

UNCERTAINTY AVOIDANCE AND INNOVATIVE WORK BEHAVIOR IN PETROCHEMICAL COMPANIES IN RIVERS STATE, NIGERIA

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ABSTRACT

This study examined the relationship between uncertainty avoidance and innovative work behavior in Petrochemical Companies in Rivers State, Nigeria. The study utilized a Cross-sectional. The population of the study was five thousand five hundred (5,500) employees from the two (2) Petrochemicals Companies located in Rivers State. The Taro Yamen's formula was used to determine the sample size which is 373. Structured questionnaire, designed in Likert five-point scales was used in collecting primary data from the respondent. Its reliability was ascertained through Cronbach's Alpha reliability coefficient with a threshold of 0.70. Spearman's Rank Order Correlation Coefficient statistical tool was used for the bivariate analysis. The study findings revealed that uncertainty avoidance positively influences innovative work behavior—specifically idea generation, opportunity exploitation, and idea championing in petrochemical companies in Rivers State. Employees are more innovative when operating within structured but supportive environments that reduce ambiguity. The study concludes that moderate uncertainty avoidance fosters a balanced climate that supports innovation by providing clarity without stifling creativity. It recommends that organizations: (1) offer clear yet flexible guidelines to encourage idea generation; (2) build structured systems to support opportunity exploitation; and (3) create channels for employees to champion and promote new ideas.

Keywords: Uncertainty avoidance organizational culture and innovative work behavior

INTRODUCTION

In today's competitive business environment, organizations face numerous global challenges and are compelled to adapt by developing innovative products and services (Mumford, 2003). Innovative work behavior (IWB) has gained increasing attention as it encompasses opportunity exploration, idea generation, and implementation behaviors aimed at achieving performance improvements (Dorenbosch et al., 2005). IWB involves employees taking voluntary actions

driven by knowledge and a desire to exceed routine expectations, ultimately generating new procedures, work methods, or products. It includes identifying problems, proposing innovative solutions, and actively participating in workplace innovation. While innovation can be initiated individually, its execution typically relies on group collaboration, making it essential for organizations to cultivate environments that support and encourage such behaviors.

A substantial body of literature highlights several critical factors influencing IWB (Khan et al., 2020; Lukoto & Chan, 2017; Faraz et al., 2017; Eskiler et al., 2016; Stoffers et al., 2015; Hartmann, 2006). Among these, organizational culture stands out as a widely examined and practically significant factor (Odumeru, 2013). Defined as the shared values, beliefs, and behavioral norms within an organization, culture reflects the internal environment shaped by the assumptions of managers and employees. Organizational culture acts as a powerful source of competitive advantage by aligning capabilities, shaping procedures, and offering frameworks for problem-solving. According to Yilmaz (2008), it influences how members interact, solve problems, and strive toward achieving organizational goals, thus either supporting or obstructing innovation.

Although numerous studies have addressed the effect of organizational culture and innovation on enterprise performance (Naranjo-Valencia et al., 2011), limited attention has been given to the specific role of cultural dimensions such as uncertainty avoidance in shaping innovative work behavior (McLean, 2012; Valencia et al., 2010). This gap in literature has prompted the current study, which aims to assess the relationship between uncertainty avoidance a key cultural trait and innovative work behavior within petrochemical companies in Rivers State, Nigeria.

The specific objectives of the study include:

- i. To examine the relationship between uncertainty avoidance and idea generation in petrochemical companies in Rivers State, Nigeria.
- ii. To determine the relationship between uncertainty avoidance and opportunity exploitation in petrochemical companies in Rivers State, Nigeria.
- iii. To evaluate the relationship between uncertainty avoidance and idea championing in petrochemical companies in Rivers State, Nigeria.

Conceptual Framework

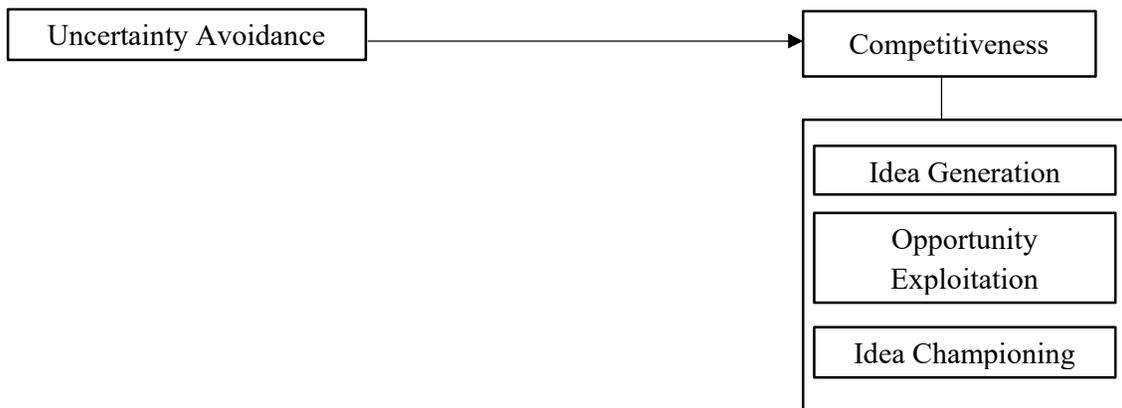


Figure 1: Conceptual framework for the relationship between uncertainty avoidance and innovative work behavior give transformational leadership

Source: Desk Research (2025). Uncertainty avoidance adapted from Waldfogel, 2011 while measures of innovative work behavior were adapted from the work of Pradan and Jena (2017).

Research Questions

- i. What is the relationship between uncertainty avoidance and idea generation in petrochemical companies in Rivers State, Nigeria?
- ii. What is the relationship between uncertainty avoidance and opportunity exploitation in petrochemical companies in Rivers State, Nigeria?
- iii. What is the relationship between uncertainty avoidance and idea Championing in petrochemical companies in Rivers State, Nigeria?

Statement of Hypotheses

H01: There is no significant relationship between uncertainty avoidance and idea generation in petrochemical companies in Rivers State, Nigeria.

H02: There is no significant relationship between uncertainty avoidance and opportunity exploitation in petrochemical companies in Rivers State, Nigeria.

H03: There is no significant relationship between uncertainty avoidance and idea championing in petrochemical companies in Rivers State, Nigeria

LITERATURE REVIEW

Theoretical Review

This study was premised on the resource-based view theory.

Resource-Based View Theory

The Resource-Based View (RBV) theory, postulated by Barney (1986), asserts that firms possess resources—some of which are strategic in nature—that enable them to achieve competitive advantage and superior long-term performance. Resources that are valuable, rare, imperfectly imitable, and non-substitutable (VRIN) are considered essential for sustaining such advantage. The RBV emphasizes the need for firms to develop unique, firm-specific core competencies that distinguish them from competitors. Not all resources carry the same strategic weight; only those that are difficult to replicate or replace can confer lasting advantage. Managers must therefore identify and invest in these core competencies and cultivate organizational learning to preserve them. Among these competencies, organizational culture stands out as a critical internal resource, offering a platform for enhancing overall performance and competitiveness.

The theory is particularly relevant to the study of organizational culture and innovative work behavior, as it frames culture as a strategic intangible asset that fosters employee innovation. A culture that encourages openness, collaboration, risk-taking, and continuous learning creates an environment where employees feel empowered to generate, share, and implement novel ideas. Such cultures become deeply embedded in routines and social practices, making them difficult for competitors to imitate. Within the RBV framework, this positions organizational culture as a driver of sustained innovative work behavior, thereby enhancing an organization's adaptability and long-term success. Consequently, understanding which cultural attributes best

support innovation can provide organizations with a clear strategic advantage in dynamic and competitive environments.

Conceptual Review

Uncertainty Avoidance

Uncertainty avoidance is defined as the degree to which individuals within a company or society feel threatened by ambiguous, uncertain, or unpredictable situations (Gaganis et al., 2019; Hofstede, 1991). In cultures with high uncertainty avoidance, people tend to prefer formal rules, structured activities, and familiar routines, perceiving deviations as potential threats, and thus often form rigid beliefs to manage their discomfort with uncertainty. Such cultures value stability, emotional expression of unease toward change, and loyalty to existing organizations, with employees often staying longer with their current employer (Mortledge, 2006). The influence of uncertainty avoidance extends beyond individual behavior to organizational and even national decision-making processes. On a personal level, it significantly shapes consumer behavior, particularly in online purchasing decisions (Hwang & Lee, 2012; Lu et al., 2018). At the firm level, this cultural dimension affects critical areas of decision-making including managerial, financial, and operational domains, influencing strategic choices such as resource allocation (Chang et al., 2016), corporate investments (Cetenak et al., 2017; Lehmborg & Davison, 2018), cross-border acquisitions (Bremer et al., 2017), and international business entry strategies (Autio et al., 2013; Dimitratos et al., 2011).

Innovative Work Behavior

Innovative work behavior is a series of voluntary actions armed with knowledge, based on a desire to go beyond routine and the intention to provide useful outcomes in the form of ideas, new procedures, new work methods, new processes, and/or new products. Innovative work behavior refers to the behavior of all employees related to identifying problems and opportunities, finding innovative solutions, suggesting innovations to colleagues and supervisors, and most importantly contributing to implementing innovation in the workplace. It is the duty of organizations to encourage innovative work behavior. Innovation, however is not an action taken by individuals only, it is handled by a group. Research has shown the importance of a climate enhancing innovative work behavior. The culture or working climate in successful divisions of a large chemical producer differs from less successful divisions in the same organization (Nystrom, 2020).

Measures of Innovative Work Behavior

Idea generation

Idea generation is a fundamental element of innovative work behavior and marks the initial step in opportunity exploitation. According to Mumford (2000), individuals are the primary source of new ideas, and effective innovation requires not only recognizing needs or opportunities but also developing novel approaches to address them (Kanter, 1988). This process encompasses generating concepts related to new products, services, processes, market entry, or general problem-solving. Recent research underscores the influence of digital technologies and hybrid work structures in fostering idea generation. For example, Gao, Zang, and Liu (2023) found that digital collaboration platforms expand creative input and inclusivity by linking diverse knowledge sources, while Kakarika, González-Gómez, and Papalexandris (2022) emphasized that empowering leadership styles significantly enhance employees' capacity for ideation.

Opportunity Exploration

Opportunity exploration refers to the intentional and proactive search for new markets, products, services, or business models that organizations can exploit for growth and sustainability. It entails identifying trends, technological shifts, unmet customer needs, and environmental changes to formulate innovative strategies. In the Nigerian context, Okafor and Ogbari (2022) observed that entrepreneurial orientation, technological awareness, and dynamic capabilities significantly shape opportunity exploration, particularly in competitive and volatile industries. Their findings suggest that firms engaging in environmental scanning and strategic foresight tend to be more market-responsive and resilient. Additionally, Eze, Chinedu-Eze, and Bello (2020) emphasized how digital transformation—including mobile technologies, big data, and online platforms has enhanced real-time identification of emerging opportunities, especially in sectors like fintech, agritech, and e-commerce.

Championing

Idea championing refers to the active support, promotion, and advocacy for new ideas within an organization, requiring individuals to persistently push innovations through various stages despite resistance or limited resources (Howell, Shea & Higgins, 2005). Champions not only believe in the value of an idea but also engage in lobbying for executive backing, aligning stakeholders, and navigating uncertainties to ensure its realization (Shan, Song, & Yao, 2016). Their role is especially crucial in innovation-intensive and resource-constrained settings, where moving an idea from concept to implementation demands cross-functional coordination and strategic influence. In technology-driven sectors, idea champions have become key enablers of competitive advantage, as highlighted by Choi, Sung, and Park (2023), who found that these individuals often act as boundary-spanners, facilitating communication across departments and aligning technical and managerial perspectives.

Empirical Review

Hasan, Wahid, Jais and Pauzi (2020) focused on the effect of uncertainty avoidance on job performance of government employees in Pahang Darul Makmur: A regression analysis approach. The regression analysis approach using IBM-SPSS AMOS 24 software was used to determine the effect of uncertainty avoidance on job performance. A total of 176 respondents were conveniently selected to participate in this study and answered a set of questionnaire. This study found that moderate positive relationship ($r = .513$, $p = .000$) existed between the two variables. In addition, there exists positive significance effect of uncertainty avoidance on job performance, whereby the uncertainty avoidance was identified as significant predictor ($\beta = 0.453$, $p = .000$). The result indicated that the greater the uncertainty avoidance culture, the employees tends to have positive motivation towards their job performance. The study concluded that majority of the government employees still depends heavily upon instructions and regulations set by the organization in the course of completing their tasks.

Kuswati (2020) was moved by the insignificant performance of employees at Municipal Waterworks in Majalengka Regency Office in Indonesia where he examined the cultural practices of the organization. The independent variables are Robin's dimensions of organizational culture (innovation culture, clear attention, outcome orientation, people, orientation, team orientation, aggressiveness and stability) while the dependent variables are Moherionon's measure of employee performance (effectiveness, efficiency, quality, timeliness, productivity, and safety). The survey method was employed in the study whereby 115 employees in the office were randomly selected. The descriptive statistics was used to analyze the data while the hypotheses was tested using both the Pearson Product-Moment Correlation and multiple regression. The results indicated that the organizational culture in Majalengka Regency Office was categorized well and the employees' performance reached a

good category. It was also discovered through the tested hypotheses that organizational cultural practices positively influence the service quality, and that organizational culture has a positive and significant influence on employee performance.

Mahamadou, Fall and Giraud (2020) investigated the impact of organizational culture on work performance: the mediating role of intrinsic motivation. The objective of the study was to identify the dimensions of organizational culture (Involvement, Consistency, Adaptability, Mission), which affect task and contextual performance through intrinsic motivation at work. The results drawn from regression analyzes on a sample of 300 employees showed that some dimensions of organizational culture are positively correlated with intrinsic motivation and job performance. Also based on Hayes' method for the investigation of indirect effects (2013), the study's data analysis showed that the mediating effect of intrinsic motivation between the sub-dimensions of organizational culture and job performance depends on the type of performance: task or contextual performance. Drawing from the foregoing, we hereby hypothesized as follows:

METHODOLOGY

This study adopted the cross-sectional survey research design. The population of the study was the five thousand five hundred (5,500) employees from the two (2) Petrochemicals Companies located in Rivers State with a sample size of 378 which was determined using the Taro Yamen's formula. Structured questionnaire was the only source of data collection. The study adopted both content and face-validity and the reliability for the study was be determine using the Cronbach alpha. Pearson Product Moment Test Statistics was used to analyze the data with the aid of Statistical Package for Social Science.

DATA ANALYSIS AND DISCUSSION OF FINDINGS

Bivariate Data Analysis

The analysis on the bivariate relationship between uncertainty avoidance and the measures of innovative work behaviour measures such as idea generation, opportunity exploitation and idea championing. The Spearman Rank Order Correlation is adopted as the statistical tool in the assessment of the correlations between the variables. The study adopts a criterion and significance value of 0.05, based on its level of confidence (95%). **Decision rule:** The decision rule which applies for all bivariate test outcomes is stated as follows: where $P < 0.05$, reject hypothesis on the basis or evidence significant relationship; and where $P > 0.05$, accept hypothesis on the basis of insignificant relationship between the variables.

Uncertainty Avoidance and Innovative Work Behaviour Measures

Tables 1, 2 and 3 show the result of correlation matrix between uncertainty avoidance and innovative work behaviour (idea generation, opportunity exploitation and idea championing respectively) in petrochemical companies in Rivers State, Nigeria. Also displayed in the table is the statistical test of significance (p – value), which makes us able to answer our research question and generalize our findings to the study population.

Table 1: Correlations for Uncertainty Avoidance and Idea Generation

			Uncertainty Avoidance	Idea Generation
Spearman's rho	Uncertainty Avoidance	Correlation Coefficient	1.000	.509**
		Sig. (2-tailed)	.	.000
		N	356	356
	Idea Generation	Correlation Coefficient	.509**	1.000
		Sig. (2-tailed)	.000	.
		N	356	356

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2025

Research Question 1: What is the relationship between uncertainty avoidance and idea generation in petrochemical companies in Rivers State, Nigeria?

The Spearman’s Rank-Order Correlation analysis examining the relationship between uncertainty avoidance and idea generation in petrochemical companies in Rivers State, Nigeria, reveals a moderate and positive correlation ($\rho = 0.509$), indicating that employees who prefer structured procedures and predictable environments are more inclined to engage in idea generation. This implies that when employees operate within clearly defined job roles and supportive frameworks that mitigate ambiguity, they are more likely to propose new ideas aimed at improving operational efficiency and addressing challenges. The statistical test of significance ($p = 0.000 < 0.05$) confirms that this relationship is statistically significant, leading to the rejection of the null hypothesis and the acceptance of the alternative, affirming a significant relationship between uncertainty avoidance and idea generation.

Table 2: Correlations for Uncertainty Avoidance and Opportunity Exploitation

			Uncertainty Avoidance	Opportunity Exploitation
Spearman's rho	Uncertainty Avoidance	Correlation Coefficient	1.000	.661**
		Sig. (2-tailed)	.	.000
		N	356	356
	Opportunity Exploitation	Correlation Coefficient	.661**	1.000
		Sig. (2-tailed)	.000	.
		N	356	356

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2025

Research Question 2: What is the relationship between uncertainty avoidance and opportunity exploitation in petrochemical companies in Rivers State, Nigeria?

The analysis of the relationship between uncertainty avoidance and opportunity exploitation in petrochemical companies in Rivers State, Nigeria, using Spearman’s Rank-Order Correlation, reveals a strong and positive correlation ($\rho = 0.661$). This suggests that employees who prefer structured environments with clear guidelines are more likely to proactively identify and exploit opportunities that improve productivity, safety, and efficiency in the workplace. The

preference for predictability appears to foster a sense of control and confidence, enabling workers to take initiative within known boundaries. The statistical test of significance ($p = 0.000 < 0.05$) confirms that this relationship is statistically significant, leading to the rejection of the null hypothesis and the acceptance of the alternative. Therefore, the study concludes that there is a significant relationship between uncertainty avoidance and opportunity exploitation, highlighting the need for petrochemical firms to create structured and predictable organizational systems that support proactive, opportunity-seeking behaviors among employees.

Table 3: Correlations for Uncertainty Avoidance and Idea Championing

		Uncertainty Avoidance	Idea Championing
Spearman's rho	Uncertainty Avoidance	Correlation Coefficient	.514
		Sig. (2-tailed)	.000
		N	356
Idea Championing		Correlation Coefficient	1.000
		Sig. (2-tailed)	.000
		N	356

Source: SPSS Output, 2025

Research Question 3: What is the relationship between uncertainty avoidance and idea championing in petrochemical companies in Rivers State, Nigeria?

The analysis of the relationship between uncertainty avoidance and idea championing in petrochemical companies in Rivers State, Nigeria, using Spearman’s Rank-Order Correlation, indicates a moderate and positive correlation ($\rho = 0.514$). This implies that employees who prefer clear procedures, structured environments, and defined responsibilities are more inclined to actively promote and advocate for their innovative ideas within the organization. Such employees, feeling secure within predictable work settings, are more likely to engage stakeholders, seek necessary support, and drive the implementation of new initiatives. The statistical significance of this relationship ($p = 0.000 < 0.05$) confirms its reliability and leads to the rejection of the null hypothesis in favor of the alternative. Therefore, it is concluded that there is a significant relationship between uncertainty avoidance and idea championing, emphasizing the value of structured organizational systems in fostering both innovation and the proactive pursuit of change within the petrochemical sector in Rivers State.

Discussion of Findings

The study revealed a moderate and positive relationship between uncertainty avoidance and the dimensions of innovative work behavior idea generation, opportunity exploitation, and idea championing among employees in petrochemical companies in Rivers State, Nigeria. Employees working in structured environments with clear expectations and manageable ambiguity were more inclined to generate new ideas, take initiative, and promote innovations. This suggests that when organizations strike a balance between structure and flexibility, they provide the psychological safety and clarity needed to foster creativity, initiative, and innovation. A supportive climate that accommodates uncertainty without overwhelming rigidity can significantly enhance the innovative capacity of employees, contributing to operational improvements and competitive advantage.

These findings are consistent with the Resource-Based View (RBV) theory, which emphasizes internal organizational capabilities such as innovation-enabling cultures as key strategic assets.

Organizations that effectively manage uncertainty avoidance can develop their workforce as a source of sustained competitive advantage. This conclusion is supported by the work of Hasan et al. (2020), whose study of government employees similarly found that employees in moderately structured settings exhibited stronger job performance and motivation. Their results affirm that clear guidelines combined with an allowance for individual initiative promote productivity and innovation. Therefore, cultivating a culture with moderate uncertainty avoidance is instrumental in transforming innovative behavior into organizational growth and resilience.

CONCLUSION AND RECOMMENDATIONS

The study concludes that uncertainty avoidance plays a significant and positive role in shaping innovative work behavior within petrochemical companies in Rivers State. Specifically, structured work environments that offer clarity and reduce ambiguity promote employees' engagement in idea generation, opportunity exploitation, and idea championing. These findings suggest that while excessive rigidity may hinder creativity, a balanced level of uncertainty avoidance fosters a supportive climate where employees feel secure to explore, develop, and advocate for innovative ideas. Therefore, managing uncertainty through well-defined yet flexible organizational systems can enhance innovation and contribute to sustained organizational effectiveness. Based on the influence of uncertainty avoidance on innovative work behavior measures namely idea generation, opportunity exploitation, and idea championing the following recommendations are made:

1. To enhance idea generation, organizations should implement clear yet flexible guidelines that reduce ambiguity in work tasks while still encouraging creativity and experimentation.
2. To promote opportunity exploitation, management should establish structured systems that support proactive behaviors, enabling employees to recognize and act on potential improvements within a stable and predictable environment.
3. To foster idea championing, leadership should create a supportive organizational climate that encourages employees to advocate for their ideas, providing defined channels and resources for promoting innovation within structured frameworks

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