertainty, streamline production operations, and keep up with new technologies, which guarantee survival and stability in an otherwise uncertain environment (Nguyen et al., 2024). Nevertheless, it is difficult to reach high degrees of acting agility. Companies frequently have to face slow decision-making, poor coordination, and uneven implementation of their strategic plans, which makes it challenging to respond to the market shocks in a timely manner (Darweesh & Abuareish, 2023; Basiuni & Khan, 2024). One of the mechanisms that have been identified to reduce these challenges is specialization, in which workers acquire profound knowledge in particular functional domains (Beier and Bubolz, 2024). Specialization increases the accuracy of decisions, decreases operational errors, and speedy decision-making of key actions, thus enhancing the agility of an organization in terms of its responsiveness (Belanger et al., 2024).

Even though specialization enhances the pillars of acting agility, it cannot stand by its own. Of significant moderating importance to ensure that specialization skills are converted into proactive and adaptive behaviors is the meaningfulness of work, which is a psychological feeling that the work performed has a purpose and makes a difference (Zada et al., 2025; Jena et al., 2019). When employees see their work as meaningful, they are more prone to use their expertise in a creative way, to solve problems and work independently in any uncertain situation enhancing the agility of the organization (Pinho et al., 2022). On the other hand, in the situation where work is not perceived as important, even highly specialized workers might show disengagement or strictness to procedures, which will lower responsiveness and adaptability (Zulfiqar & Saeed, 2025).

The mixed views on these dynamics are found in empirical literature. Beier and Bubolz (2024) discovered that operational excellence and agility were the results of specialisation, and that Nguyen et al. (2024) and Pinho et al. (2022) discovered that specialisation was associated with silos, and impaired cross-functional interaction. On the same note, the meaningfulness of work has been praised to increase psychological empowerment and task commitment (Jena et al., 2019; Zada et al., 2025), but critics mention that its effects might be different among organizational cultures and ranks (Zulfiqar & Saeed, 2025).

The research leaves a gap in the current existing literature as it examines the moderating effect of work meaningfulness on the relationship between specialization and acting agility in particular in the Nigerian oil and gas companies. Although earlier studies have mostly explored the context of developed economies or generic industrial settings, this study tells the contextual aspects of the oil and gas industry in Nigeria, which fills the gap in knowledge about the interactive impacts of human and structural forces in determining organizational agility.

### Objectives of the Study

- i. To examine the relationship between specialization and acting agility in Nigerian oil and gas companies.
- ii. To assess the moderating role of work meaningfulness on the relationship between specialization and acting agility.

### Research Questions

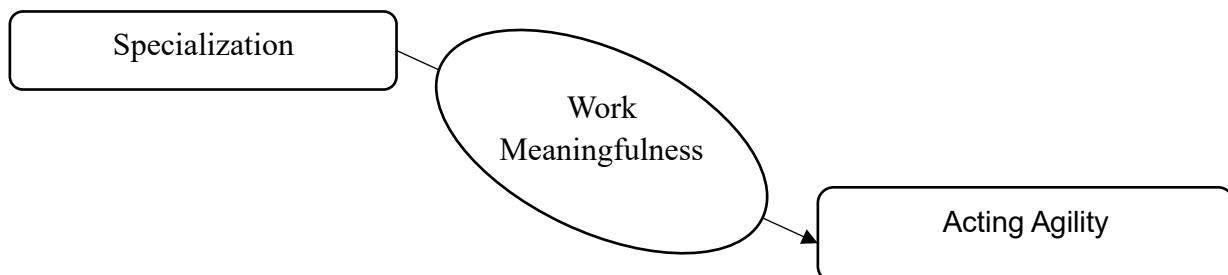
- i. What is the relationship between specialization and acting agility in Nigerian oil and gas companies?
- ii. How does work meaningfulness moderate the relationship between specialization and acting agility?

### Research Hypotheses

**H01:** There is no significant relationship between specialization and acting agility.

**H02:** Work meaningfulness does not moderate the relationship between specialization and acting agility.

### Conceptual Framework



### LITERATURE REVIEW

#### Specialization

Specialization, or assigning highly specialized, narrow-skill activities to individuals or units, is a major design option in modern organisations due to its efficiency and expertise profundity increase and increased reliability in the processes (Kiplimo, 2023; Koehler et al., 2025). Empirical and review studies show that specialization expedites routine decision-making, helps to detect errors faster, and encourages a technical standard in less sophisticated settings such as energy and manufacturing, where the domain knowledge has a manifest impact on safety and quality of the output (Kohler, 2025; Jerab & Mabrouk, 2023). Nevertheless, trade-offs are pointed out in the recent literature. Although specialization enhances local competency, it may build functional silos, slows communications across boundaries, and slows cross-organizational responses in relation to change, which is achieved by blunt (Nguyen et al., 2024). Research on systematic reviews of the literature on the topic of agility remarks that specialization should be offset with linking mechanisms (linking roles, integrative processes, or cross-functional teams) to maintain the adaptability as otherwise the firm will be highly local in nature but with poor systemic responsiveness (Nguyen et al., 2024). Practically, it is suggested that research proposes hybrid forms - maintaining specialist functions and adding cross-functional routines and temporary groups - to not only attain expertise profoundly but also acting agility (Jerab & Mabrouk, 2023; Köhler et al., 2025). Concisely, specialization is important in technical work in high-risk industries, however, its overall impact on acting agility rests on how organizations treat their interdependencies and learning channels among the specialized units. Future studies under sectoral settings (e.g., oil and gas in Nigeria) must then experiment on boundary-spanning practices that translate specialist knowledge to speedy and coordinated action.

#### Acting Agility

Acting agility (the doing component of organizational agility) is the ability of an organization to restructure resources and take timely and effective actions in accordance with the perceived opportunities or threats. The latest syntheses incumbent acting agility is the active ingredient that performs sensing and decision-making into value-creating change and the speed of execution, process re-assembly, and practical adaptation are prioritized (Motwani and Katatria, 2024). Agility in action has been linked to increased

responsiveness, operational resiliency and service continuity in volatile sectors; empirical studies of acting agility in Nigerian contexts have found that in short-term performance indicators (e.g. customer retention) where speedy operational adjustment is crucial, acting agility is typically the strongest predictor of performance indicators (Nkutt, 2025). In oil and gas industry, in particular, researchers observe that the agility that needs to be acted upon has to be integrated with technical, agile supply-chain, and workforce preparation to restructure production and logistics in response to price surges, regulatory changes, or technological innovation (Garbie, 2011). Slow performance, broken handoffs between sensing and operations, and operationalization inability are common symptoms of weak acting agility and increase costs and miss windows of opportunity. Acting agility is thus emphasized in the literature as an operating necessity, as well as a managerial difficulty: it is part not only of structures and technologies but of daily behaviors, which would translate choices into action as quickly and as consistently as possible.

### **Work Meaningfulness**

The meaningfulness of work, or the perception of employees that their work is meaningful, purposeful, and aligned to greater objectives, has become a major instrument of psychological resource that drives motivation, retention and performance (Blustein, 2023). Empirical studies that have been conducted recently demonstrate that meaningfulness predicts increased job satisfaction and reduced turnover intentions, which are frequently mediated by the satisfaction of the basic psychological needs, including autonomy, competence, and relatedness (Wandycz-Mejias et al., 2024). It has mechanisms such as job design characteristics (e.g., autonomy, task significance), leadership practices that indicate purpose, and when present, workers are reporting to be more engaged, put in more effort, and resilient to stressors (Allan et al., 2020; Pereira et al., 2025). The contextual interactions with meaningfulness include the literature review and recent studies show it has the capability of enhancing the positive influence of job resources on well-being and performance and mediate the association between organizational practice and outcomes (Pereira et al., 2025). Nevertheless, researchers observe boundary conditions and possible dark side: meaningful work may make people more vulnerable to burnout or even keep people in damaging jobs (Blustein, 2023; Allan et al., 2020).

### **THEORETICAL FRAMEWORK**

The Job Characteristics Theory (JCT) is an original concept by Hackman and Oldham, which later received extensions in modern studies and that specific job characteristics, such as skill variety, task identity, task significance, autonomy, and feedback, precondition the emergence of critical psychological states, including work meaningfulness, which then results in increased motivation, performance, and satisfaction (Oldham and Hackman, 2010; Humphrey et al., 2021). In the situation with the oil and gas companies in Nigeria, specialization might be considered a structural method to enhance skills variety and level of task importance to enhance the accuracy and efficiency of complex tasks. The agility of the organization, as the capacity to adequately and timely address the constant changes in the environment, is rooted in the perception of the role of employees as significant and freedom of control in the areas of specialization (Zada et al., 2025). JCT also upholds the moderating importance of work meaningfulness by implying that even the most specialized tasks can only lead to proactive and adaptive behavior when the employees feel that their work is meaningful and important. Empirical extensions of JCT emphasize that meaningful work, which increases the motivation-performance correlation, makes people more responsive to organizational challenges that are in line with agility demands in changing industries (Jena et al., 2019; Pereira et al., 2025). In such a way, JCT offers a theoretical prism to consider the interaction of structural (specialization) and psychological (work meaningfulness) factors on acting agility to bridge organizational design and human motivation.

### **Empirical Review**

Nafei (2016) looked on the role of organisational agility to boost engagement among workers. The main objective of the study is to document the various types of organisational agility (OA) and how they impact the job engagement (JE) of employees in industrial enterprises in Sadat city, Egypt. To assess positive OA, researchers use the OA Questionnaire and the JE Questionnaire. The study's data was supplied by 315 individuals employed by Egyptian industrial businesses in Sadat city. An overwhelming majority (315 out of 372) of the 372 surveys distributed to Egyptian industrial enterprises were returned, constituting 85% of the total. The research hypotheses were tested using Multiple Regression Analysis (MRA). All of the study's subjects agreed with the researcher that OA influences the JE traits of workers at industrial companies.

The authors Petermann and Zacher (2022) created and verified a multi-factorial assessment of employee agility. The view that employees who are able to quickly adapt to new situations has contributed to the concept of an agile workforce's rising profile in recent years. However, there has been a dearth of research focussing on agility as a whole. Few studies have really tested the hypothesised connections between agility and positive work outcomes, such as increased productivity or happiness. Because there are a number of different worker agility metrics used in the literature, it is also challenging to compare study results. They built a workforce agility framework, compared their new metric to others, and performed empirical studies to fill these gaps in our understanding of the relationship between workforce agility and employment outcomes. For this objective, two samples of persons were polled: N1 = 218 and N2 = 533. We started by analysing Sample 1 to determine the item selection measure's factor structure. The second step was to use Sample 2 to compare our measure's predictive validity to two other agility tests and to confirm the 10-

factor framework. In instance, when looking at creative production, the data demonstrate that all three worker agility indicators are predictive. Adaptability in the workplace was positively associated with organisational citizenship conduct, task and innovative performance, job pleasure, and well-being.

## METHODOLOGY

Cross-sectional survey. This study includes middle and senior managers of upstream oil and gas businesses in Rivers, Bayelsa, Delta, Akwa Ibom, Cross River, and Edo. They work on SPDC, CNL, Mobil, NAOC, and Shell Nigeria Exploration and Production Company. These companies were chosen for their strategic importance, operations size, and workforce data. NCDMB personnel data shows 5 915 middle and senior managers in the five chosen firms. Mobil Producing Nigeria Unlimited employs 3,253, Chevron Nigeria Limited 2961, SPDC 2178, NAOC 1088, and SNEPCO 546. These 5 firms out of 61 were chosen specifically to represent 91% of the population. The study used stratified random and purposive sampling. Table of Krejcie and Morgan sample size suggested 423 respondents. All constructions have Cronbachs alpha ratings over 0.70, indicating internal consistency. SEM was used to test hypotheses. 100% of 423 questionnaires were forwarded to responders. The recovery rate was 96.2% on 407 questions. This shows significant respondent collaboration and participation. Of the questionnaires analysed, 23 were incomplete or inaccurate, 5.4%. After eliminating invalid responses, 384 surveys were acceptable for analysis. Most of the 90.8 percent of questionnaires mailed were legitimate for the study.

**Table 1: Demographic Analysis**

Demographic Variable	Category	Frequency	Percent (%)	Valid (%)	Percent Cumulative Percent (%)
<b>Gender</b>	Male	242	63.0	63.0	63.0
	Female	142	37.0	37.0	100.0
<b>Age</b>	20-29 years	22	5.7	5.7	5.7
	30-39 years	76	19.8	19.8	25.5
	40-49 years	156	40.6	40.6	66.1
	50 years and above	130	33.9	33.9	100.0
<b>Marital Status</b>	Single	72	18.8	18.8	18.8
	Married	280	72.9	72.9	91.7
	Divorced	32	8.3	8.3	100.0
<b>Educational Qualification</b>	Diploma	49	12.8	12.8	12.8
	B.Sc./HND	95	24.7	24.7	37.5
	Masters	165	43.0	43.0	80.5
	Ph.D.	75	19.5	19.5	100.0
<b>Number of Years in the Organization</b>	Less than 2 years	29	7.6	7.6	7.6
	2-5 years	81	21.1	21.1	28.6
	6-10 years	200	52.1	52.1	80.7
	Above 10 years	74	19.3	19.3	100.0

Of the 384 responders, 63% were men and 37% were women. The majority of participants are 40-49 (40.6) and 50+ (33.9), indicating a mature workforce. Married (72.9), single (18.8), and divorced (8.3) responses are prevalent. Most have master (43%), B.Sc./HND (24.7%), Ph.D. (19.5%), and Diploma (12.8%), making them well-educated. Organisational tenure notices show that more than half of respondents (52.1) have 6-10 years of experience, 21.1% have 2-5 years, 19.3% have above 10 years, and 7.6% have less than 2 years. This suggests that most respondents have more than 6-10 years of experience in their organisation, while some have 2-5 years of experience. The sample group is mostly male, older, married, well-educated, and experienced.

**Table 2: Individual Statistics on Specialization**

Statement Items	Strongly Disagreed	Disagreed	Neither nor Disagree	Agree	Agreed	Strongly Agreed	Total (N)
The organization employs specialists who focus on clearly defined tasks within their areas of expertise.	22 (5.7%)	70 (18.2%)	96 (25.0%)	167 (43.5%)	29 (7.6%)	384	

Statement Items	Strongly Disagreed	Disagreed	Neither nor Disagree	Agree	Agreed	Strongly Agreed	Total (N)
Employees in our firm typically concentrate on specific roles rather than performing a wide range of tasks.	15 (3.9%)	78 (20.3%)	92 (24.0%)	163 (42.4%)	36 (9.4%)	384	
Staff members are expected to develop deep expertise in their assigned responsibilities.	7 (1.8%)	41 (10.7%)	89 (23.2%)	177 (46.1%)	70 (18.2%)	384	
Support roles are designed with specialized duties that match the specific skills of each staff member.	5 (1.3%)	6 (1.6%)	18 (4.7%)	236 (61.5%)	119 (31.0%)	384	
Each functional unit (e.g., marketing, finance) assigns employees tasks that align with their specific professional strengths.	18 (4.7%)	8 (2.1%)	22 (5.7%)	151 (39.3%)	185 (48.2%)	384	

SPSS v23 Output 2025

Table 2 shows that the level of specialization among the employees in the oil and gas companies in Nigeria is generally high as shown in the descriptive statistics. Most of the participants confirmed or strongly affirmed that the company hires experts that work on specific assignments (51.1%), that the company concentrates workers on particular assignments (51.8%), and that the company anticipates personnel to attain comprehensive knowledge in their duties (64.3%). The support roles are particularly much specialized, and 92.5% said that their roles fit staff abilities, and 87.5% said that functional departments fit professional abilities. These findings indicate that the institutionalization of specialization is rolled out through roles, which enhance efficiency and technical capability. The moderate levels of disagreement or indifference, especially in the matters of task concentration and role specific expertise suggest the possibility of implementation variability within the departments. In general, the data indicate that the Nigerian oil and gas companies focus on the clarity of their roles and a profound development of skills, which is in line with the best practices of operating effectiveness and the possible improvement of acting agility.

**Table 3: Individual Statistics on Acting Agility**

Statement Items	Strongly Disagreed	Disagreed	Neither nor Disagree	Agree	Agreed	Strongly Agreed	Total (N)
The organization quickly reconfigures its resources to respond to market changes.	18 (4.7%)	11 (2.9%)	30 (7.8%)	177 (46.1%)	148 (38.5%)	384	
The organization adjusts its operations in a timely and effective manner.	15 (3.9%)	74 (19.3%)	81 (21.1%)	166 (43.2%)	48 (12.5%)	384	
The organization promptly adopts and applies new technology when needed.	96 (25.0%)	74 (19.3%)	122 (31.8%)	59 (15.4%)	33 (8.6%)	384	
The organization introduces new products to the market in response to emerging needs.	22 (5.7%)	67 (17.4%)	92 (24.0%)	173 (45.1%)	30 (7.8%)	384	
The organization responds rapidly to pricing needs in dynamic market conditions.	18 (4.7%)	70 (18.2%)	147 (38.3%)	130 (33.9%)	19 (5.0%)	384	
The organization makes swift changes to its strategies when required.	19 (4.9%)	48 (12.5%)	88 (22.9%)	172 (44.8%)	57 (14.8%)	384	
The organization efficiently addresses customer needs and complaints without unnecessary delay.	20 (5.2%)	46 (12.0%)	61 (15.9%)	171 (44.5%)	86 (22.4%)	384	

SPSS v23 Output 2025

The descriptive statistics in Table 3 show that the acting agility of the respondents in the Nigerian oil and gas companies had different levels. A high percentage of respondents estimated that the organization reconfigures resources rapidly in order to react to the market changes (46.1%), as well as makes rapid strategic changes as needed (44.8%), which implies moderate responsiveness. Likewise, 44.5 and 45.1 percent of the respondents confirmed that there are efficient customer needs and that new products are being offered in reaction to new demands which indicates operational flexibility. Nevertheless, the application of new technology does not seem to be adopted, where 15.4% agreed and 8.6% strongly agreed, whereas 44.3% disagreed and was neutral, which is a possible lapse in responsiveness to technology. Responsiveness to pricing needs is also not consistent with a 38.3 neutral response and 23 disagreeing. On the whole, the data indicate that although the Nigerian oil and gas corporations have moderate acting agility, they still have gaps in the areas of technological use and market responsiveness that potentially can impede complete agility in dynamic settings.

**Table 4: Individual Statistics on Work Meaningfulness**

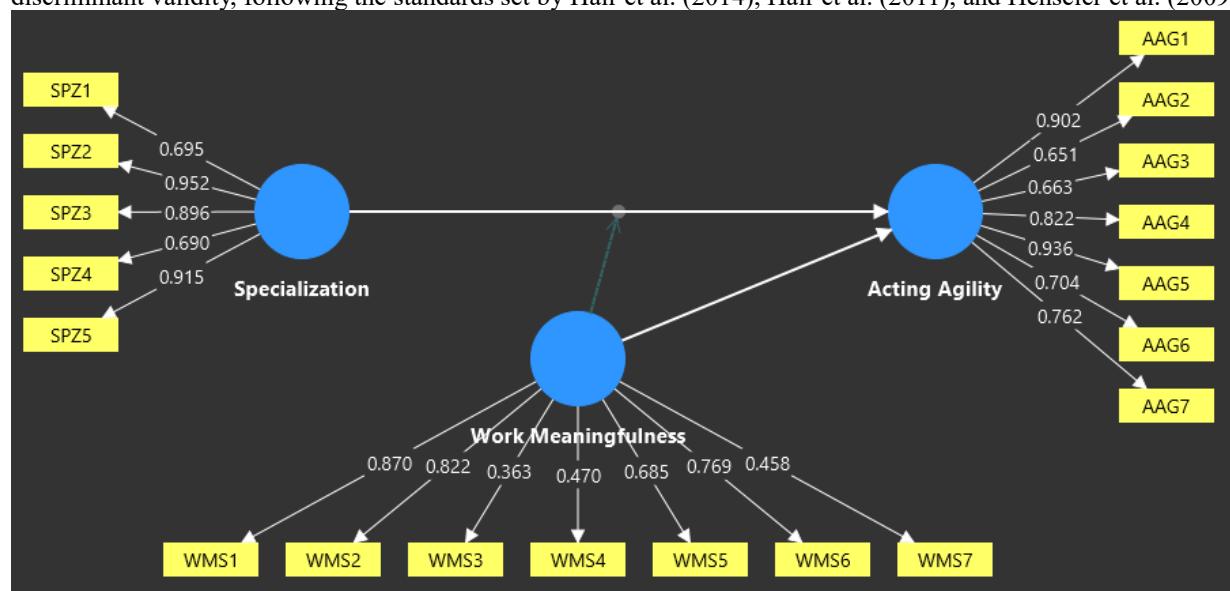
Statement Items	Strongly Disagreed	Disagreed	Neither Disagree	Agree nor Disagree	Agreed	Strongly Agreed	Total
My work helps me better understand who I am.	26 (6.8%)	41 (10.7%)	107 (27.9%)		188 (49.0%)	22 (5.7%)	384
I see my work as a way to grow personally.	63 (16.4%)	118 (30.7%)	96 (25.0%)		92 (24.0%)	15 (3.9%)	384
I believe my job has a clear and satisfying purpose.	4 (1.0%)	4 (1.0%)	19 (4.9%)		254 (66.1%)	103 (26.8%)	384
I have a strong sense of what makes my work meaningful.	11 (2.9%)	52 (13.5%)	48 (12.5%)		199 (51.8%)	74 (19.3%)	384
I understand how my work contributes to a meaningful life.	7 (1.8%)	52 (13.5%)	81 (21.1%)		185 (48.2%)	59 (15.4%)	384
I believe I am building a meaningful career through my work.	14 (3.6%)	63 (16.4%)	91 (23.7%)		166 (43.2%)	50 (13.0%)	384
My work helps me make sense of the world around me.	18 (4.7%)	56 (14.6%)	87 (22.7%)		172 (44.8%)	51 (13.3%)	384

SPSS v23 Output 2025

Table 4 is used to indicate the descriptive statistics, which shows that most of the respondents view their job as meaningful. An example of this is the agreement and strong agreement rate on the perceived purposefulness; 66.1% and 26.8% of the participants respectively agreed and strongly agreed that their job has an explicit and satisfactory purpose. In the same way, more than 51 percent of them agreed that they have a high sense of what makes their work meaningful and 48.2 percent agreed that they know how their work leads to a meaningful life. Those associated with personal growth and understanding of oneself received slightly less agreement, with significant numbers of the neutral and disagree category (e.g., 30.7% disagreed that work is a way to grow personally). On the whole, the findings indicate that although most workers in the oil and gas corporations of Nigeria believe that their work has a meaning and leads to a valuable impact on the lives, there are spheres in which the feeling of meaning might be enhanced, especially personal development. The findings indicate the topicality of work meaningfulness as a motivation that can potentially increase acting agility of specialized jobs.

### Measurement Model Evaluation

The outcomes of the PLS-SEM analysis were checked for validity and reliability by doing the measurement evaluation. Prior to assessing the model's hypotheses, this study checked for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity, following the standards set by Hair et al. (2014), Hair et al. (2011), and Henseler et al. (2009).



**Fig. 1:** Measurement Model (Outer Loadings)**Table 5:** Result Summary for Reflective Measurement Model

Constructs	Indicators	Convergent Validity			Internal Reliability	Consistency
		Loadings ( $\beta$ ) ( $l_k$ )	Indicator Reliability ( $l_k^2$ )	AVE	Composite Reliability ( $\rho_{\text{co}}$ )	Cronbach's Alpha ( $\alpha$ )
	Thresholds	>0.70	>0.50	>0.50	>0.70	0.70 - 0.90
<b>Specialization</b>	SPZ1	0.695	0.483			
	SPZ2	0.952	0.906			
	SPZ3	0.896	0.802	0.701	0.920	0.890
	SPZ4	0.690	0.476			
	SPZ5	0.915	0.904			
<b>Acting Agility</b>	AAG1	0.902	0.813			
	AAG2	0.651	0.423			
	AAG3	0.663	0.440	0.615	0.917	0.892
	AAG4	0.822	0.676			
	AAG5	0.936	0.876			
	AAG6	0.704	0.496			
	AAG7	0.762	0.581			
<b>Work Meaningfulness</b>	WMS1	0.870	0.757			
	WMS2	0.820	0.672			
	WMS3	0.363	0.132	0.436	0.833	0.778
	WMS4	0.470	0.221			
	WMS5	0.685	0.469			
	WMS6	0.769	0.591			
	WMS7	0.458	0.230			

Source: SmartPLS4.1.1.4 Output of Research Data, 2025

Table 5 provides the results of the reflective measurement model that evaluated the convergent validity and internal consistency reliability. In Specialization, all indicators proved to be strongly loaded (-0.690 -0.952), AVE greater than 0.50 (0.701) as well as high composite reliability (0.920) and Cronbachs alpha (0.890), which were taken to reflect high levels of convergent validity and internal consistency. The loadings of acting Agility were generally acceptable ( $\beta = 0.651-0.936$ ) and the AVE = 0.615, composite reliability = 0.917 and Cronbach alpha = 0.892 indicated that it was a reliable measurement. Meanwhile, Work Meaningfulness had lower indicator loading of WMS3 (0.363), WMS4 (0.470), WMS7 (0.458), and less than satisfactory AVE of 0.436, but had satisfactory composite reliability (0.833) and Cronbach alpha (0.778). This implies that though the construct is internally consistent, not all the items can measure the latent construct well-meaning that refinement or even dropping of low-loading items could be done to enhance convergent validity. On the whole, the measurement model is largely reliable and valid to use further structural analysis.

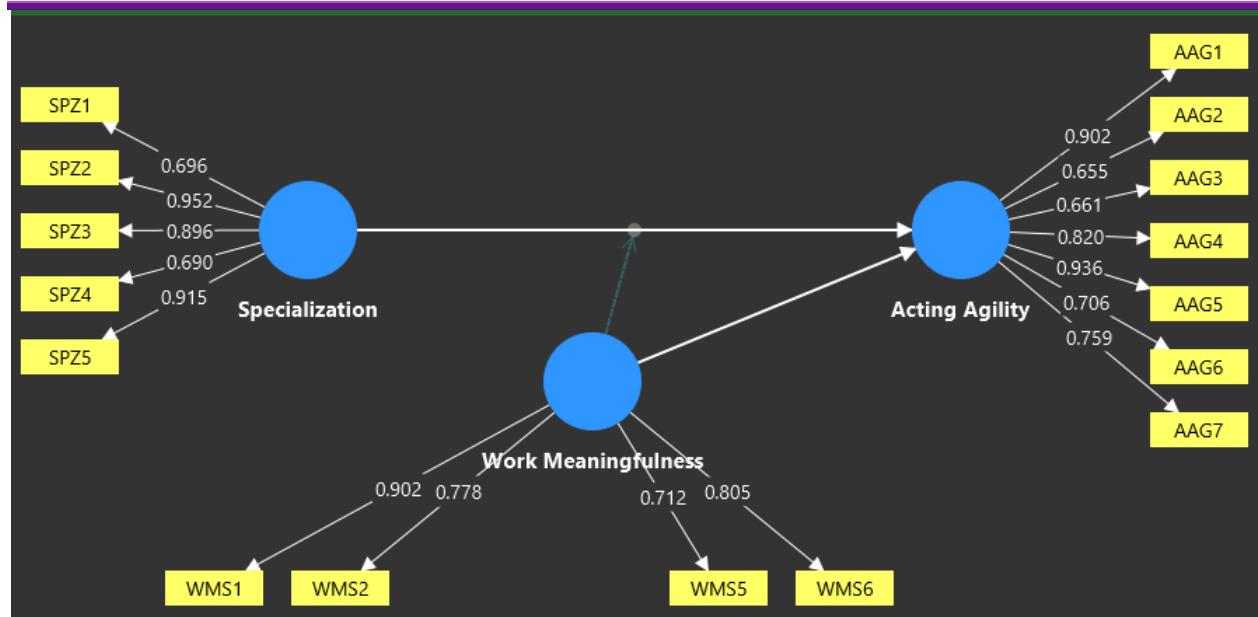


Fig. 2: Reassessed Measurement Model (Outer Loadings)

Table 6: Result Summary for Reflective Measurement Model

Constructs	Indicators	Convergent Validity			Internal Reliability	Consistency
		Loadings ( $\beta$ ) ( $l_k$ )	Indicator Reliability ( $l_k^2$ )	AVE	Composite Reliability ( $\rho_{\text{co}}$ )	
Specialization	SPZ1	0.695	0.483			
	SPZ2	0.952	0.906			
	SPZ3	0.896	0.802	0.701	0.920	0.890
	SPZ4	0.690	0.476			
	SPZ5	0.915	0.904			
Acting Agility	AAG1	0.902	0.813			
	AAG2	0.651	0.423			
	AAG3	0.663	0.440	0.615	0.916	0.892
	AAG4	0.822	0.676			
	AAG5	0.936	0.876			
	AAG6	0.704	0.496			
	AAG7	0.762	0.581			
Work Meaningfulness	WMS1	0.902	0.813			
	WMS2	0.778	0.605	0.643	0.878	0.815
	WMS5	0.712	0.507			
	WMS6	0.805	0.648			

Source: SmartPLS4.1.1.4 Output of Research Data, 2025

The findings indicate that all the three constructs, Specialization, Acting Agility, and Work Meaningfulness, are acceptable in terms of psychometric characteristics. The majority of the item loadings are above the 0.70 cut-off, which is good indicator reliability, but some few slightly lower loadings (e.g., SPZ1, SPZ4, AAG2, AAG3) are in the exploratory research acceptable range. Construct convergent validity between all constructs is sufficient, with an AVE of 0.50 and above (Specialization = 0.701; Acting Agility = 0.615; Work Meaningfulness = 0.643) indicating that indicators adequately measure their corresponding latent variables. Internal consistency reliability has also been greatly established where composite reliability scores are 0.90 or higher in Specialization and Acting Agility, and 0.878 or higher in Work Meaningfulness, whereas Cronbachs alpha values are within the 0.70-0.90 ideal range.

All in all, the reflective measurement model has a high degree of reliability and validity, which proves that the constructs are statistically robust to be analyzed later in the form of structural model.

**Table 7:** Overview of Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
<b>Acting Agility</b>	0.892	0.918	0.916	0.615
<b>Specialization</b>	0.890	0.926	0.920	0.701
<b>Work Meaningfulness</b>	0.815	0.848	0.878	0.643

Source: SmartPLS4.1.1.4 Output of Research Data, 2025

The constructs are all highly reliable and valid. The values of the Cronbach alpha and composite reliability are above the 0.70 mark, which proves the internal consistency of Acting Agility (alpha = 0.892), Specialization (alpha = 0.890), and Work Meaningfulness (alpha = 0.815). The values of composite reliability (rho\_c) are also large, which means that there is consistent measurement. The values of AVE of all constructs are above 0.50, which ensures appropriate convergent validity. The general findings are that all the constructs are reliably measured and can be analyzed further using a structural model.

**Table 8:** Overview of Discriminant Validity – Fornell-Larcker Criterion

	Acting Agility	Specialization	Work Meaningfulness
<b>Acting Agility</b>	0.784		
<b>Specialization</b>		0.837	
<b>Work Meaningfulness</b>	0.601	0.522	0.802

Source: SmartPLS4.1.1.4 Output of Research Data, 2025

The results of Fornell-Larcker demonstrate that there is acceptable discriminant validity between the constructs. The square root of AVE of each construct (Acting Agility = 0.784; Specialization = 0.837; Work Meaningfulness = 0.802) is higher than the relationship between that construct and the other constructs, which shows that the construct is more strongly associated with its own indicators as compared to the other constructs. In spite of moderate inter-construct correlations (ex: Acting Agility Specialization = 0.621), they do not go beyond the diagonal values. Therefore, the constructs are empirically different and fit in structural model analysis.

### Test of Hypotheses

The PLS-SEM was employed in testing the bivariate hypotheses by the bootstrap method. The path coefficients (.10 to 0.29, .30 to .49, and .50 to 1.0) indicate weak, moderate and significant relationship respectively. To use the two-tailed test, t values above 1.96 are significant, whereas t values below 1.96 are not (Hair et al., 2014). In addition, the hypotheses that had p-value below 0.05 were accepted and those whose p-values exceeded 0.05 were dismissed.

**H0<sub>1</sub>:** There is no significant relationship between specialization and acting agility.

**H0<sub>2</sub>:** Work meaningfulness does not moderate the relationship between specialization and acting agility.

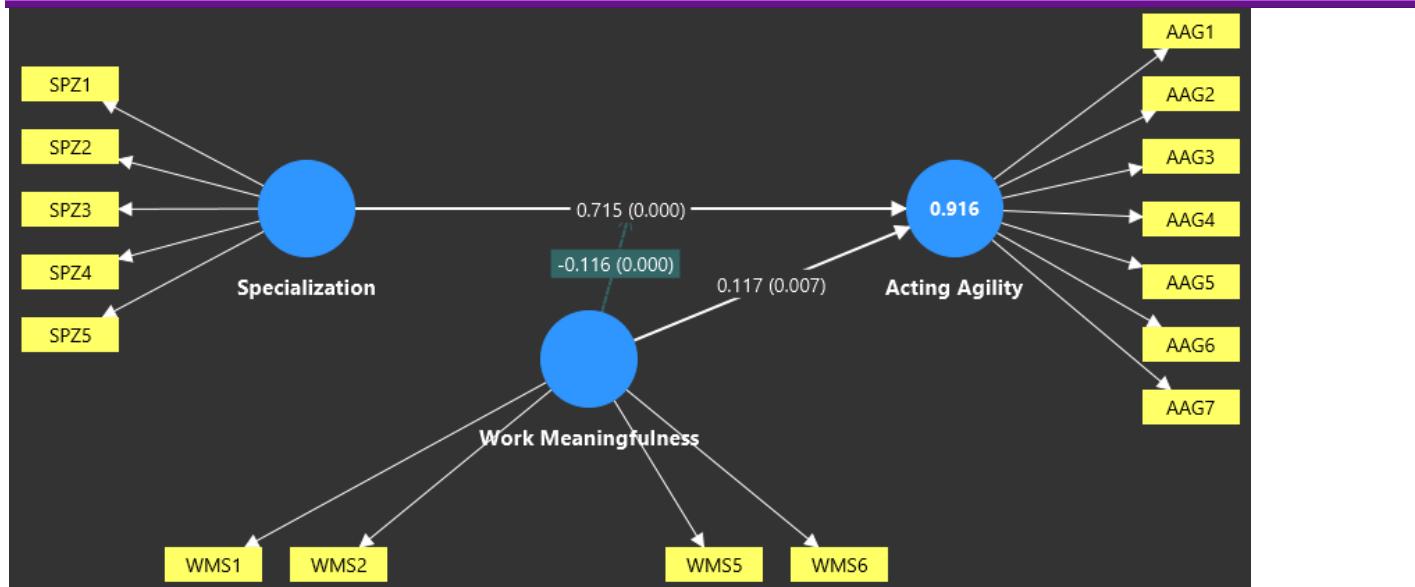


Fig. 3: Hypotheses 1-2

The structural model shows the connection between Specialization, Work Meaningfulness and Acting Agility. The coefficient of the direction Specialization to Acting Agility is also significant ( $\beta = 0.715$ ,  $p = 0.000$ ) which means that the greater the specialization, the greater the acting agility of employees and thus, supports H0<sub>1</sub>. Work Meaningfulness is positively and significantly related to Acting Agility ( $\beta = 0.117$ ,  $p = 0.007$ ), which demonstrates that meaningful work alone affects the responsiveness of the employees by agility.

The interaction effect, however (Specialization x Work Meaningfulness x Acting Agility), is negative and significant ( $\beta = -0.116$ ,  $p = 0.000$ ). This means that the meaningfulness of work weakens the correlation between agility in the performance of specialization and acting. Although specialization enhances agility, the same effect is undermined when the employees feel very high meaningfulness in their work. H0<sub>2</sub> is therefore accepted, but the moderation is negative implying a dampening and not an enhancing effect.

Table 9: Results of Hypotheses Testing

	Original sample (O)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
Specialization -> Acting Agility	0.715	0.063	11.319	0.000
Work Meaningfulness x Specialization -> Acting Agility	-0.116	0.031	3.699	0.000

Source: SmartPLS4.1.1.4 Output of Research Data, 2025

The findings indicate that Specialization is a significant predictor of the Acting Agility ( $\beta = 0.715$ ,  $t = 11.319$ ,  $p = 0.000$ ), which verifies that there is a positive relationship. Also, the interaction term (Work Meaningfulness x Specialization) impacts strongly negatively on the Acting Agility ( $\beta = -0.116$ ,  $t = 3.699$ ,  $p = 0.000$ ). This shows that Work Meaningfulness moderates the relationship although negatively i.e. the higher the work meaningfulness the lesser the positive effect of specialization on the agility of acting. In this way, both hypotheses come true with H0<sub>2</sub> showing a dampening moderating effect.

## DISCUSSION OF FINDINGS

This research confirmed that specialization substantially impacts positively on acting agility meaning that employees who are more well-rounded with deep expertise react quicker and more efficiently to the changing demands of operation in the oil and gas companies within Nigeria. This confirms previous findings that organizational agility promotes employee performance and engagement. As an example, Nafei (2016) discovered that agility influences how employees react to behavioural factors and enhances their rates of engagement in an industrial environment, which means that agile environments would be highly advantaged by having competencies that are explicitly defined. Equally, Petermann and Zacher (2022) demonstrated that adaptability, which is a fundamental aspect of agility, has a close connection with task performance, innovative behaviour, job satisfaction, and well-being. Their results support the existing findings and demonstrate that the agility in adapting to changing tasks is demonstrated by workers

with better skills and a better understanding of their role specialization. In general, specialization offers the structural and cognitive simplicity that is required to perform decisions fast hence justifying the importance of H0<sub>1</sub>.

The second observation indicated that the relationship between specialization and the acting agility is statistically moderated by work meaningfulness, albeit in a negative manner. This insinuates that specialization will increase the agility of the actors, but not high in cases where the employees consider that the level of meaningfulness in the work is very high. This is in line with current studies that have highlighted the importance of meaningful work whose interpretations of role expectations and reactions to organisational needs can be instrumental in how workers perceive their roles and roles. According to Petermann and Zacher (2022), positive psychological states, such as satisfaction and well-being, are related to employee agility, and they might have an impact on task prioritization among employees. Work can also become very meaningful, and employees can also become more concerned with the long-term purpose work as opposed to demands to execute something quickly, thus agility responses are moderated. The discovery of this finding provides an addition to the current literature because it demonstrates that meaningful work, as beneficial as it might be, can change the behavioural expression of agility in response to situational pressures. Therefore, the research supports H0<sub>2</sub> and adds new knowledge to the interactions among psychological factors and structural competencies regarding their influence on employee agility.

## CONCLUSION

The research confirms that specialization creates a considerable boost in acting agility, which means that the obviously defined expertise can lead to quicker and more efficient reactions of the organization. The high and positive value indicates that the employees with specialized roles play significant roles in agile actions. Nevertheless, the work meaningfulness moderates negatively implying that the better employees perceive that their work is highly meaningful, the weaker the relation between specialization and acting agility. It means that the meaningful work can be changed with a more emphasis on the purpose-centered behaviours instead of quick task-oriented reactions. In summary, specialization is a good indicator of agility in acting, although the effect of this on acting agility is relative to the level of meaningfulness of the employees.

## Recommendations

- i. The oil and gas companies in Nigeria should practice specialization by engaging in specific training, defining the job role, and updating the skills. This will build on the knowledge of the employees and enhance acting nimbleness, and hence, responding faster and more efficiently to operations dilemmas.
- ii. As high work meaningfulness reduces marginally the specialization-agility relationship, managers of oil and gas companies in Nigeria ought to structure work systems that maintain the purpose and meaning at the same time strengthen the routines of agility. Promoting the principles of self-rule, constant feedback, and reflection may help employees remain purpose-driven without losing speed and responsiveness.

## REFERENCES

- Anderson, J. (2024). *Organizational agility - A complete guide + best examples in 2024*. Agile by Design Inc.
- Anyaogu, I. (2025). *Local firms drive new growth phase in Nigeria's oil sector*. Reuters.
- Basioni, A., & Khan, M. W. (2024). The impact of organisational structure on project performance in the energy sector. In *BUiD Doctoral Research Conference 2023: Multidisciplinary Studies* (pp. 414-424). Springer Nature Switzerland.
- Beier, C., & Bubolz, J. (2024). *From specialization to cross-functional teams: The path to agility*. Wisconsin Agility.
- Belanger, R., Handscomb, C., & Lemsom, A. (2024). *Five features of operational excellence in oil and gas organizations*. McKinsey & Company.
- Chemonges, A. K. (2023). Organizational design: Formalisation verses specialisation. *Journal of Human Resource & Leadership*, 7(3), 71-82.
- Darweesh, R., & Abuareish, M. (2023). How does organizational structure impact the relationship between organizational agility and customer satisfaction?. *Economics Business and Organization Research*, 5(2), 88-109.
- Egboboh, C. (2025). *FG urged to implement policy reforms to de-risk oil, gas sector, boost local participation*. BusinessDay.
- Ernest, B. (2025). *Nigeria's oil industry in 2025: Can it thrive amid global shifts?* African Leadership Magazine.
- Flowers, S., Thompson, G., Mohammed, M., & Parkinson, D. (2025). *Nigeria's bold strategy to double oil production*. Wood Mackenzie.
- Garbie, I. H. (2011). Implementation of agility concepts into oil industry. *Journal of Service Science and Management*, 4(2), 203-214.
- Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2021). Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the job characteristics model. *Journal of Applied Psychology*, 106(3), 450-475.
- Jena, L. K., Bhattacharyya, P., & Pradhan, S. (2019). Am I empowered through meaningful work? The moderating role of perceived flexibility in connecting meaningful work and psychological empowerment. *IIMB Management Review*, 31(3), 298-308.
- Jerab, D., & Mabrouk, T. (2023). The evolving landscape of organizational structures: A contemporary analysis. *SSRN*, 4584643.
- Kiplimo, J. J. (2023). Formalization and Specialization in Organizational Design. *African Journal of Emerging Issues*, 5(11), 37-46.

- Köhler, D. P., Rausch, A., Biemann, T., & Büchsenschuss, R. (2025). Expertise and specialization in organizations: a social network analysis. *European Journal of Work and Organizational Psychology, 34*(2), 282-297.
- Motwani, J., & Katatria, A. (2024). Organization agility: A literature review and research agenda. *International Journal of Productivity and Performance Management, 73*(9), 2709–2754.
- Nafei, W. A. (2016). The role of organizational agility in reinforcing job engagement: A study on industrial companies in Egypt. *International Business Research, 9*(2), 153-167.
- New Business Ethiopia (2025). *Nigeria's oil & gas sector: Opportunities rising amid persistent risks*. New Business Ethiopia.
- Nguyen, T., Le, C. V., Nguyen, M., Nguyen, G., Lien, T. T. H., & Nguyen, O. (2024). The organisational impact of agility: A systematic literature review. *Management Review Quarterly, 1*-49.
- Nkutt, N., & Ayandele, I. (2025). Relative importance of organizational agility in customer retention in the Nigerian banking sector. *European Journal of Business and Innovation Research, 13*(4), 22–30.
- Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior, 41*(5), 573–584.
- Petermann, M. K. H., & Zacher, H. (2022). Workforce agility: Development and validation of a multidimensional measure. *Frontiers in Psychology, 13*, 841862.
- Pinho, C. R., Pinho, M. L. C., Deligonul, S. Z., & Cavusgil, S. T. (2022). The agility construct in the literature: Conceptualization and bibliometric assessment. *Journal of Business Research, 153*, 517-532.
- Zada, M., Abdalla, A. A., Estay, C., & Nureldeen, W. A. (2025). Leading with purpose: unravelling the impact of motivating language on work engagement with a focus on psychological meaningfulness in the tourism and hospitality sector. *BMC Psychology, 13*(1), 708.
- Zulfiqar, S., & Saeed, S. (2025). How corporate mindfulness leads to organizational agility? Exploring the roles of employee knowledge sharing and resilience. *Journal of Organizational Change Management, 38*(3), 644–663.