

The Research Workshop - NVivo on IPMI Institute

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Abstract. The workshop featured in The Research Workshop (Volume 12) at the IPMI Institute in June 11, 2025 is concerned with the application of NVivo for advanced qualitative data analysis in research. Participants are introduced to NVivo's main functions such as importation, organization, and coding of many forms of data including text documents, surveys, and audio and video material. The hands-on sessions of the workshop are focused on real applications such as coding scheme development, integration of categorical data, and advanced querying techniques for identifying and interpreting patterns. Modeled for researchers and faculty alike, the intention of the program is to create new ways to achieve efficient and rigorous analyses in qualitative research, geared toward the application of these methods in real-world situations across disciplines. The session will also provide an introduction to some of those new NVivo features that are AI-assisted and will discuss the opportunities to enhance the analysis process as well as some limitations.

Keywords: NVivo, Efficiency, Effectiveness, Research Workshop, Qualitative Data Analysis

1 Introduction

Qualitative research is key to understanding social, behavioral, and organizational phenomena that are usually very complex in nature. As soon as the size and complexity of the datasets increased, tools like NVivo became synonymous with qualitative researchers looking to manage, analyze, and interpret rich textual and multimedia data [1], [2]. The workshop provides researchers with a hands-on experience to master NVivo. This is the Research Workshop (Volume 12), held in the IPMI Institute, a leading institution for research in Indonesia. It is aligned with the institute's mission to develop academic research excellence and professional research capabilities in Indonesia [3] and beyond, and it was scheduled on June 11, 2025.

This report provides a description of the structure, objective, and outcomes of the workshop in terms of its curriculum, audience, and relevance to the state of modern qualitative research [4]. Emphasizing a combination of global best practices and local wisdom, the workshop takes the participants from theory to practice, equipping them with skills they can implement and an appreciative understanding of qualitative methodologies [5].

1.1 Objectives and Benefits of NVivo

- a. NVivo is an application for qualitative data analysis (QDA) software that mobilizes researchers to organize, manage, and analyze a considerable amount of unstructured data. Its principal objective is to support intensive and systematic qualitative research through efficient data management and analytical

processes. In particular, it aims:

- 1) Data management facilitation - at the heart of NVivo is to lay down a structured environment for housing and organizing forms of qualitative data such as interview transcripts, focus group discussions, field notes, social media content, and audio-visual sources. In fact, this ensures complete data integrity and easy access to data throughout the research process.
 - 2) Support for systematic coding and categorizing - coding data according to either themes, categories, or nodes is possible using NVivo. Its coding structure helps to identify various patterns, relationships, and emerging concepts containing systematic yet traceable processes in data analysis.
 - 3) A more analytic reach and transparency - one enhancement provided by NVivo is documentation of the decision to code, archive analytical notes, and memos. Such provision enhances replicability and transparency of qualitative research since conclusions can be derived and demonstrated.
 - 4) Incorporate qualitative and quantitative insights - this kind of theoretical mixing is also possible through mixed methods functionality offered in NVivo in the sense of taking into account numerical data, visual tools, and word frequency analysis-from qualitative and quantitative.
 - 5) Enabling the visualization and understanding - this goal also covers interpretation through models, graphics, and maps-NVivo's goal visual exploration helps in interpreting relationships and patterns in a straightforward way, leading to deeper insights among researchers.
- b. Benefits of NVivo Usage
- Practical and methodological gain from NVivo in qualitative and mixed-method research:
- 1) Enhanced Organization and Efficiency - with NVivo, analyzing large amounts of qualitative data becomes efficient: easily categorizing, searching, and retrieving certain points of information saves time and minimizes people's risk of loss or mismanagement.
 - 2) Improved Analysis Depth - innovative coding, text-search, and pattern recognition tools enable more nuanced data analysis. This allows for thematic and sub-thematic exploration at increasingly high levels of abstraction, thus producing meaningful interpretations.
 - 3) Triangulated and Integrated Data - the software allows different forms of data to be mixed-text, audio, video, and survey data-into triangulation of operations that weigh conclusions against evidence from different sources.
 - 4) Auditability and Transparency - if an activity is coded or an analysis is recorded using NVivo, it will always be stored in the software. This audit trail increases the transparency of the research process and helps ensure accountability in collaborative and multi-researcher projects.
 - 5) Collaboration and Team Cooperation - these multiuser projects will house NVivo, where research teams will be able to share coding structures, memos, and datasets, thus optimizing collaboration and consistency in qualitative analysis.
 - 6) Advanced Visualization Tools - it provides several means of visualizing data, such as creating word clouds, conducting cluster analysis, and drawing relationship maps to make complex data comprehensible and appealing to publication or stakeholder purposes.
 - 7) Flexibility Across Disciplines - this flexibility extends to many disciplines, covering social sciences to business, education, public health, and media studies. Content, discourse, and grounded theory analysis are just a few examples where NVivo can be implemented.

1.2 Workshop Objectives

The Research Workshop (Volume 12) fundamentally sets to achieve [2], [6], [7]; (1) skill development - equip participants with the technical expertise to use NVivo for importing, organizing, coding, and analyzing qualitative data, including text, audio, video, and survey responses; (2) methodological enhancement - provide a comprehensive understanding of qualitative research frameworks, including deductive and inductive coding approaches, and their application in NVivo; (3) practical application - enable participants to apply NVivo in real-world research scenarios, from developing coding schemes to generating actionable insights through advanced queries; (4) AI integration - introduce participants to AI-assisted tools within NVivo, such as automated coding and transcription features, and discuss their benefits and limitations; (5) networking and collaboration - foster a collaborative environment for researchers to share experiences, discuss challenges, and build professional networks within the IPMI Institute research community.



Figure 1. Research Workshop Vol 12

1.3 Significance of the Workshop

The Research Workshop (Volume 12) fulfills some of the urgent needs of the research community [2], [8]:

- Capacity Building: Hands-on training to NVivo to strengthen the ability of researchers to carry out qualitative research with more rigor and efficiency in Indonesia and beyond.
- Technological Advancement: As qualitative datasets are increasingly becoming complex, using tools like NVivo gets mandatory to handle large volumes of data, which includes multimedia content and social media content. Attendees will be acquainted with the cutting-edge features being introduced into NVivo, like AI-assisted coding, thereby preparing them for future research challenges.
- Local Relevance: In the spirit of being relevant to the Indonesian context, several case studies will be presented in the workshop that tackles the region's issues, such as sustainable business practices and social policy, especially in the light of IPMI's philosophy of doing impactful research.
- Networking Opportunities: Aiding collaboration among researchers, students, and professionals is strengthened through the workshop in conjunction with other IPMI events, which fortifies the local research ecosystem.

2 Literature Study

The Research Workshop (Volume 12): NVivo at the IPMI Institute in Jakarta, Indonesia, aimed to enhance researchers' capabilities in qualitative data analysis using NVivo, a leading software for managing and analyzing complex datasets. This literature review synthesizes key scholarly works on qualitative research methodologies, the role of NVivo in advancing research rigor, and its applications across disciplines, contextualizing the workshop's relevance [9], [10]. It draws on foundational texts, recent studies, and emerging trends in qualitative analysis, particularly in the Indonesian academic landscape, to underscore the workshop's objectives of equipping researchers with practical and theoretical expertise.

2.1 Qualitative Research Methodologies

Qualitative research seeks to understand human experiences, behaviors, and social contexts through interpretive methods such as interviews, focus groups, and textual analysis [11], [12]. Key methodologies include grounded theory, which builds theories from data; thematic analysis, which identifies patterns within data; and phenomenology, which explores lived experiences [11], [12]. These approaches require systematic organization and analysis of unstructured data, such as transcripts, videos, or social media content, to derive meaningful insights.

Emphasize the iterative nature of qualitative analysis, involving coding, categorizing, and synthesizing data to

construct narratives [10], [13]. This process is complex due to the volume and diversity of data, necessitating tools like NVivo to manage and analyze it effectively. The IPMI Institute workshop introduces participants to these methodologies, using NVivo to bridge theoretical frameworks with practical applications, ensuring researchers can handle diverse datasets relevant to their fields.

2.2 The Evolution of NVivo in Qualitative Research

NVivo as a transformative tool that enables researchers to organize, code, and query large datasets, including text, audio, video, and web content [14]. Its evolution reflects advancements in user interface, data integration, and analytical capabilities. For instance, NVivo now supports multimedia analysis and cloud-based collaboration, making it suitable for global research teams [15].

Studies highlight NVivo's versatility across disciplines. Some researchers utilized NVivo to analyze educational interview data, noting its ability to manage complex coding structures [16], [17]. In business research, they employed NVivo to study international business networks, leveraging its ability to handle multilingual and cross-cultural data [18]. These applications are particularly relevant to the IPMI Institute workshop, which includes case studies tailored to Indonesia's business and social contexts, such as consumer behavior and organizational studies.

2.3 Coding and Analytical Techniques in NVivo

Coding is the backbone of qualitative analysis, involving the segmentation and labeling of data to identify themes and patterns. Many others who like the qualitative research, outlines two coding cycles: first-cycle coding, for instance; descriptive and in-vivo, and second-cycle coding, for example, pattern and axial, which NVivo facilitates through its node-based system [19], [20]. Nodes allow researchers to categorize data hierarchically, enabling iterative refinement of codes [21]. The IPMI Institute workshop emphasizes these techniques, guiding participants through hands-on exercises to develop and refine coding schemes. NVivo's query tools, including text search, word frequency, and matrix coding, enhance analytical depth. Matrix coding to explore gender dynamics in organizational communication, demonstrating NVivo's ability to cross-tabulate qualitative and quantitative data [22], [23]. These tools are critical for the workshop's advanced sessions, where participants learn to generate actionable insights from complex datasets, such as market research surveys or policy documents.

2.4 NVivo in the Indonesian Research Landscape

Indonesia's research landscape is characterized by its focus on local challenges, such as sustainable development, digital economy, and social policy. NVivo to analyze social media data for consumer behavior in Indonesia's e-commerce sector through identifying trends in digital marketing [24], [25], NVivo to study community resilience in disaster-prone areas, emphasizing its role in policy analysis [26]. These studies reflect NVivo's relevance to the IPMI Institute workshop, which incorporates case studies addressing Indonesia-specific issues. Challenges in Indonesia include limited access to software and training, particularly in rural institutions [27], [28].

2.5 Intercoder Reliability and Collaborative Research

Collaborative research projects often involve multiple coders, requiring consistent coding practices, which emphasize intercoder reliability, where coders independently analyze data and compare results to ensure consistency. NVivo's coding comparison query calculates agreement percentages, helping teams refine their coding schemes [21]. The IPMI Institute workshop includes team-coding exercises, simulating real-world collaborative research scenarios, such as interdisciplinary studies in business or public health.

2.6 Pedagogical Approaches to NVivo Training

Effective NVivo training combines theoretical instruction with practical application. Some advocate for experiential learning, where participants apply NVivo to real datasets during training [29]. The IPMI Institute workshop adopts this approach, offering hands-on exercises with sample datasets, such as interview transcripts and social media posts, to build confidence. Facilitators at the workshop, emphasizes scaffolding learning by starting with basic coding and progressing to advanced queries, ensuring accessibility for novices and experts alike [30], [31].

2.7 Emerging Trends and Future Directions

The future of NVivo lies in its integration with emerging technologies, such as cloud computing and machine learning. Lumivero, the leading provider of data-intelligence solutions, predicts that NVivo's cloud-based platform will enhance remote collaboration, critical for global research teams [32]. Additionally, advancements in NLP and sentiment analysis could further automate qualitative insights, though human interpretation remains essential [33]. The IPMI Institute workshop explores these trends, preparing participants for evolving research landscapes while emphasizing critical evaluation of new tools.

2.8 Relevance to IPMI Institute's Mission

The IPMI Institute's commitment to research excellence, as seen in events like IdeaFest, aligns with the NVivo workshop's goals [34]. IdeaFest showcased student-led research in business and statistics, highlighting the need for advanced analytical tools [35]. The workshop builds on this by equipping participants with NVivo skills to conduct rigorous qualitative and mixed-methods research, contributing to Indonesia's academic and professional research ecosystem.

3 Methodology

The workshop promotes a balanced approach toward qualitative research that combines theoretical grounding with practical application. The sessions cover selected qualitative methodologies based on core reading from *Qualitative Data Analysis with NVivo* and *The Coding Manual for Qualitative Researchers* [19], [21]. Participants will learn the core functionalities of NVivo 12 to consists:

- a. Importation of various types of data (text, audio, video, and web content).
- b. Create and administer coding structures for thematic analysis of data.
- c. Text search, word frequency counts, and matrix coding to find patterns, visual outputs including word clouds and concept maps for presentation, and each workshop session encompasses practice sessions on sample datasets, ensuring that participants will leave confident using NVivo in their own work.

By the end of this workshop, participants able to:

- a. Assist in setting up and managing NVivo projects from data import to the final analysis.
- b. Construct coding schemes in keeping with their research objectives and implement them.
- c. Import quantitative data into qualitative projects for mixed-method analysis.
- d. Make use of advanced queries and visualization tools to disseminate their findings.
- e. Know some of the ethical and practical issues of using AI-assisted tools along with qualitative analysis.
- f. Develop a network of peers and mentors in the IPMI and wider research community.

3.1 Alignment with the Mission of IPMI Institute

Through events such as IdeaFest and The Research Workshop Volume 12, the institute is committed to nurturing and reaching research excellence among students and faculty. Following the successful participation of events, in which the research projects of students were shared in Research Methodology and Business Statistics, the Research Workshop Volume 12 is an NVivo training for IPMI Institute students and faculty so that they become well equipped to deal with contemporary business and social challenges, thereby getting aligned to the institutional mission of developing impactful and data-driven research [34], [35].

Although NVivo remains a powerful tool in research, issues may arise the following issues, such as; learning curve as the unacquainted users might find it hard to learn NVivo as it has a cumbersome interface. Beginner-friendly sessions are programmed into the workshop for all participants, while users are being supported on Windows, guidance will also be provided to Mac users, limitations of artificial intelligence, including but not limited to transcription validity and ethical concerns around automated coding.

3.2 Workshop Structure

The workshop focuses on a specific NVivo and qualitative research theme. The classes will integrate lectures with hands-on exercises and group discussions so the interests of different levels of participants, from beginners to advanced users, will be addressed.

- a. Introduction to Qualitative Research: Overview of qualitative research methodologies, including grounded theory, thematic analysis, and phenomenology. Participants explore when and why to use qualitative approaches.
- b. Getting Started with NVivo: Setting up a new project, importing data, such as; interviews, surveys, web content, and navigating the NVivo interface. Demonstrations use NVivo 12 for Windows.
- c. Basic Coding Techniques: Introduction to manual coding, creating nodes, and organizing data. Participants practice coding sample datasets, such as interview transcripts and social media content.
- d. Hands-On Exercise: Import and code a dataset provided by the workshop facilitators, followed by a group discussion on coding strategies.

3.3 Target Audience

The workshop caters to a mixed audience – the Academicians Researchers, which consists of Faculty members trying their hands at some qualitative or mixed-methods research in business, social sciences, education, or public health fields, current and past students of the IPMI Institute, especially those enrolled in Research Methodology and Business Statistics courses.

3.4 Qualitative Research Methodologies

Qualitative research seeks to understand complex social, behavioral, and cultural phenomena through interpretive methods [36]. The workshop emphasizes three key methodologies relevant to NVivo:

- a. Thematic Analysis is a method for identifying, analyzing, and reporting patterns (themes) within data [37]. NVivo facilitates this by enabling researchers to code data segments, organize themes into hierarchical nodes, and visualize relationships through tools like word clouds and concept maps.
- b. Grounded Theory is an iterative process of coding and theorizing from data to develop conceptual frameworks [38]. NVivo supports this through open coding, memo writing, and constant comparison, allowing researchers to build theories systematically.
- c. Mixed-Methods Approaches highlights mixed-methods research as integrating qualitative depth with quantitative breadth. NVivo's classification sheets enable researchers to link qualitative codes with categorical data, facilitating integrated analysis [2], [39].

These methodologies underpin the workshop's curriculum, with June 11, 2025 sessions focusing on applying them using NVivo's advanced features, such as queries and visualizations, to derive actionable insights.

3.5 NVivo in Research Methodology

NVivo, a computer-assisted qualitative data analysis software (CAQDAS), enhances methodological rigor by providing tools for data management, coding, and analysis [40]. The research methodology for the IPMI Institute workshop leverages NVivo 12's capabilities to operationalize qualitative and mixed-methods research.

- a. Data Collection and Preparation
 Qualitative research often involves diverse data sources, such as interviews, focus groups, surveys, and social media content. NVivo supports the importation of text, audio, video, and web data, enabling researchers to centralize datasets [32]. On June 11, 2025, participants learn to import and organize data, ensuring methodological alignment with their research questions. For example, a study on consumer behavior in Indonesia's digital economy might combine interview transcripts with social media posts [41]. Data preparation involves transcription, cleaning, and formatting. NVivo's AI-assisted transcription feature automates audio-to-text conversion. The workshop guides participants through these steps, emphasizing data integrity and ethical considerations, such as anonymizing sensitive information.
- b. Coding and Categorization
 Coding is central to qualitative analysis, involving the segmentation and labeling of data to identify themes and patterns [19]. NVivo's node-based system allows researchers to create, merge, and refine codes iteratively. The workshop's June 11, 2025, sessions focus on advanced coding strategies [42], [43], including; first-cycle coding (descriptive and in vivo coding to capture initial patterns), second-cycle coding (pattern and axial coding to develop theoretical insights), team coding (collaborative coding to ensure intercoder reliability, using NVivo's coding comparison query to measure agreement). Participants apply these techniques to sample datasets, such as policy documents or interview transcripts, aligning with methodological frameworks like

- thematic analysis or grounded theory.
- c. **Data Analysis and Query Execution**
 NVivo's query tools enable researchers to explore data relationships and validate findings. On the workshop covers [23], [39] text search queries (identifying specific terms or phrases to uncover recurring concepts, such as consumer preferences in market research), word frequency queries (analyzing common terms to identify dominant themes, useful in content analysis of social media data), and matrix coding queries (cross-tabulating codes with categorical data, such as; age, and gender, to support mixed-methods analysis). These tools enhance methodological rigor by enabling systematic exploration of data, ensuring findings are grounded in evidence. Participants practice running queries and interpreting results, preparing them to apply these techniques in their own research.
- d. **Visualization and Reporting**
 Visualization is critical for communicating qualitative findings to diverse audiences. NVivo's visualization tools, such as charts, word clouds, and concept maps, transform coded data into accessible formats [21], [40]. The workshop capstones project requires participants to create visualizations for a comprehensive dataset, aligning with the workshop's focus on practical application. For example, a word cloud might highlight key themes in a study on organizational culture, while a matrix chart could illustrate relationships between employee satisfaction and demographic variables.
- e. **Mixed-Methods Integration**
 Mixed-methods research combines qualitative and quantitative data to provide holistic insights. NVivo's classification feature allows researchers to link qualitative codes with quantitative variables, such as survey responses or demographic data [44]. The workshop demonstrates this through exercises integrating categorical data, for instance, age and location, with qualitative themes, enabling participants to conduct mixed-methods studies relevant to business or social policy in Indonesia.

4 Results and Discussion

4.1 Analysis Methods Using NVivo

On June 11, 2025, the workshop emphasizes NVivo features to analyze qualitative and mixed-methods data, ensuring methodological rigor and practical applicability. The key analysis methods include:

- a. **Query-Based Analysis** to enable systematic exploration of data to uncover patterns and relationships, aligning with qualitative methodologies like thematic analysis [37] and grounded theory (Bazeley, 2021). Participants engage in various topics; (a) text search queries to identify specific terms or phrases to explore concepts, such as consumer preferences in Indonesian market research, (b) word frequency queries to analyzing common terms to identify dominant themes, useful for content analysis of social media data, (c) matrix coding queries to cross-tabulating codes with categorical data (age, region) to support mixed-methods analysis. These queries are practiced using a sample dataset, such as interviews on digital transformation in Indonesian businesses, ensuring participants can apply them to real-world research questions.
- b. **Coding and Theme Development** to allow all participants use NVivo's node system to; (a) refine coding schemes to merge or restructure nodes to reflect emerging themes, aligning with second-cycle coding [19], (b) validate themes to use coding stripes and comparison queries to ensure themes are grounded in data, enhancing intercoder reliability for collaborative projects, (c) integrate mixed-methods data to provide link qualitative codes with quantitative classifications (survey responses) to explore relationships, such as correlations between customer feedback and purchase behavior.
- c. **Data Visualization** to transforms complex data into accessible insights. NVivo's visualization tools, including charts, word clouds, and concept maps, are used to: (a) illustrate themes to create word clouds to highlight dominant themes, such as key terms in policy documents, (b) map relationships to generate concept maps to visualize connections between codes, useful for grounded theory studies, (c) present mixed-methods findings to use matrix charts to display relationships between qualitative themes and quantitative variables, such as customer satisfaction by age group.



Figure 2. With the Participants

4.2 Deliverables Produced

The workshop session culminates in deliverables that demonstrate participants' ability to analyze data and communicate findings using NVivo. These deliverables are designed to be practical, reproducible, and relevant to the Indonesian research context. Key deliverables include [45];

- a. Coded NVivo Project with the purpose to demonstrates proficiency in data organization and thematic analysis, serving as a template for participants' future research with a fully coded NVivo project file containing organized data, hierarchical nodes, and annotations. Participants code a sample dataset (interviews on sustainable business practices in Indonesia) using first- and second-cycle coding techniques. For example, a coded project analyzing consumer feedback on e-commerce platforms, with nodes for themes like "user experience" and "trust factors" [41].
- b. Query Reports to provides evidence-based insights to support research conclusions, suitable for inclusion in academic papers or professional reports through reports generated from NVivo queries, including text search, word frequency, and matrix coding outputs. For example, a matrix coding report might show how satisfaction themes vary by customer demographics. For example, both a text search and a word cloud report to identify key concerns

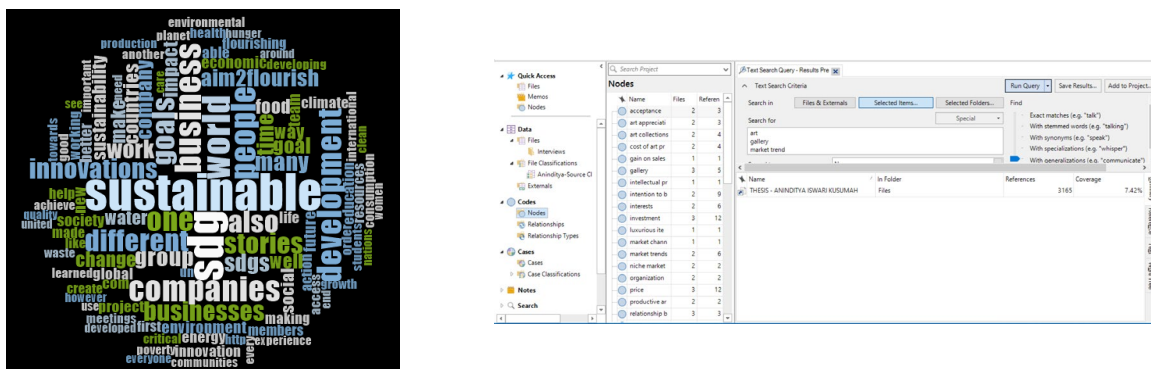


Figure 3. Word Cloud & Word Search

- a. Visual Outputs to enhances communication of findings for diverse audiences, such as conference presentations or stakeholder briefings and to visualizations such as word clouds, concept maps, and matrix charts, exported from NVivo. For instance, a concept map might illustrate relationships between employee motivation and organizational policies.
- b. Capstone Presentation to develops skills in synthesizing and communicating research findings, aligning with academic and professional standards via a short presentation summarizing the analysis of a comprehensive dataset, integrating coding, queries, and visualizations. Participants work in small groups to present findings, such as insights from a mixed-methods study on Indonesian consumer behavior. For instance, a presentation on digital transformation trends, combining qualitative themes from interviews with quantitative survey data.
- c. Methodological Reflection to really encourages critical evaluation of NVivo's strengths and limitations, fostering methodological awareness and provide a brief written reflection on the analytical process, including

the use of ethical considerations, and challenges encountered

4.3 Practical Implementation on June 11, 2025

The workshop sessions are structured to produce these deliverables through hands-on activities; (1) participants run text, word frequency, and matrix coding queries on a sample and create word clouds and concept maps, exporting them as visual outputs dataset, producing query reports, (2) participants code a comprehensive dataset, integrate categorical data, and generate visualizations and these activities ensure participants leave with tangible deliverables and practical experience in NVivo analysis.

4.4 Contextual Relevance to IPMI Institute

The deliverables are tailored to Indonesia's research landscape, addressing local issues like digital transformation, sustainable development, and community resilience. For example, query reports might analyze social media data on e-commerce trends, while visualizations could support policy recommendations for disaster management [46]–[48]. Challenges, such as NVivo's limited support for Indonesian languages, are addressed by teaching workarounds, like setting the text content language to "Other" [32].



Figure 4. The Audience of Nvivo

5 Conclusion

The Research Workshop Volume 12: NVivo, conducted on June 11, 2025, at the IPMI Institute in Jakarta, Indonesia, marks an important initiative in enhancing qualitative and mixed-method methodologies. It focused on advanced methods of analysis, data visualization, and deliverable production, allowing participants to use NVivo 12 for rigorous research. By relating theoretical constructs such as thematic analysis/grounded theory to practical tools (such as coding, queries, and AI-assisted features), the workshop enabled researchers to address complex research questions pertinent to Indonesia's academic and professional landscape.

The workshop was based on hands-on training and participants worked on a capstone project that involved tools for visualization so that they were able to produce concrete outputs such as coded projects, query reports, visual outputs, and reflections on the methodology. Deliverables were contextualized in the local settings of digital transformation and sustainable development and were aligned with IPMI's mission of research excellence. While challenges arose, including barriers for accessing the software, these were mitigated through time-limited licenses and problem-solving sessions to ensure the participation and inclusion of diverse participants-academics, students, and practitioners.

The introduction of AI tools was balanced with rigorous discussions about ethical considerations and practical constraints around their implementation, thus preparing participants for emerging trends in qualitative research. The workshop fostered collaboration and networking, thus strengthening the research ecosystem within Indonesia, building on events, to further promote data-driven insights within business, social sciences, and policy research.

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