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## Research Article

### Assessing The Impact of ISO 9001:2015 Implementation on the Service Delivery of The National Irrigation Administration (NIA) Regional Office VIII

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#### ABSTRACT

This study assesses the impact of ISO 9001:2015 implementation on service delivery and operational efficiency at the National Irrigation Administration (NIA) Regional Office VIII. A descriptive research design was employed, utilizing both quantitative and qualitative methods. Data were collected from **312 internal and external stakeholders** through stratified sampling. Descriptive Statistics, and Analysis of Variance (ANOVA) evaluated operational efficiency and stakeholder satisfaction. Key findings show that **65% of respondents** reported improvements in operational efficiency, particularly through standardized processes that streamlined workflows. However, **48% indicated that additional documentation requirements** slowed down operations. In terms of service delivery, **35% of respondents observed greater consistency and reliability**, while **31% experienced delays due to the time-consuming nature of compliance procedures**. Despite these gains, challenges such as resource constraints and resistance to change limited full adoption, particularly among senior management.

The study highlights that while ISO 9001:2015 enhanced both operational efficiency and service delivery, the increased documentation burden and procedural complexity introduced operational slowdowns. These findings offer valuable insights into the dual impact of ISO 9001:2015 in public sector organizations, illustrating its potential for improving service delivery while underscoring the challenges of maintaining efficiency amid compliance demands.

**Keywords:** *ISO 9001:2015, Service Delivery Efficiency, Public Sector, Operational Efficiency, Stakeholder Satisfaction, National Irrigation Administration*

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## **Introduction**

In an increasingly interconnected and competitive world, public sector organizations are under pressure to deliver high-quality services efficiently.

The study of Magno and Polancos (2023) emphasized that global trends demonstrate a rising implementation of international standards, notably the ISO 9001:2015, known as the Quality Management System (QMS), which prioritizes continuous improvement and customer satisfaction. Numerous governments globally, including Latvia, acknowledge the importance of optimizing procedures and enhancing transparency in service delivery.

The works of Katelo, Kokina, and Raščevskis (2022) stated that different frameworks for quality management like Service Quality (SERVQUAL) have been considered in this context. Embracing global benchmarks such as ISO 9001:2015 highlights the push for ongoing enhancements and effective operations, in service delivery. This is in connection to the Lerio (2023) which underscored that ISO 9001:2015 has successfully enhanced operational efficiency and stakeholder engagement in both corporate and public sectors. However, the study of Balahadia et al. (2022) supports the works of Bravi et al. (2019), Sanchez-Lizarraga et al. (2020), and Valmohammadi and Kalantari (2015), stating that the implementation of such standards often presents challenges, including organizational resistance, resource constraints, and the need for cultural shifts within institutions.

In the Southeast Asian region, the public sector has increasingly recognized the importance of QMS. Hamid (2021) and Rahim and Asaad (2018) explored the implementation of ISO 9001:2015 in countries like Malaysia, Thailand, and Indonesia. Various government agencies have adopted it to enhance transparency, to streamline service processes, and to meet stakeholder expectations.

David and Santos (2021) noted that the Philippine Administrative Order (AO) No. 2016-1, issued on 12 May 2016, is a significant legislative framework. It mandates the implementation of ISO-aligned documentation of QMS across government agencies. This order establishes a QMS and links ISO certification to the

Performance-Based Bonus (PBB) for government employees, thereby incentivizing compliance and adherence to quality standards. However, there remains a lack of empirical evidence on how ISO 9001:2015 has specifically impacted service delivery efficiency and stakeholder satisfaction within public sector organizations like the National Irrigation Administration (NIA).

Balucio and Badoy (2023) examined the implementation of ISO 9001:2015 in the construction sector in Davao City, finding that employee preparedness and engagement played a crucial role in the success of ISO initiatives. This strong correlation between preparedness and engagement underscores the importance of involving employees in ISO implementation processes to ensure its effectiveness. While their study focused on the private sector, these findings are highly relevant to public sector organizations like NIA, where employee involvement in ISO 9001:2015 implementation could similarly influence service delivery and operational efficiency. Understanding how employee engagement contributes to the success of ISO 9001:2015 is crucial for enhancing service delivery in organizations like NIA, which face both operational and service challenges.

This study focuses on NIA, which plays a critical role in supporting agricultural productivity by providing reliable irrigation services to farmers across the country. As a governmental entity, NIA is responsible for the prompt and effective provision of irrigation services, especially in its regional offices, including NIA Regional Office VIII (NIA, n.d.). With the increasing demand for improved service delivery and operational consistency, NIA adopted ISO 9001:2015 to enhance its internal processes and meet stakeholder expectations. However, the actual impact of this implementation on service delivery efficiency, particularly in NIA Regional Office VIII, has yet to be fully explored.

The objective of this research is to assess the extent to which ISO 9001:2015 has improved service delivery and operational efficiency at NIA Regional Office VIII. While several studies have examined the general benefits of ISO 9001:2015 in public administration, only a few have addressed its specific effects within the Philippine context, particularly in agencies

responsible for critical infrastructure services like the irrigation sector. The study evaluated how ISO 9001:2015 influenced operational processes, stakeholder satisfaction, and organizational culture, offering a balanced approach to understanding the standards implementation.

The compelling need for this study arises from the lack of localized research on the effects of ISO 9001:2015 within NIA and similar public agencies. By bridging this gap, the study intends to contribute valuable insights into how QMS can be optimized to improve public service delivery in the Philippines.

Furthermore, the findings of this study will fill a gap in localized research on the implementation of ISO 9001:2015 within NIA and similar public agencies. By examining the impact of this standard on public service delivery, the study aims to provide actionable insights that can guide future improvements in quality management and operational frameworks. Ultimately, this research seeks to contribute to the enhancement of service delivery for the benefit of NIA's farmer-beneficiaries and the greater Filipino community.

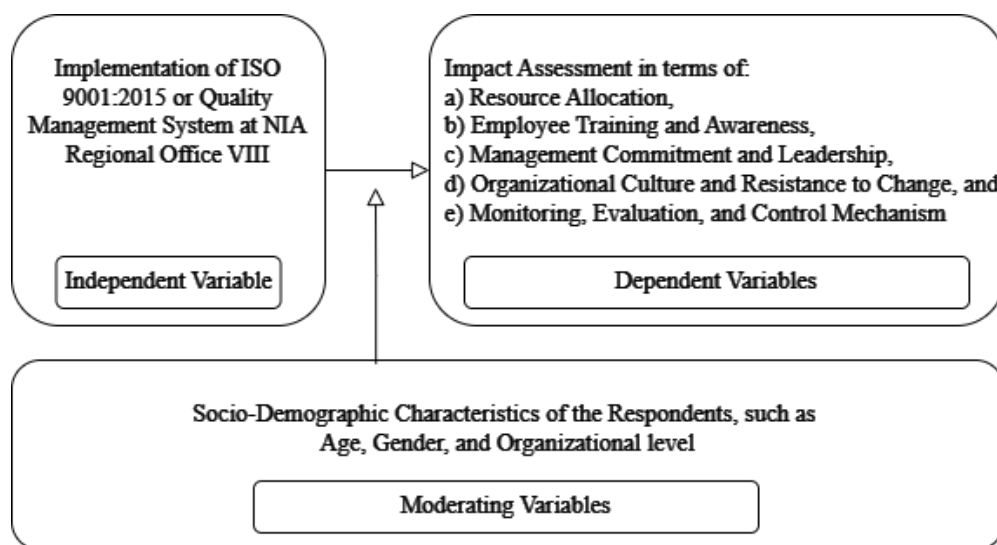


Figure 1. Schematic Diagram of the Conceptual Framework

The Schematic Diagram of the Conceptual Framework shows how the study connects key parts using the IV-MV-DV model (Independent Variable, Moderating Variables, and Dependent Variables).

The Independent Variable (IV) is the implementation of ISO 9001:2015 at NIA Regional Office VIII. The Dependent Variables (DVs) affected by this include: Resource Allocation, Employee Training and Awareness, Management Commitment and Leadership Organizational Culture and Resistance to Change, Monitoring, Evaluation, and Control Mechanisms.

Moderating Variables (MVs), like age, gender, and organizational level, may change how different people are affected by the implementation.

This framework helps assess how ISO 9001:2015 influences service delivery, considering individual differences.

## Methodology

### Research Design

This study used Descriptive Research to determine, describe, and explain the relationships of the fundamental variables of the study. The researchers used this type of study to assess the impact of ISO 9001:2015 implementation on service delivery efficiency within the NIA Regional Office VIII. This design facilitated the collection of quantitative data to provide a comprehensive overview of the effects of the ISO implementation.

Quantitative data were gathered through surveys, which enabled the identification of trends that are relative to operational efficiency, stakeholder satisfaction, and specific challenges faced by the organization. Descriptive statistics were used to analyze these trends, offering insights into how different demographic factors, such as age, gender, and organizational level, influenced perceptions of ISO 9001:2015 implementation.

#### *Population and Sampling*

This study includes the participation of NIA Regional Office VIII employees to assess the impact of ISO 9001:2015 implementation on different aspects of the Agency. At present, NIA Regional Office VIII has a total population of more than 600 employees.

The Sample Size Calculator indicates that a minimum of **198 respondents** from the 716 population size in NIA Regional Office VIII is required to achieve a 90 percent confidence level with  $\pm 5$  percent margin error, ensuring a reliable assessment of the ISO 9001:2015 implementation. As of 1 October 2024, there are 312 respondents to the survey questionnaire. The study sample comprised internal and external stakeholders directly engaged with or impacted by the NIA's adoption of ISO 9001:2015 in delivering the Agency's functions and services.

A stratified sampling method was utilized to guarantee representation across various organizational levels: technical staff (154 respondents, 66 percent of 233 internal respondents), administrative staff (62 respondents, 27 percent of 233 internal respondents), middle management (10 respondents, four percent of 233 internal respondents), and senior management (seven respondents or three percent of 233 internal respondents), as well as external stakeholders (comprising farmer-beneficiaries, contractors, politicians, and other government entities, totaling 79 respondents).

#### *Research Limitations*

However, it is important to acknowledge that while this sample size provides a broad representation of stakeholders directly impacted by ISO 9001:2015, limitations regarding generalizability may arise. The findings are

reflective of NIA Regional Office VIII specifically and may not fully represent the experiences of other NIA Regional Offices or government entities. Future studies may consider a larger sample size or include other regional offices for broader applicability.

#### *Research Instrument*

A self-constructed survey questionnaire was employed to gather quantitative data on the key variables of the study, including awareness of ISO 9001:2015, operational efficiency, and stakeholder satisfaction. The survey questions were aligned with the research objectives and were pretested to ensure clarity and relevance.

The research instrument was reviewed and validated by an expert in the academe. All comments and recommendations for improvement were incorporated. The use of Google Forms facilitated efficient data collection and management, ensuring the accuracy of the data gathering.

#### *Data Gathering Procedure*

The survey questionnaire was created using Google Forms. The link was distributed online using emails, social media, and text messaging to improve participant convenience and accessibility. The survey was available for three days (29 September 2024 to 1 October 2024), with further reminders sent to non-respondents to ensure a satisfactory response rate.

All responses were securely saved in password-protected folders and Google Drive, with participant identities, anonymized to ensure secrecy. Participating in this study was voluntary, and all participants were mandated to sign an informed consent form before engaging in the survey.

Quantitative data were collected using a structured survey questionnaire distributed to the selected stakeholders. The survey was designed to assess various dimensions of ISO 9001:2015 implementation, including operational efficiency, stakeholder satisfaction, and organizational culture. The questionnaire was pre-tested to ensure clarity and relevance before distribution, and responses were gathered through both online and paper-based methods

to accommodate different stakeholder preferences.

Qualitative data were collected through open-ended questions within the survey, as well as semi-structured interviews conducted with selected stakeholders, including senior management and key external partners. This provided an in-depth understanding of the challenges and successes of ISO 9001:2015 implementation.

#### *Data Analysis Procedure*

All gathered data were first validated for accuracy and completeness. The said data were analyzed using the *Data Analysis ToolPak in Microsoft Excel*, as well as descriptive statistics such as Measures of Central Tendency and Measures of Spread (Variability or Dispersion), along with statistical tests like Analysis of Variance (ANOVA). This is to examine differences across groups and relationships between key variables, such as awareness of ISO 9001:2015 and operational efficiency.

For the qualitative data, a thematic analysis was conducted to identify patterns and key themes related to ISO 9001:2015 implementation. The data were coded using open coding techniques, where responses were initially examined and categorized into broad themes. These themes were then refined into specific codes based on recurrent topics such as resource constraints, resistance to change, and process improvements.

The findings were analyzed which will serve as the basis in developing relevant conclusions and recommendations of the study.

#### *Ethical Considerations*

The study gained approval from respondents by including a confidentiality statement and following the Data Privacy Act of the Philippines (Republic Act No. 10173, series of

2012). All collected personal information were treated with utmost confidentiality and will be used for academic purposes only. Respondents were given the opportunity, including the ability to access, revise, and gain a copy of their submitted data at any time using Google Forms. Security measures were put in place to protect the data, and it was kept only as long as needed. After the research was completed, the data was securely stored for future reference and/or disposed of in line with the Data Privacy Act.

## **Results and Discussion**

### *Results Overview*

This chapter presents the findings of the research, which were aligned with the study's objectives regarding the implementation of ISO 9001:2015 at the NIA Regional Office VIII. The results provide key demographic insights into the internal and external stakeholders who participated in the survey.

Additionally, the discussions addressed respondents' levels of awareness, the challenges encountered, and their overall satisfaction with the ISO 9001:2015 implementation. The presentation of data was supported by statistical analyses, with summary tables and figures utilized where necessary to highlight significant results. Longer tables were avoided in favor of detailed textual explanations to ensure clarity in discussing the findings.

### *Demographic Profile of the Respondents*

A total of 312 respondents participated in the survey, encompassing a combination of internal and external stakeholders of NIA Regional Office VIII.

Table 1 summarizes the demographic profile of respondents, detailing stakeholder categories, age, gender, and years of experience. These criteria offer insight into the variety of perspectives collected in this study.

*Table 1. Demographic Distribution of the Respondents in the ISO 9001:2015 Survey at NIA Regional Office VIII*

<b>Demographic Factor</b>	<b>Frequency (All)</b>	<b>Frequency (NIA)</b>	<b>Percentage (%)</b>	<b>Rank</b>
<b>Role in NIA Regional Office VIII</b>				
Regional Office VIII Employee	233	233	74.68	1
Farmer Beneficiary	8	-	2.56	3

Demographic Factor	Frequency (All)	Frequency (NIA)	Percentage (%)	Rank
Contractor	8	-	2.56	4
Other Government Representative	60	-	19.23	2
<b>NIA Organizational Level</b>				
Administrative Staff	-	62	27	2
Middle Management	-	10	4	3
Senior Management	-	7	3	4
Technical/Operations Staff	-	154	66	1
<b>Age Group</b>				
18-25 Years Old	36	29	11.54	4
26-35 Years Old	139	94	44.55	1
36-45 Years Old	71	55	22.76	2
46-55 Years Old	46	40	14.74	3
56 Years Old and Above	20	15	6.41	5
<b>Gender</b>				
Female	144	102	46.15	2
Male	166	131	53.21	1
Prefer not to say	2	-	0.64	3
<b>Tenure - Years of Experience in NIA (Work/Beneficiary)</b>				
1-3 Years	69	55	22.12	3
4-7 Years	76	52	24.36	2
8-10 Years	31	26	9.94	5
Less than 1 Year	45	21	14.42	4
More than 10 Years	91	79	29.17	1
<b>Total Respondents</b>	<b>312</b>	<b>233</b>		

The demographic profile of the respondents highlights the diversity among NIA employees and external stakeholders, such as farmer-beneficiaries, contractors, and media representatives. Most of the respondents (74.68 percent) are employees of NIA Region VIII, who are the key players in the implementation of ISO 9001:2015. Other stakeholders, including government representatives (19.23 percent), farmer-beneficiaries, and contractors (each 2.56 percent), also provide relevant perspectives on how the quality management system affects service delivery efficiency across the organization's operational spectrum.

Age distribution shows that the largest group of respondents is between 26-35 years old (44.55 percent), followed by those aged 36-45 (22.76 percent). This age structure suggests that most respondents are in the early to mid-stage of their careers, which may indicate an openness to adapting to operational changes introduced by ISO 9001:2015. On the other hand, those in the 46-55 and 56+ age groups,

though smaller in percentage, likely bring valuable institutional knowledge and experience to the implementation process.

The gender distribution, which is relatively balanced with 53.21 percent male and 46.15 percent female respondents, suggests that gender does not play a significant role in differing perceptions of the ISO 9001:2015 QMS. This balance ensures a representative understanding of the system's effectiveness from both perspectives.

In terms of tenure, the analysis focuses on how long-term employees (those with over 10 years of experience, making up 29.17 percent of respondents) may perceive the implementation of ISO 9001:2015 differently from newer employees (with 1-3 years of experience, accounting for 22.12 percent).

#### *Effectiveness of ISO 9001:2015 Integration Across Demographic Groups*

The following data illustrates the effectiveness of ISO 9001:2015 integration across

various demographic groups (NIA organizational level, age group, gender, and tenure) in terms of Perception Factors (PF) 1: awareness and understanding, PF 2: process integration,

PF 3: training and development, PF 4: communication and coordination, and PF 5: monitoring and evaluation, as analyzed using One-Way ANOVA.

*Table 2. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Effectiveness by Organizational Level*

PF	Mean				F Value	P Value	F Critical	Significance
	AS	MM	SM	TS				
PF 1	3.96	4.12	3.63	4.05	1.09	0.36	2.64	No
PF 2	4.1	4.12	4	4.18	0.33	0.80	2.64	No
PF 3	3.84	3.74	3.57	3.86	0.40	0.75	2.64	No
PF 4	4.06	3.83	3.96	4.09	0.50	0.68	2.64	No
PF 5	4.09	4.26	4.03	4.18	0.44	0.72	2.64	No
<b>Average</b>	<b>4.01</b>	<b>4.01</b>	<b>3.84</b>	<b>4.07</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** AS - Administrative Staff; MM - Middle Management; SM - Senior Management; and TS - Technical/Operations Staff

In terms of organizational level analysis, technical and operations staff, along with middle management and administrative staff, exhibited greater engagement with ISO 9001:2015 processes. In contrast, senior management reported the lowest levels of awareness and integration, suggesting that employees directly involved in day-to-day operations

are more cognizant of and engaged with the quality management processes than those in higher-level managerial positions.

However, the differences are not statistically significant in terms of the identified PFs, implying that ISO 9001:2015 is uniformly perceived as effective across the entire organization, regardless of job position or hierarchy.

*Table 3. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Effectiveness by Age Group*

PF	Mean					F Value	P Value	F Critical	Significance
	18-25	26-35	36-45	46-55	56-UP				
PF 1	3.80	3.96	4.18	3.99	4.25	2.16	0.08	2.41	No
PF 2	4.19	4.13	4.17	4.08	4.25	0.26	0.90	2.41	No
PF 3	3.77	3.78	3.96	3.77	4.17	1.41	0.23	2.41	No
PF 4	4.09	4.05	4.13	3.96	4.20	0.49	0.74	2.41	No
PF 5	4.20	4.16	4.15	4.08	4.24	0.26	0.90	2.41	No
<b>Average</b>	<b>4.01</b>	<b>4.02</b>	<b>4.12</b>	<b>3.98</b>	<b>4.22</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

The results indicate that age does not significantly influence employees' perceptions of ISO 9001:2015 implementation at NIA Regional

Office VIII. Across all age groups, the mean scores for each PFs remain relatively consistent, suggesting that the implementation of

ISO 9001:2015 is perceived similarly by employees regardless of their age, suggesting that ISO practices have been effective in reaching employees of all age groups.

However, as shown in Table 3, employees aged 56 and above, as well as those with 8-10

years of experience, reported significantly higher levels of awareness, integration, and satisfaction with ISO 9001:2015 compared to younger employees (aged 18-25) and those with fewer years of experience.

Table 4. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Effectiveness by Gender (Male and Female)

PF	Mean		F	P	F	Significance
	M	F	Value	Value	Critical	
PF 1	3.99	4.04	0.30	0.59	3.88	No
PF 2	4.21	4.09	1.86	0.17	3.88	No
PF 3	3.84	3.85	0.02	0.88	3.88	No
PF 4	4.08	4.06	0.07	0.80	3.88	No
PF 5	4.19	4.13	0.60	0.44	3.88	No
<b>Average</b>	<b>4.06</b>	<b>4.03</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

Based on the ANOVA Analysis results in Table 4, there are no statistically significant differences between male and female perceptions across all five PFs related to the effectiveness of

ISO 9001:2015. This suggests that gender does not play a significant role in shaping the perceptions of ISO 9001:2015 implementation among NIA Regional Office employees.

Table 5. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Effectiveness by Tenure - Years of Experience in NIA

PF	Mean					F	P	F	Significance
	1-3	4-7	8-10	<1	>10	Value	Value	Critical	
PF 1	3.98	3.90	4.20	3.79	4.12	1.87	0.12	2.41	No
PF 2	4.23	3.97	4.32	4.20	4.14	1.65	0.16	2.41	No
PF 3	3.82	3.65	4.17	3.73	3.91	2.48	0.05	2.41	Yes
PF 4	4.11	3.99	4.22	4.05	4.04	0.57	0.69	2.41	No
PF 5	4.21	4.05	4.32	4.22	4.11	0.98	0.42	2.41	No
<b>Average</b>	<b>4.07</b>	<b>3.91</b>	<b>4.25</b>	<b>4.00</b>	<b>4.06</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

Table 5 indicates that, across most PFs, employees with varying years of experience have similar PFs of the effectiveness of ISO 9001:2015 implementation at NIA. However, a significant difference is observed in Training

and Development (PF 3), suggesting that employees with different experience levels have varying perceptions of the adequacy and effectiveness of ISO-related training and development activities. This could indicate that more



attention is needed to ensure that training is effective and consistent for all employees, regardless of tenure or years of experience in NIA. In terms of monitoring and evaluation, responses were consistent across most groups, with employees aged 56 and above and those with 8-10 years (4.25) of experience reporting the highest levels of engagement.

The lack of significant differences in the other factors suggests that NIA has effectively communicated and implemented ISO 9001:2015 across the organization, ensuring consistent perceptions among employees with diverse levels of experience.

#### Challenges in ISO 9001:2015 Implementation

The following data illustrate the challenges of ISO 9001:2015 implementation across various demographic groups (NIA organizational level, age group, gender, and tenure) in terms of Perception Factors (PF) 1: resource allocation, PF 2: integration into operational processes, PF 3: Employee Training and Awareness, PF 4: management commitment and leadership, and PF 5: monitoring, evaluation, and feedback mechanisms, as analyzed using One-Way ANOVA.

Table 6. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Challenges by Organizational Level

PF	Mean				F Value	P Value	F Critical	Significance
	AS	MM	SM	TS				
PF 1	3.82	3.96	3.89	3.89	0.22	0.89	2.64	No
PF 2	3.63	3.76	3.74	3.77	0.59	0.62	2.64	No
PF 3	3.95	4.36	3.86	4.07	1.55	0.20	2.64	No
PF 4	3.91	3.90	3.60	3.96	0.77	0.51	2.64	No
PF 5	4.03	4.12	3.97	4.09	0.19	0.90	2.64	No
<b>Average</b>	<b>3.87</b>	<b>4.02</b>	<b>3.81</b>	<b>3.96</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** AS - Administrative Staff; MM - Middle Management; SM - Senior Management; and TS - Technical/Operations Staff. 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

Table 6 reveals that across all five PFs, there are no statistically significant differences in the perceptions of employees from different organizational levels regarding ISO 9001:2015 implementation. This indicates that the implementation of ISO 9001:2015 is perceived consistently across all levels of the organization, from Administrative Staff to Senior Management.

The relatively uniform perceptions imply that ISO practices, such as awareness, process

integration, training, communication, and monitoring, are being effectively and consistently communicated and implemented throughout the organization. Even though Middle Management average scores are slightly higher in training and development (PF3), the differences are not statistically significant, further supporting the idea of overall consistency across organizational levels.

Table 7. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Challenges by Age Group

PF)	Mean					F Value	P Value	F Critical	Significance
	18-25	26-35	36-45	46-55	56-UP				
PF 1	3.98	3.87	3.95	3.73	3.79	1.01	0.40	2.41	No

PF)	Mean					F	P	F	Significance
	18-25	26-35	36-45	46-55	56-UP	Value	Value	Critical	
PF 2	3.76	3.69	3.79	3.68	3.88	0.42	0.79	2.41	No
PF 3	4.15	4.03	4.05	3.95	4.11	0.48	0.75	2.41	No
PF 4	4.06	3.86	3.97	3.94	3.99	0.66	0.62	2.41	No
PF 5	4.17	4.00	4.12	4.07	4.12	0.48	0.75	2.41	No
<b>Average</b>	<b>4.02</b>	<b>3.89</b>	<b>3.98</b>	<b>3.87</b>	<b>3.98</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

The Table 7 suggests that employees of all ages—whether younger or older—have a consistent understanding of ISO 9001:2015. This suggests that the organization has successfully implemented the system in a way that reaches all employees equally, ensuring that everyone is on the same page when it comes to awareness, training, and process management.

Table 8. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Challenges by Gender (Male and Female)

PF	Mean		F	P	F	Significance
	M	F	Value	Value	Critical	
PF 1	3.91	3.84	0.65	0.42	3.88	No
PF 2	3.73	3.73	0.00	0.96	3.88	No
PF 3	4.04	4.05	0.00	0.96	3.88	No
PF 4	3.99	3.89	1.31	0.25	3.88	No
PF 5	4.14	4.02	1.89	0.17	3.88	No
<b>Average</b>	<b>3.96</b>	<b>3.91</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

The overall average scores for both males (3.96) and females (3.91) are very close, and none of the factors show statistically significant differences between male and female employees. This suggests that ISO 9001:2015 implementation is perceived similarly by both genders in terms of awareness, process integration, training, communication, and monitoring. The organization's efforts to ensure inclusivity and uniformity in the application of ISO 9001:2015 are reflected in the consistent perceptions across gender groups.

Table 9. Summary of NIA Regional Office Employees' Perceptions on ISO 9001:2015 Challenges by Tenure - Years of Experience in NIA

PF	Weighted Mean (WN)					F	P	F	Significance
	1-3	4-7	8-10	<1	>10	Value	Value	Critical	
PF 1	3.99	3.78	3.91	3.89	3.84	0.83	0.51	2.41	No
PF 2	3.75	3.59	3.84	3.63	3.80	1.00	0.41	2.41	No
PF 3	4.11	3.92	4.13	4.12	4.03	0.85	0.50	2.41	No
PF 4	3.97	3.79	4.10	3.96	3.94	1.21	0.31	2.41	No

PF	Weighted Mean (WN)					F Value	P Value	F Critical	Significance
	1-3	4-7	8-10	<1	>10				
PF 5	4.13	3.88	4.26	4.05	4.10	1.81	0.13	2.41	No
<b>Average WN</b>	<b>3.99</b>	<b>3.79</b>	<b>4.05</b>	<b>3.93</b>	<b>3.94</b>				

**Assumption:** Significance Level is 0.05. If the P-Value is less than 0.05, the differences between the groups (demographic group) are *statistically significant*. If the P-Value is greater than 0.05, the differences between the groups are *not significant*.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

The overall results indicate that there are no statistically significant differences in the perceptions of employees with varying years of experience (tenure) across all five PFs. This suggests that the implementation of ISO 9001:2015 at the NIA Regional Office is perceived consistently across employees, regardless of their tenure.

Employees with different levels of experience have similar views on ISO 9001:2015-related aspects, such as awareness, process integration, training, communication, and monitoring. The relatively consistent mean scores reflect the uniformity in how the system is understood and implemented throughout the organization.

The uniformity in the conducted analyses in perceptions suggests that the organization's ISO 9001:2015 practices are well-integrated into its culture, and employees across all demographics are aligned in their understanding and execution of ISO standards. This consistency across the board is a positive sign that NIA's ISO 9001:2015 implementation is equitable, inclusive, and effectively communicated to all employees, regardless of their position, age, gender, or tenure.

To further provide challenges on the challenges and examine the barriers in ISO 9001:2015 Implementation, a thematic analysis is employed.

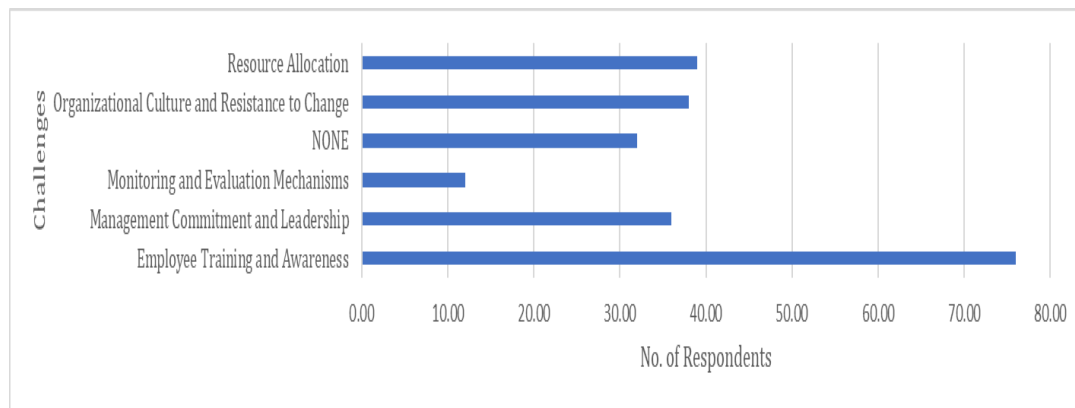


Figure 2. Suggested Solutions to Overcome Challenges in ISO 9001:2015 Implementation

Figure 2 outlines the key solutions suggested by respondents to overcome the challenges faced by NIA in implementing ISO 9001:2015. The most prominent solution is improving employee training and awareness, supported by 76 respondents. This indicates that insufficient training is a significant hurdle in effective implementation. Management commitment and leadership were also highlighted by

36 respondents, suggesting that strong leadership is necessary to drive the quality management initiatives forward. Additionally, resource allocation (39 respondents) and addressing organizational culture and resistance to change (38 respondents) were also identified as essential factors for overcoming challenges.

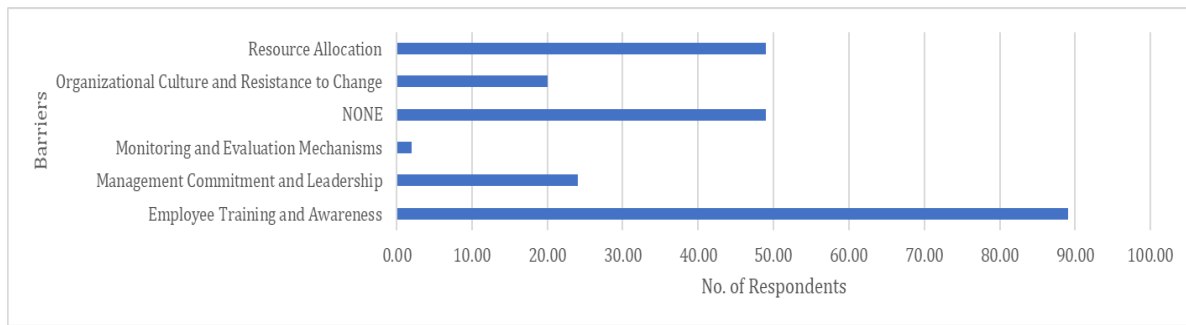
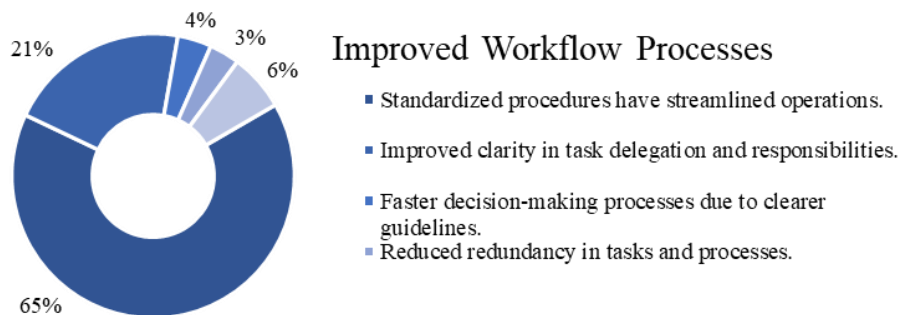


Figure 3. Identified Barriers Faced by NIA in ISO 9001:2015 Adoption

In Figure 3, the main barriers to the adoption of ISO 9001:2015 are presented. Employee training and awareness is the most significant barrier with 89 responses. Resource allocation (49 responses) and organizational resistance to change (20 responses) are also major obstacles. These findings closely mirror the solutions

proposed in Figure 3, indicating that improving training, leadership, and resources would be critical to addressing the barriers to successful implementation. Notably, management commitment was identified as a barrier by 24 respondents, further reinforcing the need for stronger leadership involvement.

#### Impact on Operational Efficiency and Service Delivery Operational Efficiency



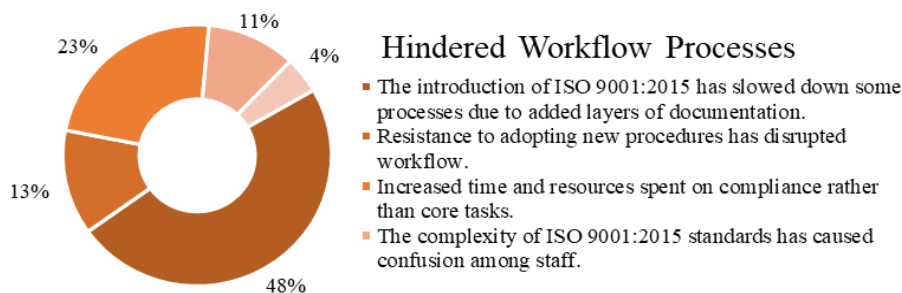
#### Improved Workflow Processes

- Standardized procedures have streamlined operations.
- Improved clarity in task delegation and responsibilities.
- Faster decision-making processes due to clearer guidelines.
- Reduced redundancy in tasks and processes.

Figure 4. Improvements of ISO 9001:2015 Implementation on Workflow Processes

Of the 233 respondents from NIA, 65 percent (151 respondents) indicated that standardized procedures have streamlined operations, suggesting that ISO 9001:2015 has had a substantial positive impact on operational efficiency

shown in Figure 4. Standardization reduces variability, improves process consistency, and creates a structured workflow, which are essential for improving service delivery in an organization like NIA.



#### Hindered Workflow Processes

- The introduction of ISO 9001:2015 has slowed down some processes due to added layers of documentation.
- Resistance to adopting new procedures has disrupted workflow.
- Increased time and resources spent on compliance rather than core tasks.
- The complexity of ISO 9001:2015 standards has caused confusion among staff.

Figure 5. Hindrances of ISO 9001:2015 Implementation on Workflow Processes

On the other hand, 48 percent (108 respondents) noted that the introduction of ISO 9001:2015 slowed down processes due to the additional documentation required as shown in Figure 5. While documentation ensures compliance and quality, the time and effort required to complete these steps slowed down the workflow, causing bottlenecks.

The implementation of ISO 9001:2015 at NIA has brought significant improvements in terms of operational efficiency by streamlining workflows, clarifying roles, and enhancing decision-making processes. However, these improvements are counter-balanced by

hindrances, particularly the slower processes due to additional documentation and resistance to new procedures, which disrupted workflows and introduced inefficiencies.

The two charts show the trade-off between the structured, standardized processes ISO 9001:2015 provides and the operational delays it causes due to compliance requirements and resistance to change. While most respondents appreciated the benefits of standardization, a significant portion found that the additional workload and complexity related to compliance negatively impacted their ability to perform core tasks efficiently.

### Service Delivery

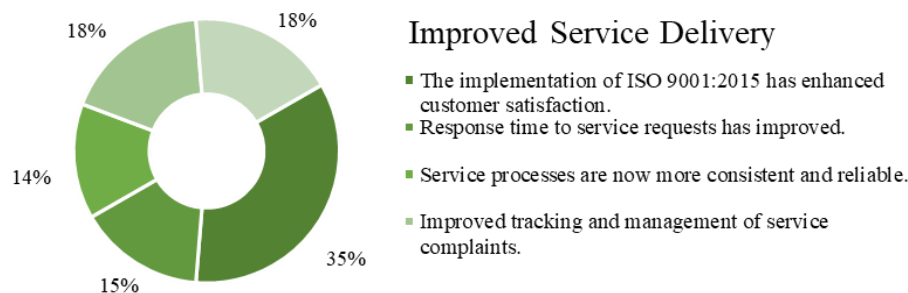


Figure 6. Improvements of ISO 9001:2015 Implementation on Service Delivery

For service delivery, 35 percent (27 respondents) noted that service processes are now more consistent and reliable under ISO 9001:2015. The structured and standardized

procedures have minimized variability and reduced errors, creating a more dependable service experience for NIA's stakeholders.

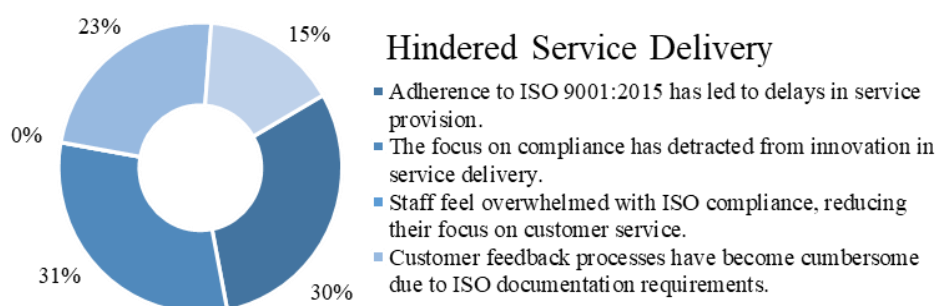


Figure 7. Hindrances of ISO 9001:2015 Implementation on Service Delivery

Based on the findings of the study, 31 percent (54 respondents) indicated that adherence to ISO 9001:2015 has led to delays in service provision. While documentation is important for compliance, the time-consuming nature of these processes has slowed down

NIA's ability to deliver services promptly. Moreover, 30 percent (53 respondents) noted that the focus on compliance has detracted from innovation, suggesting that the strict guidelines limit the flexibility and creativity in

service provision, stifling efforts to develop new and improved solutions for stakeholders.

ISO 9001:2015 has brought significant benefits to NIA in terms of service consistency, reliability, and customer satisfaction, making processes more predictable and manageable. However, these improvements are counter-balanced by the challenges posed by the system's documentation-heavy compliance requirements, which led to delays, reduced innovation, and staff fatigue. The dual impact of ISO 9001:2015 implementation is clear: while it

enhances the overall quality and consistency of service delivery, it also introduces procedural complexity that hinders NIA's ability to deliver services quickly and flexibly. This balance between adhering to standardized practices while maintaining operational efficiency is a common challenge in the implementation of ISO 9001:2015 (Bravi et al., 2019), where organizations must carefully manage the administrative workload to prevent it from detracting from service excellence.

*Table 10. NIA Regional Office VIII Respondents' Opinion on the Improvements and Challenges of ISO Implementation*

<b>Response Theme</b>	<b>Respondents</b>	<b>Percentage (%)</b>
<b>Improvement</b>		
Improved Documentation and Compliance	22	10
Process Streamlining and Efficiency	180	81
Reduction in Paperwork	2	1
Standardization and Consistency	17	8
<b>Challenges</b>		
Adjustment to New Norms and Change Resistance	6	3
Documentation Burden	187	84
Information Dissemination and Communication Gaps	4	2
Time Management and Constraints	24	11
	<b>221</b>	

NOTE: Only 221 out of the 312 total respondents have given their opinions on the Improvements and Challenges of ISO Implementation

The data from Table 10 reveals that the most significant improvement brought by ISO 9001:2015 is process streamlining and efficiency, with most of the respondents (180 out of 221) recognizing this benefit. Other notable improvements include improved documentation, enhanced compliance, and standardization and consistency, though these were mentioned by fewer respondents.

On the challenges side, the dominant issue is the documentation burden (highlighted by 187 respondents), indicating that maintaining extensive records and documentation is a major challenge under ISO 9001:2015. Time management and constraints were also noted as challenges by 24 respondents, while adjustment to new norms and information dissemination gaps were less frequently cited issues.

*Level of Awareness and Understanding of ISO 9001:2015 Among NIA Regional Office VIII Employees*  
*Table 11. NIA Regional Office VIII Respondents' Perception in the ISO 9001:2015 Implementation*

<b>Improvement</b>	<b>Average</b>	<b>Variance</b>
Awareness of the Implementation	3.39	0.98
Operational Understanding	3.35	0.92
Procedures or Processes Affected	3.42	1.08

NOTE: Only 233 out of the 312 total respondents have given their perceptions on the indicators.

Among the 221 respondents, the data reveals a predominantly favorable perception of ISO 9001:2015. Familiarity with the standard is moderate to high, evidenced by an average score of 3.39, indicating that the majority of respondents understand its purpose and the processes it influences within their departments. The operational understanding, with an average score of 3.35, indicates that employees possess a moderate level of confidence in implementing ISO 9001:2015 guidelines and ensuring compliance, although some may require additional assistance.

Regarding the impact on processes, respondents rated the improvements brought by ISO 9001:2015 at 3.42, noting enhancements in efficiency, communication, and accountability. Training is also viewed positively, with an average score of 3.42, reflecting confidence in the training received but hinting at a need for ongoing sessions to fully integrate the standard.

While ISO 9001:2015 is well-received, there is room for improvement in providing

additional training, communication, and guidance to ensure consistent implementation across all departments.

#### *Overall Stakeholder Satisfaction*

##### *NIA Region VIII Employee Satisfaction*

The analysis shows that there are no significant differences in satisfaction levels between the various aspects of ISO 9001:2015 implementation (operational process changes, work efficiency improvement, communication, and accountability). Employees generally feel similarly satisfied across all categories, with average ratings close to four out of five, indicating positive overall feedback on ISO 9001:2015's impact on the organization.

The study also examined the satisfaction levels of other external stakeholders, including contractors and government representatives, in relation to the effectiveness of ISO 9001:2015 implementation.

*Table 12. Summary External Stakeholders' Satisfaction*

External Stakeholders Satisfaction									
Particulars	Farmer			Contractor		Other Government			
	Quality Irrigation	Improved Communication	Customer Service	Contracting Process	Improved Communication	Project Management	More Transparent	Public Policy	Reliable Communication
Weighted Average	4.38	0.55	4.00	4.63	4.50	4.25	4.28	4.27	4.32
Variance	0.55	0.41	0.57	0.27	0.57	1.93	0.65	0.67	0.66

**Note:** Only 233 out of the 312 total respondents have given their perceptions on the indicators.

**Legend:** 4.01-5.00 - Strongly Agree; 3.01-4 - Agree; 2.01-3.00 - Neutral; 1.01-2.00 - Disagree; and 1.00 - Strongly Disagree

#### *Farmer Beneficiary Satisfaction*

Farmers expressed strong satisfaction with the quality of irrigation services provided, as reflected by a weighted average of 4.38 (strongly agree) as shown in Table 13. This indicates that the implementation of ISO 9001:2015 has been effective in improving irrigation quality, meeting their expectations. However, farmers rated improved communication poorly, with an average score of 0.55, which signifies a major area of concern.

The low score suggests that communication with farmers regarding irrigation issues,

updates, and procedures has not met their expectations. NIA may need to strengthen its communication channels and ensure that farmers are regularly informed and engaged to enhance their overall satisfaction.

#### *Contractor Satisfaction*

Contractors, as key stakeholders in the implementation process, showed high satisfaction with both the contracting process (4.63) and improved communication (4.50). The high scores in Table 13 suggest that contractors perceive the ISO 9001:2015 implementation as

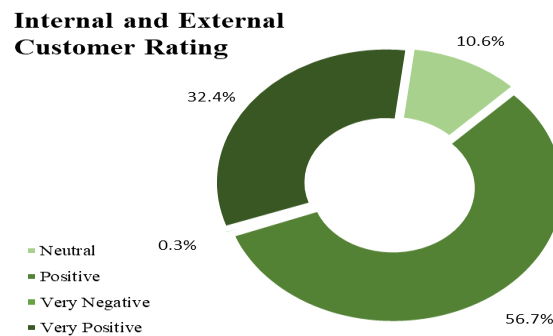
beneficial, particularly in streamlining the contracting process and ensuring better communication. This finding highlights the success of the ISO standards in improving operational efficiency and transparency in dealings with contractors. The relatively low variance (0.27 for the contracting process) indicates consistency in satisfaction across this group, reflecting a well-managed process with minimal discrepancies.

#### *Other Government and Political Stakeholder Satisfaction*

As shown in Table 13, other government representatives exhibited strong agreement

with public policy transparency (4.28) and reliable communication (4.32), both of which are critical for the effectiveness of inter-agency collaborations and public service delivery. However, project management received a lower score of 4.25 with a higher variance (1.93), indicating varied opinions among government stakeholders. While some may be satisfied, others could see room for improvement in project management processes. The variation suggests that NIA should take a closer look at its project management practices, possibly implementing more consistent procedures across regions or departments to meet expectations uniformly.

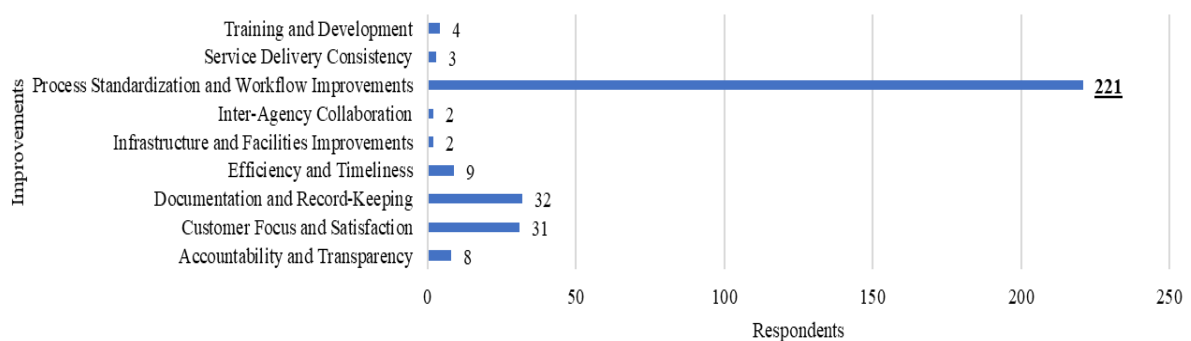
#### *Overall Impact of ISO 9001:2015 on Stakeholder Satisfaction*



*Figure 8. Internal and External Customer Rating*

Figure 8 shows the internal and external customer ratings, which indicates that most respondents were satisfied with their experience. Specifically, 56.7 percent of respondents rated their experience as very positive, while 32.4 percent provided a positive rating. A smaller proportion, 10.6 percent, gave a neutral rating, and only 0.3 percent rated their experience as

very negative. This data demonstrated that 89.1 percent of respondents expressed satisfaction, either positively or very positively, highlighting a generally favorable perception from both internal and external customers. The minimal percentage of negative feedback further emphasized the overall positive customer experience.



*Figure 9. Key Areas of Improvement in NIA's Services Following ISO 9001:2015 Implementation*



As shown in Figure 9, the most significant area of concern was "Process Standardization and Workflow Improvements" with 221 respondents highlighting this as a key area for enhancement. "Documentation and Record-Keeping" and "Customer Focus and Satisfaction" were also commonly cited, with 32 and 31 respondents, respectively, identifying these areas as needing improvement. Other areas

mentioned included "Efficiency and Timeliness" (nine respondents), "Accountability and Transparency" (eight respondents), "Training and Development" (four respondents), "Service Delivery Consistency" (three respondents), "Inter-Agency Collaboration" (two respondents), and "Infrastructure and Facilities Improvements" (two respondents).

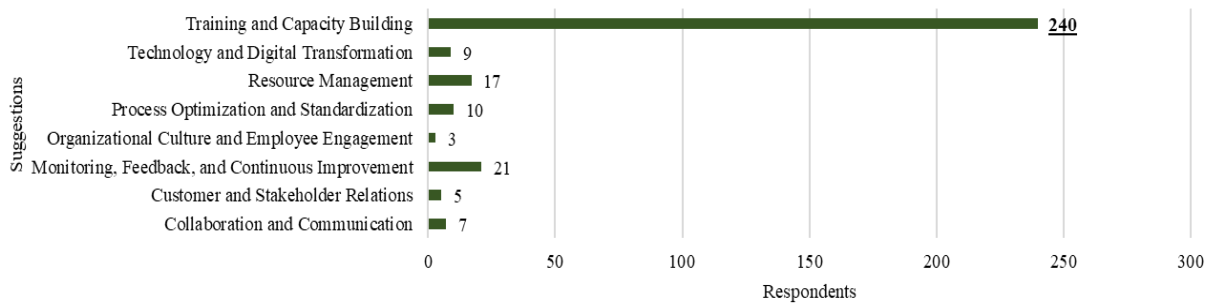


Figure 10. Key Challenges in NIA's Irrigation Services Following ISO 9001:2015 Implementation

Figure 10 provides the challenges identified by respondents, with "Process Standardization and Workflow Improvements" emerging as the most prominent concern, reported by 257 respondents. This was followed by "Documentation and Record-Keeping," which was highlighted by 26 respondents. Other notable challenges included "Training and Development," mentioned by 17 respondents, and "Efficiency and Timeliness," noted by two respondents. Additionally, "Service Delivery Consistency" and "Customer Focus and Satisfaction" were

both cited by four respondents, while "Accountability and Transparency" and "Infrastructure and Facilities Improvements" were each acknowledged by one respondent. The data indicated that the primary challenge for respondents was in streamlining processes and improving workflows, reflecting a need for internal structural adjustments. Challenges related to documentation, training, and service delivery also emerged, although these were less frequently cited compared to process-related concerns.

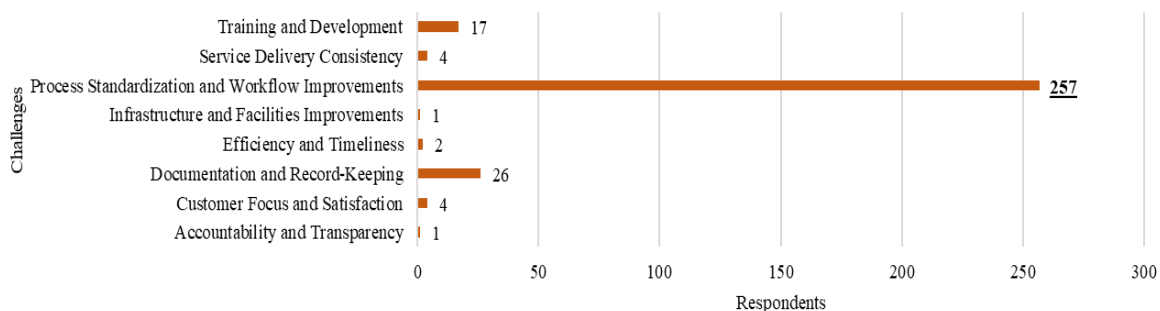


Figure 11. Suggestions for Enhancing NIA's Services Following ISO 9001:2015 Implementation

As shown in Figure 11, the respondents' suggestions to further enhance the NIA's services following the implementation of ISO 9001:2015. The most frequently mentioned

suggestion was "Training and Capacity Building," identified by 240 respondents. This indicates an urgent need for improved employee development and skills enhancement. Other

notable suggestions included "Monitoring, Feedback, and Continuous Improvement," cited by 21 respondents, and "Resource Management," highlighted by 17 respondents. Additionally, "Process Optimization and Standardization" was suggested by 10 respondents, while "Technology and Digital Transformation" received attention from nine respondents. Lesser, yet important, areas for improvement were "Collaboration and Communication" (seven respondents), "Customer and Stakeholder Relations" (five respondents), and "Organizational Culture and Employee Engagement" (three respondents).

## Conclusion

The study demonstrates that ISO 9001:2015 is effectively integrated into the operational processes of NIA Regional Office VIII. Employees, particularly those in technical roles and younger staff, show higher engagement and awareness of ISO processes. However, senior management and older employees exhibit lower levels of awareness, indicating the need for enhanced integration efforts at the managerial level. These findings suggest that younger, operationally focused employees adapt more readily to changes, while management requires additional focus to align with the standard.

The research identifies key challenges in implementing ISO 9001:2015, specifically related to resource allocation, employee training, and resistance to change. Resource constraints and documentation management pose significant barriers to the system's full adoption, which affects operational efficiency. This finding reinforces the importance of adequate resource management and leadership commitment for successful ISO implementation. Additionally, excessive documentation slows processes, highlighting the need to balance quality control and workflow efficiency.

ISO 9001:2015 enhances operational efficiency and service delivery at NIA Regional Office VIII. The standardization of processes reduces errors and improves service consistency, which positively influences stakeholder satisfaction. However, the increased documentation requirements introduce some delays, indicating a trade-off between maintaining high standards and optimizing operational speed.

Awareness and understanding of ISO 9001:2015 among NIA employees remain moderate. Technical staff and middle management demonstrate a better grasp of the system compared to senior management. This finding suggests that while ISO knowledge is widespread, targeted training for senior management is needed to ensure comprehensive integration of ISO practices across the organization.

Stakeholder satisfaction with ISO 9001:2015 is generally positive. Both internal and external stakeholders report improvements in service quality and operational efficiency following its implementation. However, communication strategies and service delays due to compliance requirements require further improvement. Addressing these issues would enhance the overall stakeholder experience, while maintaining the high standards set by ISO 9001:2015.

## Recommendation

**Strengthen Training and Awareness Programs for All Levels.** NIA should prioritize strengthening its training and awareness programs, as underscored by Domingues et al. (2019), especially for senior management, to ensure that all levels of the organization are fully engaged with ISO 9001:2015 processes. A **training needs analysis (TNA)** should be performed to evaluate the efficacy of the training programs. These programs should be tailored to address the specific needs of different employee groups, with a focus on improving managerial understanding and leadership involvement in quality management initiatives.

**Leverage Digital Solutions for Resource and Documentation Management.** To overcome the challenges related to resource allocation and documentation management, NIA should **explore adopting digital solutions** to streamline documentation processes and reduce administrative burden. Digital tools, such as **Document Management Systems (DMS)**, can facilitate easier store, organize, access, tracking, and updating of documents masterlist related to ISO 9001:2015 compliance. This will enhance operational efficiency and minimize delays caused by excessive paperwork, improving the overall service delivery in regional offices.

**Develop and Implement Change Management Strategies.** Given the challenges related to organizational resistance to change, NIA can serve as a case study for other organizations implementing ISO 9001:2015. Developing **robust change management strategies**, including clear communication plans and employee involvement in decision-making, will be essential for mitigating resistance and ensuring the successful global application of QMS. Organizations worldwide can benefit from adopting similar approaches to foster a culture that supports continuous improvement and adaptation to ISO standards. The challenges related to documentation management identified in this study suggest a broader issue that other organizations adopting ISO 9001:2015 may face.

**Global Adoption of Digital Transformation for Efficiency.** Globally, it is recommended that organizations explore **digital transformation strategies** to streamline documentation processes and reduce the administrative burden, as emphasized by Mokhtar et al. (2020), thereby maintaining the efficiency gains promised by QMS without compromising operational flexibility. NIA and similar organizations should invest in automated workflow systems and cloud-based platforms that enable real-time collaboration and monitoring of ISO-related documentation. This would also allow for scalability as the organizations grow, ensuring sustained compliance and efficiency improvements.

## Acknowledgement

First and foremost, we would like to humbly thank God for His unending guidance, strength, and grace that carried us through the entire journey of this research. Without His blessings, this work would not have been possible.

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