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Job analysis about the position: “Chief of information systems department” towards the “Economic sector” “Company of Sonelgaz” and the “public employment” “University of L’Arbi Ben M’hidi, Oum El Bouaghi“ Algiers (Comparative study)

Ichraf Mouici

Laboratory of ergonomic and applied studies in psychology and educational sciences, L’arbi Ben M’hidi University of Oum El Bouaghi, Algiers

Email: mouici.ichraf@univ-oeb.dz

Karima Hiouani

Laboratory of ergonomic and applied studies in psychology and educational sciences, L’arbi Ben M’hidi University of Oum El Bouaghi, Algiers

Email: Karima.hiouani@univ-oeb.dz

Abstract--The current study aims to analyze and compare the position of Chief of Information systems technology department in both the economic sector and the public employment, applying it to a sample of (02) job position the first one at Production and Electricity Company – Sonelgaz- and the second one at the University of L’arbi ben M’hidi- Oum El Bouaghi, the two researchers relied on an interview tool consisting of 23 questions divided into six axes (Job duties and responsibilities, Job performance and process, tools and equipment, skills and knowledge, working conditions, performance standards and challenges) with the validity of the tool assessed by six experts in terms of professional experience in the field, management and English language. The interview results were analyzed by using Nvivo program version15. The study used a descriptive approach, and we arrived at the following main conclusions: The study identified two (02) competencies which are the only position in the two sectors” Chief of Information systems department” This indicates that there is a common set of competency domains which are important across the two sectors. The results clearly show there are more similarities than

dissimilarities consider responsibilities, work tools, task and activities between both sectors.

Keywords---Job analysis, Economic Sector, Public Employment, Algerian Electricity and Gas Company, University of L'Arbi Ben M'hidi, Chief of Information Systems Department, Information Systems (IS), Information Technology (IT).

1. Introduction

One of the most common problems facing human resources in different societies is the understanding of tasks, responsibilities, duties, and activities. In order to highlight these previous functions can be known and identifying by using job analysis models which there are several of it, each one has advantages and disadvantages, and to use these models it depends on time, resources, situation, job requirements, and the nature of the job and most of all the companies' objectives and goals. Therefore, to use one of these models we have to know and define it. Job analysis models refer to a purposeful, systematic process that provides descriptive, important job-related information that distinguishes the job being analyzed from other jobs. A job analysis breaks the job down into meaningful components. (Wiley & Condrey, 2005, p. 529). For (Benzerouel, 2019, p. 27) job analysis considered as a systematic process that includes a set of organized procedures and activities aimed primarily at collecting objective accurate comprehensive information about a job. Job analysis is generally considered as a process that would form the basis of some other personnel function such as designing a selection test or developing a performance appraisal instrument. (Wiley & Condrey, 2005). Job analysis models are essential tools for understanding the different parts of a job position and defining its key components. Although there are varied aspects about which information is collected, it is commonly focused on the content of the work, the context in which the work is done, and the employer's ability to perform the job requires then to have the necessary qualities. By analyzing a job position the worker will have more description about his job and how it's done. To do so there are different workplaces where we can apply it such as societies, firms, organizations, companies, administration and moreover. For example the **"Algerian Electricity and Gas Company"** which is a commercial public company in the shares of Sonelgaz, that has various positions, each one of them requires specified degree. One of its job positions is **"Manager of Information Systems Department"**. Also there is the same position in **"higher education administration"** and to be specified **"university of L'Arbi Ben M'hidi -OEB-**". That position needs only one person to do its functions. The **"Information systems department"** is a center for systems, media networks and communication; it is one of the most prominent centers at the company of Sonelgaz and the university due to its importance. The other is a joint department directly to the company manager and to the university presidency. All the departments benefits from its services including joint interests (univ-oeb, 2024) (sonelgaz, 2020).

The company of Sonelgaz and the University of L'Arbi Ben M'hidi- belongs to a (02) two different sectors the first one is: Economic sector, the second one is

Public employment, in order to draw a destination between these two similar positions in each sector we decided to conduct our current study which is a comparative job analysis. as we explore the differences in this study the following question need to be asked:

02. Main question:

- How is the process of job analysis and job description elaboration conducted in public Algerian organizations?

And three sub-question:

- What are the main differences for the position of “Chief of Information systems department between the economic sector “Company of Sonelgaz” and the public employment sector” university of L’Arbi Ben M’hidi -oeb-” ?
- How is the role of “Chief of Information systems department” perceived differently in the economic sector “Company of Sonelgaz” and the public employment” university of L’Arbi Ben M’hidi -oeb-?
- What are the challenges faces the role “Chief of Information systems department “Company of Sonelgaz” and the public employment” University of L’Arbi Ben M’hidi –Oum El Bouaghi-.

03. Purpose of the Study:

To clarify the purpose of the study we need to state what we aim to analyze and accomplish:

- ✓ Differences concerning the workplace environment, work timing, salary, physical conditions, between the “economic sector” “Company of Sonelgaz” and the public employment” university of L’Arbi Ben M’hidi –Oum el Bouaghi- for the position of “Chief of Information systems department”
- ✓ Give a meaningful job description of “Chief of Information systems department” in "economic sector” and “public employment” from the perspective of the employer itself.
- ✓ Analyze the similarities and differences in the job responsibilities for the “chief department of Information Systems” position across both sectors “economic sector” and “public employment”.
- ✓ Identify how each job position does its tasks, responsibilities, activities.
- ✓ Understand the perception and significance of the position within each sector and its broader impact in the sector itself.
- ✓ Highlight the differences between both sectors concerning the workplace environment, work timing, salary, physical conditions

04. Importance of the study:

The importance of this study is centered on analyzing the position of “Information Systems department Chief” from several dimensions: workplace environment, responsibilities, work timing, physical conditions, evaluation of the activities, and salary. In order to make clarity and understand more what job analysis can explore and define. Also shedding light on the topic of analyzing job positions in the economic sector and public employment using the interview technique and analyzing it with the Nvivo program

- Helping to identify differences between job characteristics in each sector, as the topic of job position analysis was not addressed within the limits of my knowledge in Arab research
- Addressing the concepts of job analysis and its tools

05. Procedural concepts of the study :

- **Job Analysis:** it means the process of applying a full analyzing through collecting different information related to a specific job position such as Chief of Information systems department for the purpose of clarifying the differences in each sector.
- **Economic sector:** it is part of the economy dealing with the production, distribution and consumption of goods and services which has a Financial and organizational autonomy. This sector includes a wide range of commercial, industrial and service activities aimed at achieving profit and meeting consumers' needs like "Algerian Electricity and Gas company".
- **Public employment sector :** It's a noncommercial sector manages all public employment and provides social services, which has several government sector such as Ministry of higher Education and Scientific Research "University of L'Arbi Ben M'hidi-Oum el Bouaghi-".
- **Sonelgaz Company:** "Algerian Electricity and Gas Company" which is a commercial public company in the shares of Sonelgaz that belongs to the Economic sector.
- **University of L'Arbi Ben M'hidi -oeb-:** It is a higher academic institution that belongs to the public employment which includes several literary and scientific disciplines, facilitated by a management structure made up of several administrated departments such as the department of Information systems.
- **Chief of Information systems department:** a job title of a position that refers to the employer who work in the department of Information systems for the economic sector and public employment.

06. Previous studies :

- Study of **Ronald R Gauch (1993)** titled: "Differences between public and private management information systems", a survey was taken among MIS managers responsible for systems development, to determine if differences between private and public organizations reported in the literature existed. The results suggest that the negative image of the public sector as an employer, compared to private industry, is not as intense as the literature suggests, sector differences become more prevalent for MIS managers as they move up the organizational hierarchy and public MIS managers are facing a greater threat to the control of computerized information systems. The implications of these findings on the recruitment and retention of MIS personnel are discussed.
- Study of **Igbaria and shayo (2004)** titled: "Strategies for staffing the information systems department" aimed to address several critical issues related to the stuffing and management of Information Systems(IS) department in several factors (skills shortages, turnover rates, job stress and burnout, managerial implications, communication) using the descriptive and analytic method, and relied on theoretical insights and literature review, the

results of the study revealed significant challenges in staffing (IS) department, including skill shortages, high turnover rates, job stress, and burnout. The findings underscore the need for tailored management strategies that consider the diverse career orientations of employees to improve retention and job satisfaction.

- Study of **Krogstie (2012)** titled: “Comparing Private and Public Sector on Information Systems Development and Maintenance Efficiency”, aimed to investigate whether information systems development and maintenance are conducted in less optimal way in the public sector compared to private sector in Norway, and the objectives focused on understanding its dynamics and provided a clearer picture of the relative efficiencies in each sector, the researcher utilized a survey consisted of 48 questions to gather data from a sample of 300 Norwegian organizations, and analyzed the data using T-Test for normally distributed data and the Mann-Whitney nonparametric test for non-normally distributed data. The study revealed that around one-third of Information Technology activities were outsourced, and Public organizations have entrusted more development to outsiders 40% and maintenance 34% work compared to private organizations. While public organizations outsourced development and maintenance at 29% and 30%, private organizations outsourced their operations and user support at 31% and 21%, respectively. Despite these slight tendencies, the findings indicate that the efficiency of information systems support is relatively similar across both sectors.
- Study of **Tallhaug and Krogstie(2016)** Titled: Differences between the public and the private sector in information systems development and evolution practice and results, the paper aimed to confirm the look upon how public and private organizations differ relative to maturity of practice and how this might influence their ability to have time for value added IT-activities. The study applied on 200 large Norwegian private and public organizations, and the overall response rate is around 45-50 %, although not all respondents answer all questions. The data presented in the survey based on responses from more than 200 organizations for each year. It concludes that differences between private and public sector as for reported maturity of IT-management practice that might partly explain the difference.
- Study of (Krogstie, 2024) A comprehensive mapping study explored how neuroscience and biometric tools have been applied within Information Systems (IS) modeling, a research direction termed "neuro-conceptualization." Analyzing literature from 2014 to 2024, the study systematically reviewed 43 empirical works selected from nearly 5900 initial results using strict filtering criteria. The majority of studies focused on individual comprehension of visual models, with eye-tracking emerging as the most commonly used technique. Other physiological measures such as EEG, heart rate variability, and electro dermal activity were used less frequently and often in combination with eye-tracking to assess cognitive and emotional responses. Most experiments were conducted in controlled lab environments with limited attention to real-world or collaborative modeling contexts. The review pointed out several research gaps, including the need to expand biometric applications to other modeling tasks such as creation, validation..., explore collaborative settings, and develop adaptive modeling tools that respond to users' cognitive states. Overall, while interest in neuro-conceptualization is on the rise, its current

application remains limited in scope, suggesting ample room for future exploration.

Comment on Previous studies: Analyzing the job position of an information systems manager in the public versus economic sectors reveals unique challenges that are specific to each sector. Even though the basic managerial tasks may be similar in any field, it is crucial to understand the differences in order to create a positive work environment. These roles can have quite different contexts and implications. Managers in the economic sector frequently concentrate on increasing efficiency, productivity, and using technology to gain a competitive edge. On the other hand, in the public sector, the focus is usually on providing services to the public, complying with regulations, and being transparent. Although a thorough understanding of technology is necessary for both positions, the goals and outside demands may be very different.

Gap in the Literature: The seniority of these previous studies is due to the fact that job position analysis is not a field that is widely used in most Algerian institutions and in most cases because most positions are created through financial study, experience and certification. Therefore, this study came first for the purposes of scientific research, and second to shed light job analysis as a field in which investment must be made, as well as the objectives of scientific study. In these studies, researchers focused on the importance of technology tools, core managerial, the context, and understanding the differences and similarities for the job position : “Manager of Information Systems” in the economic sector versus the public employment, and ignored the workplace environment, salary, work timing, tasks, responsibilities, activities and their position itself with analyzing these differences and similarities for both sectors which our current study will address this gap.

07. Theoretical framework:

Understanding job specification in order to analyze a job position not only clarifies the particular tasks of the Chief Information System, but also illustrates how different organizational structures and cultures influence these roles. For example, in the economic sector, the emphasis may be on technical innovation and market response, whereas public employment frequently prioritizes regulatory compliance and service delivery efficiency. Because of this disparity, job descriptions and competencies must be tailored to each sector's specific needs, influencing recruitment strategies and employee performance outcomes. According to research, Sectors that apply systematic job analysis procedures can dramatically improve role clarity and overall productivity, highlighting the necessity of matching job profiles with strategic objectives in both sectors. (Avs, 2018) (Siddique, 2004)

➤ **Definition of job analysis:**

- **Mondy& Noe (2006)** defended that human resource planning is the entry point of human resource management concerned with the determination of human resource requirements, job analysis, recruitment, selection and socialization... The job analysis process is an important step in the recruitment process in which the human resources department identifies

employment as needing to be staffed. Job analysis determines in detail the particular, job duties and requirements and the relative importance of these duties for a given job. It also collects information about the duties, responsibilities, necessary skills, outcomes, and work environment of a particular job. (Nwabali D. I., p. 119)

- For **Michael Armstrong and Helen Murlis (2007)** Job Analysis is the process of collecting, analyzing and organizing information about jobs. It provides the basis for a job description or role definition and data for job evaluation, organization design or review, performance management, succession planning and career management, and other human resource management purposes. Job analysis as defined by Murlis is an analytical process involving gathering facts, analyzing and sorting these facts and re-assembling them into whatever consistent format is chosen. (M & Murlis H, 2007, p. 119)
- For **Durai (2010)** Job analysis is a process of gathering different information that is related to the different sides of the position itself, including the context of the work, the circumstances where the job is done, and the characteristics of the employee which is required who do this job. (Benzerouel, 2019, p. 26)
- According to **Okere (2013)**, job analysis falls under human resource planning and it helps to make qualitative and quantitative evaluations of the adequacy of people in organization. (Nwabali I. G., 2023, p. 119)

According to these different definitions, Job Analysis sees the job position's requirements from general information to every blind spot. It analyzes every single task, act, information, location, lighting, physical movement, possible injuries, tools, salary, work timing..., so that it gives a detailed description about the position and an easy concept about what a job position holds, for the purpose of making job analysis, it differs from the point of view of what the researcher is thinking and the importance of his research, as this current study shows the differences for a one single job position titled "Chief of the Information Systems Department" between the economic sector and public employment, where we highlighted above the purpose and the main objective.

➤ **Importance of Job Analysis:**

A systematic job analysis is the foundation for almost all human resources activities which make the job position easy to identify and make a deep concept for the employer in order to understand what he is willing to work in, and for the , job analysis provide:

- Writing a job description: the written result of the job analysis.
- How to select employees: it gives a clear understanding of the tasks performed and the competencies needed to perform those tasks.
- Evaluate performance: determine the worth of a job
- Training: it yield lists of job activities that can be systematically used to create training programs
- Personpower planning: this is one of a rare to use but job analysis provide it which means promoting employees until they eventually reach their highest level of incompetence.
- Performance appraisal

- Job classification: enables a human resources professional to classify jobs into groups based on similarities in requirements and duties
 - Job Evaluation: determine the worth of a job
 - Job design: determine the optimal way in which a job should be performed
 - Determine worker mobility within an organization
 - conduct training programs without knowing the tasks an employee performs, the conditions under which they are performed and the competencies needed to perform the tasks
- A comprehensive job analysis provides such information. (Aamodt, 2004, pp. 34-36)

➤ **Models and Tools of job analysis:**

Job analysis models and tools are essential frameworks that guide the systematic evaluation of job positions across various sectors. These methods help organizations optimize job functions, enhance efficiency, and ensure alignment with strategic goals. The following sections outline key aspects of job analysis models and tools based on recent research.

• **Models:**

- **The O'Net Model:** has the advantage of assisting managers or job analyst's list job-related information for numerous occupations at once. It helps collect and record fundamental and preliminary data, such as educational needs, physical requirements, and mental and emotional needs. It also connects the level of compensation, benefits, perks, and benefits that will be provided to a potential candidate for a certain job.
- **FJA Model:** FJA stands for Functional Job Analysis, and it aids in the more thorough collection and recording of job-related data. It's used to create task-specific statements. The technique, developed by Sidney Fine and his colleagues, aids in determining the complexity of a job's duties and obligations. This work-oriented technique is based on the relatedness of job-data, with the complexity of work being determined on a scale of different scores assigned to each task. The lower the score, the more difficult it is.
- **Position Analysis Questionnaire (PAQ) Model:** PAQ stands for Position Analysis Questionnaire. This well-known and widely utilized technique is used to examine a job by having job occupants and their superiors fill out questionnaires. The method, which is designed by a skilled and experienced job analyst, entails interviewing subject matter experts and employees, as well as reviewing the questionnaires based on those interviews.
- **The Fleishman Job Analysis System (F-JAS) Model** is a basic and generic approach to discovering common elements in various jobs, such as verbal abilities, reasoning abilities, idea generation, quantitative abilities, attentiveness, spatial abilities, visual and other sensory abilities, manipulative abilities, reaction time, speed analysis, flexibility, emotional characteristics, physical strength, perceptual abilities, communication skills, memory, endurance, and others.
- **Employee Competences in Terms of Knowledge, Skills, Abilities, Behaviors, Expertise, and Performance:** This model discusses employee competencies in terms of knowledge, skills, abilities, behaviors, expertise, and performance. It also aids in determining what a potential candidate requires at the time of entry into an organization at a specific designation, in a specific work environment, and according to a specific timetable. Qualifications,

experience, education, training, certificates, licenses, legal requirements, and a candidate's willingness are all included in the model.

- **Job Scan:** This technique identifies personality traits and recommends a suitable job model. Individual abilities such as intellect, experience, and physical and emotional attributes of an individual required to accomplish a given profession are not discussed.

In different situations, different tools can be employed. The best job analysis tool depends on the job analysis demands and objectives, as well as the amount of time and resources available. (TL, 2021, p. 16)

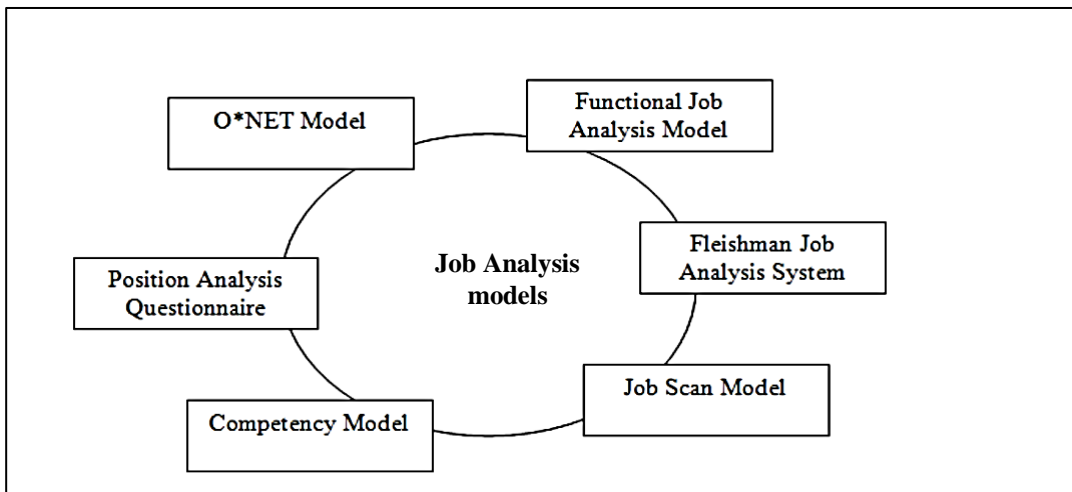


Figure -01- Job analysis Models

- **Tools:**

Job analysis can be conducted using various techniques. Diverse methods of gathering data for job analysis are as follows:

- **Questionnaire:** Though this method of collecting data is very time-consuming and difficult, but still clerical workers use this method on a large scale. Under this method, the job holders are asked to provide the entire significant data regarding their jobs in written form in their own words. It is a method of gathering information about any job through mail surveys.
- **Checklist:** In this method, the employee is given a list of task statements and he has to simply check the tasks performed by him. Unlike questionnaire method, this method is much convenient as the employee is not accountable to anyone. However, a lot of work is done to gather suitable task statements.
- **Interview:** In this tool, the interview usually conducted outside the organization in which interviewees are either called one-by-one or in a group. The information given by all the interviewees is combined together to have a clear picture about the job. Although this method is also time-taking and expensive, but it proves to be beneficial for the company.
- **Observation:** Observation method provides a clear job description as the analyst personally observes the performance of the employees and the working environment in which he is working. Usually this method is adopted by those organizations where major functions are performed by manpower

and the working period is short. This method is expensive, slow and normal work functioning may also get interrupted.

- **Technical Conference:** In this method, the main sources of obtaining information about the job are the supervisors and not the employees. But sometimes, the data given by them is not accurate as they provide data on the basis of their previous experiences. Some of the supervisors do not have sufficient knowledge about the jobs which are not performed by them and thus they may give wrong answers.

Different tools can be used in different situation. Selection of an ideal job analysis tool depends upon job analysis needs and objectives and amount of time and resources. (sharma, 2023, p. 148)

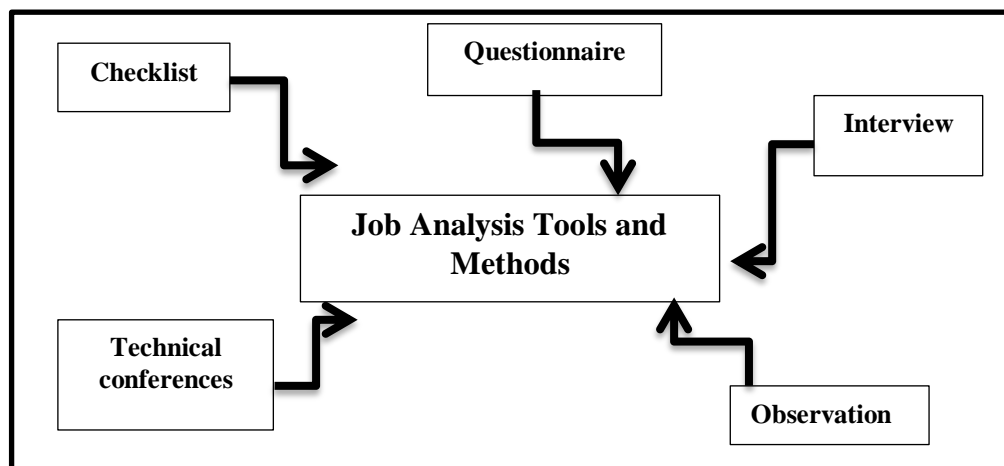


Figure -02- Job Analysis Tools and Methods

➤ **Advantages and disadvantages of Job Analysis:**

Understanding the particular requirements and responsibilities connected to a job position within an organization requires job analysis. It guarantees that job descriptions are precise and in line with the objectives of the company. Additionally, job analysis aids in determining the competencies and skills required for efficient hiring and training procedures. However, because job analysis necessitates extensive data collection and analysis, it has disadvantage, such as being time-consuming. Employees may also oppose the process because they fear changes to their job position or feel threatened by them. Furthermore, job analyses can quickly become out of date in dynamic work environments, requiring regular updates to stay relevant. The table below explains advantages and disadvantages of job analysis:

Table-03- Job Analysis Advantages and Disadvantages Part two

Advantages	disadvantages
<ul style="list-style-type: none"> - Provides with Fust Hand Job-Related Information - Helps in Creating Right Job- 	<ul style="list-style-type: none"> - Disadvantages of Job Analysis - Time Consuming - May Involve Personal point of view

Advantages	disadvantages
<p>Employee Fit</p> <ul style="list-style-type: none"> - Helps in Establishing Effective Hiring Strategies - Guides through Performance Evaluation and Appraisal - Helps in Analyzing Training & Development Needs - Helps in Deciding Compensation & Benefits - Provides First-Hand Job-Related Data: The job analysis process provides valuable job-related data that - assists managers and job analysts in understanding the duties and responsibilities of a specific job, the risks and hazards associated with it, the skills and abilities required to perform the job, and other pertinent information. - Aids in the creation of the ideal job-employee match: This is one of the most important managerial tasks. HR managers' abilities, understanding, and competences are put to the test when it comes to placing the right individual in the right job. Job analysis assists them in determining what type of individual will be most suited to successfully complete a certain task. - Assists in the development of effective hiring practices: who is to be hired, when, and where? For a certain job position, who should you target and how should you go about. 	<ul style="list-style-type: none"> - Source of Data is Extremely Small - Involves lots of Human Efforts - Job Analyst May Not Possess Appropriate Skills - Mental Abilities can not be Directly Observed - Time Consuming: The most significant downside of the Job Analysis procedure is that it takes a long time. It's a significant drawback, especially when employment changes regularly. - Personal Bias: If the observer or job analyst works for the same company, the process may be influenced by his or her personal preferences. This is a significant impediment to gathering true and accurate data. - The Data Source is Extremely Limited: Because of the tiny sample size, the data collection source is highly limited. As a result, data gathered from a small number of people must be standardized. - Many human efforts are required: The process necessitates numerous human efforts. Because each work requires unique information and there is no fixed pattern, customized data must be collected for each project. For gathering and recording job-related data, a distinct method must be followed.

08. Methodology:

- **Sample size and scope:** The sample was selected by intentional sampling, one employee from each sector which sized by (02) two, this size adequate for the specific case study.

Causes: The reasons for choosing this sample include the fact that there is only one position under this job title: “chief of information system department” .Job analysis takes a long time to implement (six months), and that there are financial, temporal, and spatial limitations to the study.

- **Limitations:** the study implemented in a good environment, the sample was very helpful in explaining and answering all my questions. The study situated in Oum El Bouaghi state, the first case study conducted in

“Fkirina district”, where Sonelgaz Company selected from the economic sector, the second case study was University of “L’Arbi ben M’hidi” –oeb-selected by the researcher from public employment. The study conducted from March 2023 to January2024.

- **Data Collection:** an exploratory study was undertaken by the researchers, many points were identified in both offices through observation and semi-structured interviews, where the strengths and weaknesses of the work environment and methods of job practices were identified, as well as identifying the various aspects that should be studied in order to ask appropriate questions to collect data by conducting a work analysis.
- **Tool:** Interview , the interview conducted in English language.
Definition of the interview: As for the scientific interview, it is a research tool that enables the researcher to answer study questions or test his hypotheses. It depends on the researcher meeting the researcher face to face by presenting and asking a number of questions from the researcher and answering them from the sample.
- **Method:** the descriptive method.
- **Psychometric Characteristics:**
 - **Validity of arbitrators:** The interview was presented to a group of specialists (06 arbitrators), two in the field of psychology of work and organization, two in the field of English language, and two experts in the field of management, in order to verify the validity of the questions, axes, and objectives of the subject. Appropriate adjustments were made based on their opinions and taking their comments into consideration. For the following questions:
 - Question No. 03 of the first axis
 - Questions 06, 07, and 09 from Axis 02
 - Question 22 from Axis VI

The term "role" was also changed to "position," as well as some vocabulary and verbs from a linguistic and grammar point of view. The percentage of agreement between specialists was calculated by the “Laoshi equation”; there was a total agreement between the specialists in the significance of the “SVR=01” which means that the tool is suitable for its application, and the following table shows the final version of the interview.

Design of the interview	
Purpose of the interview	Update the existing job description and determine the position by analyzing tasks, activities, responsibilities, workplace environment, work timing, salary, physical condition, and role perception.
Axes of the interview	The interview divided into six Axes <ul style="list-style-type: none"> - Axe 1: Job duties and responsibilities - Axe2: job performance “workflow and process” - Axe3: tools and equipment - Axe4: skills and knowledge - Axe5: work condition - Axe6: Performance Standards and Challenges
Observation into the	- How is their Workspace organized

interview	<ul style="list-style-type: none"> - The way the sample communicate with their colleagues - Do they respect work timing and job duties - Physical movements - Workspace environments - The modernity of the tools are used
Questions of the interview	
Axe 1: 4 questions	Q 1: Could you describe your main job duties and responsibilities?
	Q 2: Could you elaborate on that? give me an example please.
	Q 3: Could you describe a typical day or week would go in your role, from start to finish?
	Q4: Are there any other responsibilities or tasks you perform that are not included in your job description?
Axe 2: 6 questions	Q5: Could you describe the standard process you follow at work?
	Q6: Could you describe how your own job effects and be affected with your colleagues' work?
	Q7: Did you notice any obstacles or inefficiency in the way job processes function?
	Q8: What causes these obstacles? What impact do they have on your work?
	Q9: Did you face any concrete problems and challenges in your actual position , and how do you think it is possible to overcome that?
Q10: What types of decisions are often required to make in your position?	
Axe3: 3 questions	Q11: What are the primary tools, or equipment you need to perform your job?
	Q12: Which of these are essential to your job? Could you describe the right use of these tools?
	Q13: How would you rate the effectiveness, usability, and reliability of these tools and equipment?
Axe4: 3question	Q14: What are the qualifications, skills, knowledge, and abilities required to perform this job successfully?
	Q15: What kind of training or prior experience is typically required to be qualified for this position?
	Q16: Are there any skills or knowledge areas where you feel additional training or development would be beneficial for you in order to improve your qualification in this job position?
Axe5: 3questions	Q17: Would you be able to let me know about your typical work environment, which involves the physical setting, noise level, lightning concentrations and any other relevant factors?
	Q18: Are there any physical demands associated with your job, such as lifting, standing for long periods, moving from or repetitive motions?
	Q19: What are your typical working hours, and is there any flexibility in your schedule?
Axe6: 4questions	Q20: How is your performance typically measured or evaluated in this role?
	Q21: Do you feel you have a clear understanding of the performance standards and expectations for your role?
	Q22: What are the main common frustrations or obstacles you usually experience in your role?
	Q23: Are there any aspects of your job that you find particularly stressful or demanding?
Notes	

09. Analysis:

The results of the study were analyzed using the Nvivo Program version 15.

- **Steps of use Nvivo Program:** In order to analyze collected data from the interview, the researcher followed three main steps:
 - **1st Step: Import Data:** this step consists in entering data to be as an inside sources in this program, the corresponding language was entered using English language. There was two interviews each one has data contains 6 axis divided into 23 questions and a 23 answers.
 - **2nd step: Analyze Data :** after importing the data in the program , the researchers transfer them to a cloud word of the term “Position” and “job analysis, a word tree of terminologies related to “job analysis” and “job description” , most “30 frequent word” in a schedule and summarized the two interview.
 - **3rd Step : data display** (Nvivo 15 version program) :

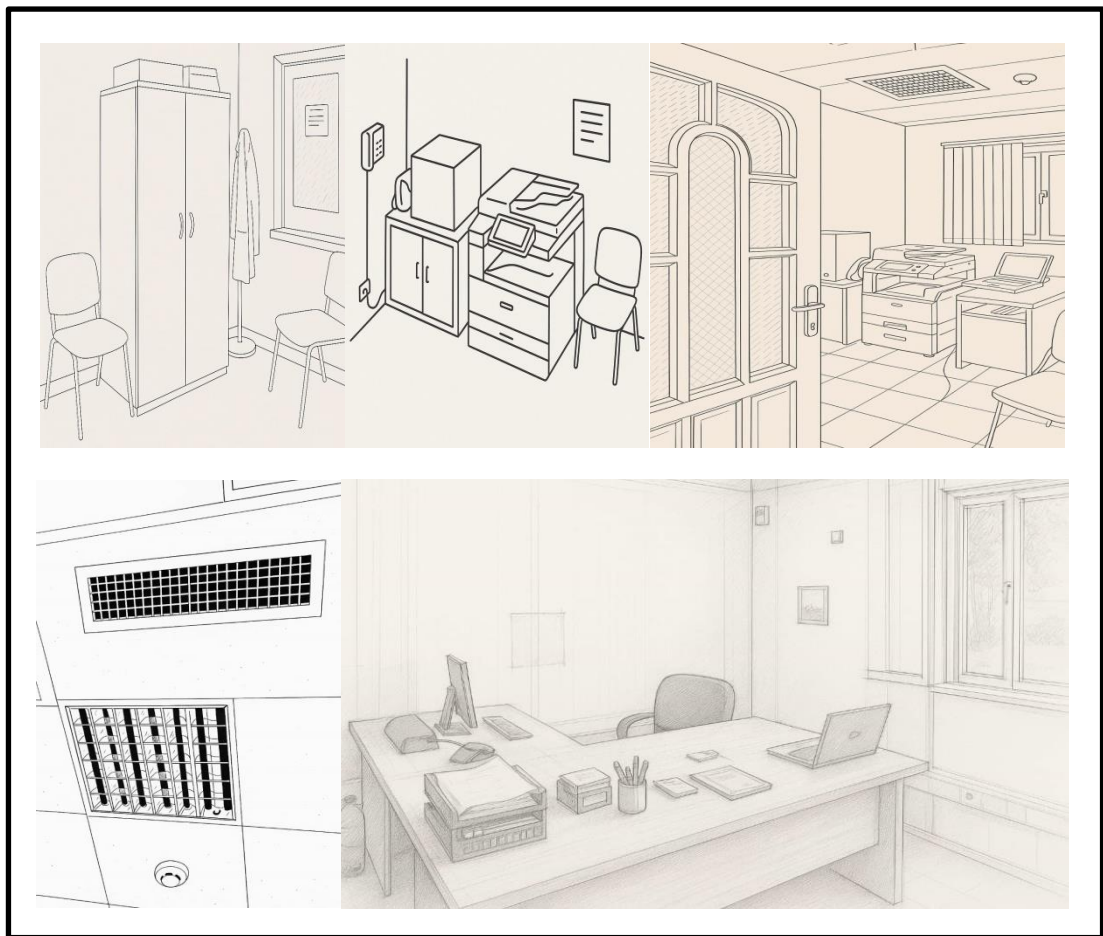


Image -05- Office of the worker in the Economic sector (khouloodAbbad)

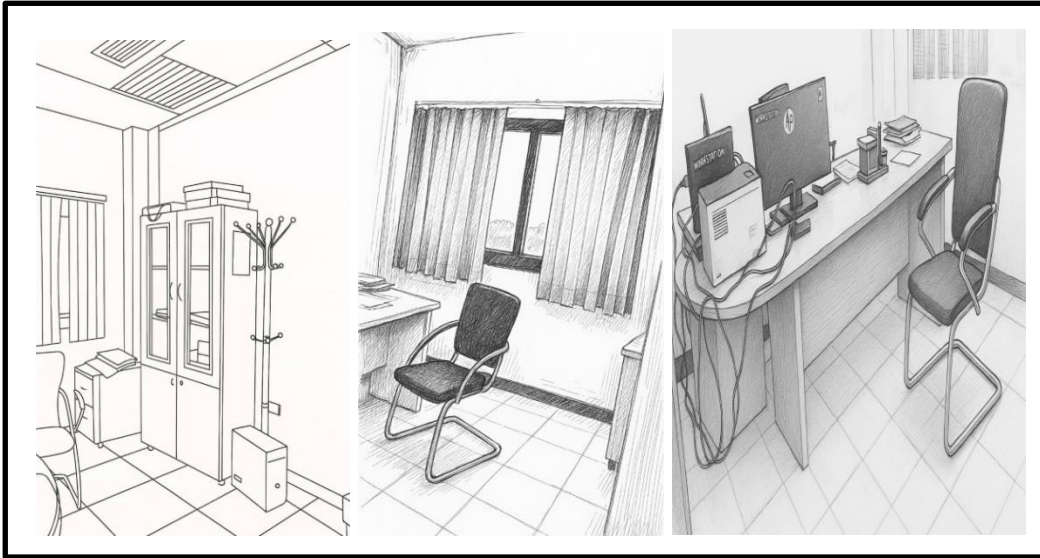


Image -06- Office of the worker in the Public Employment

Image 05 represent the office in Sonelgaz Company, and image 06 represent office in University of L'Arbi ben M'hidi.

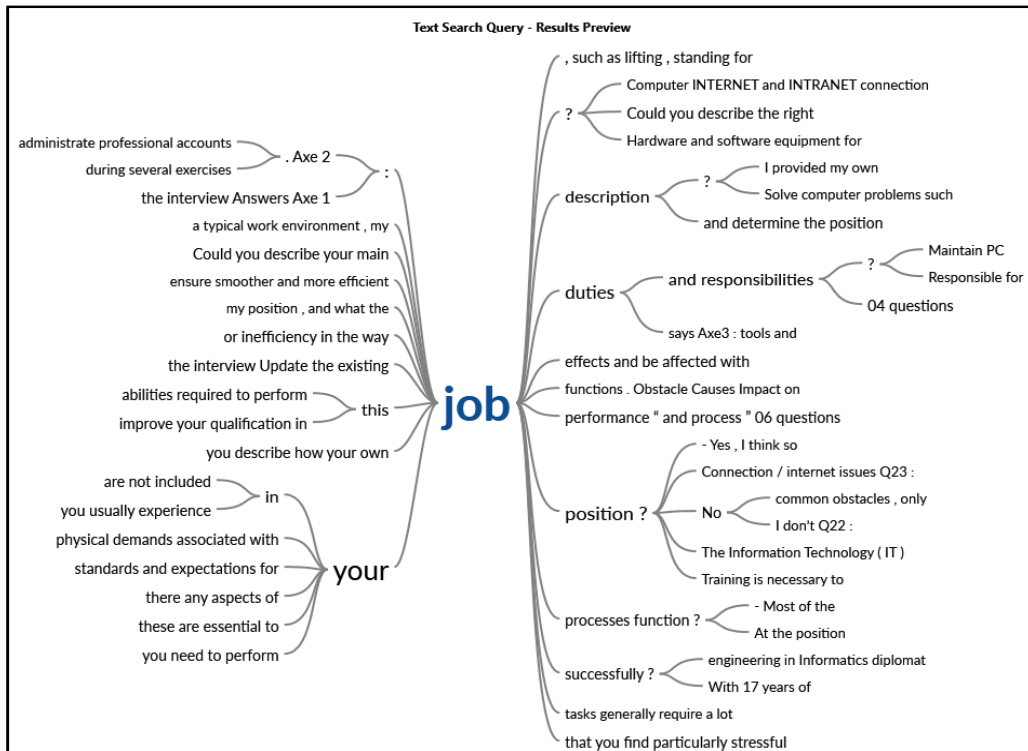


Figure -07- Word tree of terminologies related to « job analysis » (Nvivo 15 version program)

The map in figure -07- reflects the outcomes derived from data analysis using the Nvivo program. This figure represents a word tree of terminologies related to the "job analysis" concept, which connects to various aspects of job descriptions and specifications. The map indicates that the terms "abilities," "responsibilities," "physical condition," "work environment," "obstacles," "experiences," and "job equipment" are included in different facets of the job position. The word tree of terminologies appears to summarize the interview conducted to define the requirements for the job position of "chief of information systems." This visual representation not only highlights the key components necessary for the position but also serves as a valuable tool for aligning expectations between employers and potential candidates. By clearly outlining these critical elements, the word tree aids in ensuring that both sectors have a mutual understanding of the qualifications and responsibilities essential for success in the job position.

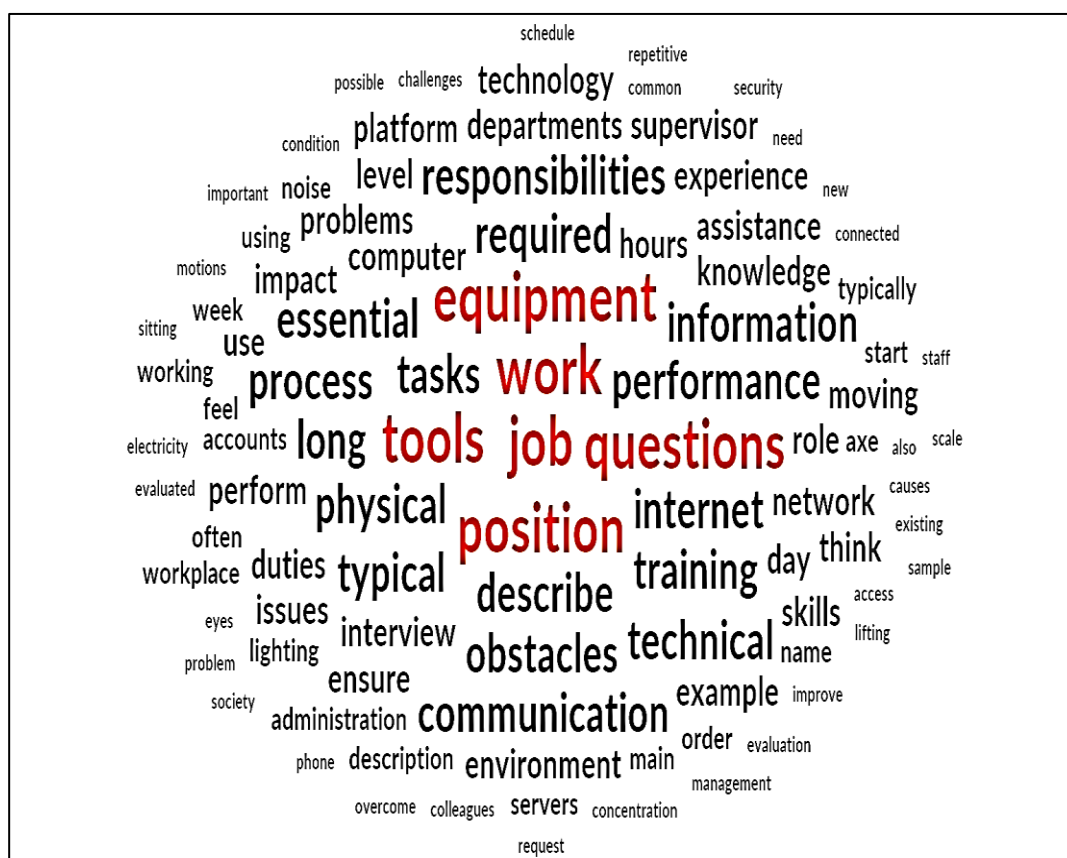


Figure -08- Word cloud of terminologies related to « job analysis »

Figure 08 represent word cloud which is a collection of most frequent words that are often mentioned in the interview, its function is to facilitate the context between the interviewer and the sample. Based on figure -08- it is concluded that most frequent words appear in the job analysis are: schedule, repetitive, sitting, challenges, technology, condition, platform, departments, noise level, responsibilities, experience, motions, knowledge assistance, act, computer, required, Long hours, connected, essential equipment, information, Process,

tasks, work, performance, electricity, accounts , tools, job needs, role axe, scale, working, issues, start staff, perform, physical, position, internet, network, workplace, duties, typical, training, think, problem, lighting, obstacles, technical, society, administration, communication, improve, ensure, description, environment, servers, concentration, request, skills, order, evaluation, management, access, lifting, causes, existing. These terminologies refer to the duties and responsibilities of a specific job position, the risks and hazards associated with it, the skills and abilities required to perform the job, and other relevant information.

Table -09- Word frequency query results « 20 words exact match »

Position	8	25	2,00
Equipment	9	14	1,12
Questions	9	12	0,96
Describe	8	10	0,80
Performance	11	10	0,80
Internet	8	9	0,72
Physical	8	9	0,72
Required	8	9	0,72
Training	8	9	0,72
Obstacles	9	8	0,64
Responsibilities	16	8	0,64
Typical	7	8	0,64
Communication	13	7	0,56
Essential	9	7	0,56
Information	11	7	0,56
Process	7	7	0,56
Technical	9	7	0,56
Computer	8	6	0,48
Interview	9	6	0,48
Knowledge	9	6	0,48

This table -09- represents Word frequency query results « 20 words exact match the word “responsibilities” class the first in terms most frequent 20 words match exactly the meaning of job analysis which is aligned with the Task-Oriented Job Analysis model that focuses on identifying what a worker actually does. In contrast, the word “position” was the most prevalent in terms of the number of sources (25) and the weighted percentage 2.00%, signifying the importance of job or position as a key concept in the perspective of Job analysis. Previous studies like (Krogstie, 2024) have shown that successful work analysis begins with an accurate identification of the work location, which is supported by these findings. This factor aligned with the objective of the study.

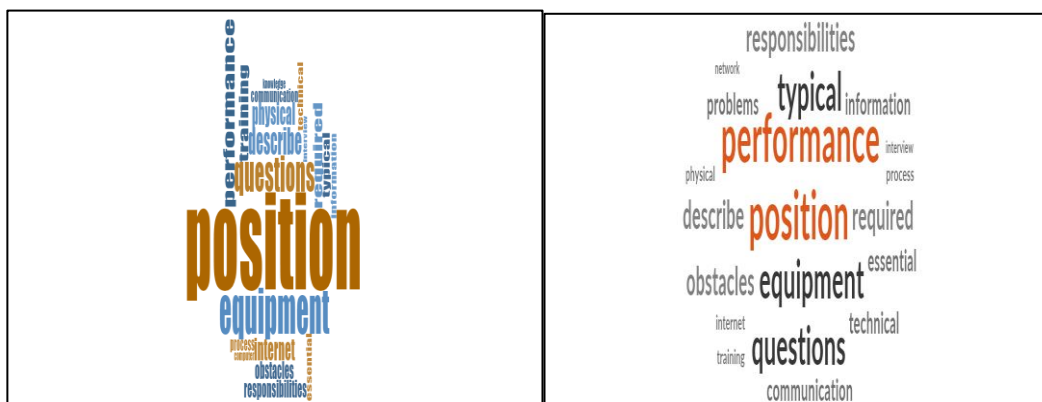


Figure -10- Word cloud of the term “Position”

The word cloud in figure -10- reflects the importance of the term position, as it appears the most frequently occurring term, indicating the fundamental role of job analysis in both sectors, also the other terms: "Performance, Responsibilities, Work Environment, and Barriers" reflect the job description's focus on the proper understanding of the job position. When this is related to the position of Chief of Information System in both sector, the interconnections become clearer: performance is associated with ensuring the reliability and security of information systems, responsibilities extend from strategic planning to daily management tasks, the work environment is influenced by technological developments and available resources, and barriers are often represented by financial limitations, obsolete tools, and administrative delays. This highlights that the concept of position is not limited to a theoretical level but is inserted in the practical and operational dimensions of organizational positions.

Table -11- Word frequency query results « 30 words and its synonym »

Word	Length	Count	Weighted Percentage (%)	Similar Words
Activities	10	92	2,11	activating, activities, activity, assistance, condition, construction, development, direction, employment, engineering, existing, forward, function, helpdesk, intervention, irregularity, location, maintenance, measure, operation, participation, perception, position, procedure, process, service, services, situation, technology, training
communication	13	90	1,44	account, challenge, communication, condition, describe, description, diplomat, direction, information, interview, measure, messaging, network, position, qualification, question, request, require, resolution, section, service, understanding
Computer	8	18	0,60	computer, construction, operation, process, resolve
Condition	9	46	0,70	activity, condition, dependence, development, involvement, ordinary, participation, position, problem, qualified, security, situation,

				weather
Connected	9	19	0,60	associated, communication, connected, connection, connectivity, involvement, related, service, supplement
Creates	7	16	0,62	creates, creating, determine, elaborate, engineer, overcome, perform
Effectiveness	13	15	0,66	effected, effectiveness, effects, efficient, establishments, perform, purchase
Equipment	9	26	1,47	equipment, lighting, monitor, printer, technology
Evaluated	9	13	0,61	challenge, critical, evaluated, evaluation, measure, measured, measures, respect
Improve	7	14	0,53	additional, condition, development, improve, maintenance, optimize, service
Information	11	38	0,75	account, condition, describe, directory, elaborate, example, general, information, irregularity, respect, schedule, standing
Knowledge	9	75	1,77	condition, direction, example, experience, general, inefficiency, information, knowledge, operation, perception, position, problem, process, purpose, respect, understanding
Located	7	45	0,70	development, direction, environment, located, location, opening, position, section, setting, situation, workplace
Messaging	9	58	0,74	account, challenge, condition, description, direction, information, messaging, position, problem, qualification, question, request, resolution, understanding
Natural	7	12	0,82	establishments, natural, physical
Network	7	18	0,68	internet, intranet, network, networks
Obstacles	9	10	0,72	obstacle, obstacles
Performance	11	24	0,64	execution, function, functions, operating, operation, perform, performance
Position	8	47	0,67	certain, concentration, condition, direction, forward, intervention, located, location, position, priority, respect, seniority, setting, situation, standing
Problems	8	9	0,53	problem, problems
Process	7	46	1,06	activity, condition, connection, construction, coordination, development, execution, operating, operation, perception, performance, procedure, process, processes, resolution, scanning, understanding, working
Questions	9	32	1,55	challenge, interview, interviewer, motions, problem, question, questions, request
Regular	7	16	0,52	regular, regularly, standard, standing, typical
Related	7	50	0,82	communication, connected, connection, coordination, direction, function, inconsistency, involvement, position, productivity, related, relationship, security
Required	8	28	1,29	demanding, demands, essential, expectations, involvement, involves, necessary, require, required
responsibilities	16	15	0,85	answers, reliability, respect, responsibilities,

				responsibility, responsible
Systems	7	24	0,74	configuration, general, internet, intranet, network, platform, systems
Technical	9	12	0,63	technical, technology
Typical	7	14	0,66	regular, typical, typically
Working	7	52	0,75	central, employment, exercises, function, functions, intervention, location, operating, operation, position, procedure, resolve, service, services, working, workplace

Table -11- represented “most frequent 30 words and synonyms “Word”, “Length Count”, “Weighted Percentage”, “Similar Words” the words demonstrate in the table are: activities, communication, computer, condition, connected, creates, effectiveness, equipment, evaluated, improve, information, knowledge, located, messaging, natural, network, obstacles, performance, position, problems, process, questions, regular, related, required, responsibilities, systems, technical, typical, working. These words related to the job analysis model highlighting its outcomes, where it split the job analysis process. A balance between industrial terms (technical, internet, process) and skill/knowledge terms (training, communication, knowledge) expresses the comprehensive of the job analysis.

- **Word:** most frequent 30 words in the both interviews.
- **Length count:** indicate the number of times for each term and its length related to job description.
- **Weighted Percentage (%):** a method of calculation represent a particular item and its importance or frequency that might be used in job description.
- **Similar word:** refers to terms, phrases that have similar meaning or same field, in this table it identify specific tasks, responsibilities, that accurate job analysis.

The first two terms “Activities” and “communication” has the largest weighted percentage 2, 11% and 1.44%, with the most frequent time counted “92 to 90” as the table presented. On the contrary the least frequent two terms are “technical” and “problems” with weighted percentage between 0.63% and 053% and “12 to 09” repeated time.

- **Comparison of Key Factors:**

Table-12- Comparison of Key factors between both positions

Key Factor	Job Position n=1 (economic sector)	Job position n= 2 (public employment)
Tasks & Activities	Diagnosing and resolving IT issues, maintaining PCs and servers, managing server security, and providing technical support.	Administering networks, maintaining servers, resolving connectivity issues, and ensuring interdepartmental internet access.
Responsibilities	Technical problem-solving, user support, security oversight, and system maintenance.	Network troubleshooting, server administration, and ensuring continuous network operation across departments.
Workplace Environment	Quiet, clean, and technologically equipped with regular ergonomic assessments.	Generally quiet but physically demanding due to extended screen time and on-site mobility
Work Timing	Fixed hours (08:00-16:30); from Sunday	Regular working hours from (08:00-

	to Thursday, occasional on-call duties require flexibility.	16:30); physical presence needed for departmental visits; occasional extended sitting.
Salary	Baise salary + unsanitary work allowance + professional experience compensation + Individual performance bonus + Meal allowance + zone A Location allowance + Responsibility bonus + CNAS contributions + family allowances + Income tax withhold (IRG) + Night/Security/Life & death Insurance contribution.	Baise salary + Individual performance bonus+ Compensation for shared technical expertise + Compensation for support for management activities + Compensatory lump sum grant + family allowances + CNAS contributions + Income tax withhold (IRG).
Physical movements	Low physical strain; ergonomic setup reduces risk of musculoskeletal issues.(continuous sitting + hand and finger movements + screen staring + light bending)	Low physical strain continuous sitting + hand and finger movements + screen staring
Tools & Resources & equipment/ furniture	Office (02) + closet (02) +High-speed internet + modern PCs (02) + laptop (02) + keyboard+ mouse+ control unit + paper files + advanced printers-all effective and well-maintained + phones + Network patch cabinet + office for consumables + electrical cabinet + high quality office chair + wired telephone IP32 (03)+ server (02)	Extranet+ modern PCs (01) + desktop +keyboard+ mouse+ control unit(02) + paper files+ safe+ chair (02)+ cabinet closet + small closet +office+ intranet+ internet cables
Role Perception	Technical backbone with underappreciated communication challenges; essential but operationally hindered.	Central to infrastructure functionality; respected across departments; stress from outdated systems and reactive demands.
Professional Development	Ongoing training necessary due to rapid tech changes; lacks structured evaluation criteria.	Continuous learning encouraged; supported by a structured evaluation scale for progress tracking.
Position Classification	Technical specialist requiring engineering background and problem-solving capacity; moderate autonomy.	Network administrator role requiring IT engineering background; higher autonomy and cross-departmental interaction.
performance evaluation	<p>Evaluation ../20 points</p> <ul style="list-style-type: none"> • Management skills: <ul style="list-style-type: none"> - planning and organization - decision - control - delegation - management of the development of teams and people • Inter communication: <ul style="list-style-type: none"> - communication skills - animation of the work teams • Personal skills: <ul style="list-style-type: none"> - autonomy and sense of initiative - dynamism in work 	<p>Evaluation ../30 points</p> <ul style="list-style-type: none"> • Respect for the rules of public discipline • Commitment and perseverance • Pay attention to carrying out tasks • The spirit of communication and human relations • Speed in executing tasks
Physical conditions	<ul style="list-style-type: none"> - Temperature (regular) - Lighting (due to Dr instruction) - Ventilation(only through window) - Noise (due to prefabricated office) - Humidity(no mention) - furniture and equipment(good 	<ul style="list-style-type: none"> - Temperature (regular) - Lighting (simple) - ventilation - noise - humidity - furniture and equipment

	quality)	
Office	<ul style="list-style-type: none"> - Office where the employee job position situated - Office for the servers (02) - Consumable office - Office storage (stationery and electronics) 	<ul style="list-style-type: none"> - Office where the employee job position situated - Office for the servers - Sharing office for the server in FSSH department

10. Findings

- ✓ **Description of Job 1:** The interview conducted by the researcher with B.D an employee in the economic sector Sonelgaz in the administration office, aimed to update the job description and analyze various aspects of the role. The Information Technology (IT) support role is a multifaceted position that encompasses a broad range of responsibilities, including the maintenance and upkeep of PC systems, diagnosis and resolution of complex information technology issues, provision of expert technical support, and strategic management of server security. On a daily basis, support specialists engage with users, employing a structured and methodical approach to problem-solving and troubleshooting. However, despite the importance of effective communication, internal communication processes within the organization often pose significant challenges, negatively impacting the efficiency and productivity of critical tasks such as account management. Fortunately, the essential tools required for the job, including state-of-the-art computers, high-speed internet connections, and advanced printers, are highly effective and well-maintained. To be successful in this role, a strong foundation in engineering is essential, with ongoing training and professional development being necessary to keep pace with the rapid evolution of information technology. The work environment is characterized as relatively quiet and comfortable, with regular ergonomic assessments conducted to ensure employee well-being and prevent injury. Working hours are fixed, spanning from 08:00 to 16:30, with occasional on-call duties requiring flexibility and adaptability. While performance evaluations are conducted regularly, they currently lack clear standards and metrics, highlighting an area for improvement in the organizational framework.
- **Description of Job 2:** The interview, conducted by the researcher, aimed to determine the job position by analyzing it for a worker in the public employment sector at the University of L'Arbi ben M'hidi – Oum el Bouaghi. The interview focused on the duties, responsibilities, and working conditions of the interviewee, B.T an employee in the university administration tower, who oversees the computer networks section. Tarek's primary duties include network administration, server maintenance, and troubleshooting issues. A typical day involves managing tasks and moving between departments to ensure internet connectivity, which is crucial as it supports all university departments. He identified obstacles such as power supply issues and fiber optic cuts that disrupt service, suggesting investments in training staff to maintain aging equipment. Essential tools for his job include hardware and software for network security, rated highly in effectiveness. Qualifications required for the role involve a degree in Informatics and IT engineering, along

with ongoing training on network advancements. The work environment is generally quiet but requires high concentration, with regular working hours and some physical demands related to sitting for extended periods. Performance is evaluated by a designated scale, and common frustrations include connectivity issues and the physical strain from prolonged computer use.

- The main findings from both interviews are:
 - ✓ For task, duties, and responsibilities regardless the name of each one, the researchers noticed that there are similarities in both positions.
 - ✓ The tools and equipment's in Sonelgaz Company proof of how far new technologies have come, enable the sharing of knowledge associated with their coworkers and able a healthy workplace environment. In contrast the technologies used in public sector is Essential tools rated highly, but much of the hardware is aging; depends heavily on staff's technical upkeep.
 - ✓ Workplace environment is quite different from its organizational statue as the table shows the differences.
 - ✓ Concerning **question number (07)** worker in Public employment addressed two essential obstacles (electricity and fiber) both of these issues need to be addressed to ensure smoother and more efficient job functions. Possible solutions might include securing backup power systems (like generators or UPS devices) and working with service providers to improve the stability and maintenance of fiber optic infrastructure.
 - ✓ About the Physical movements in public employment Higher physical strain from prolonged sitting; reactive role can increase stress during network failures, the job include high concentration with prolonged sitting and frequent movements of hands, accountable timing during answering question (from 10 to 15 MN) this observed when the researcher asked question , what the sample (02) says about it is that he keeps dealing with pc language which leads to lack of communication that effect both his life social relationship and coworkers interaction and communication. In the other hand the sample (01) gave her all attention to the questions and answering them carefully also working in a good atmosphere , also has a tolerant relationship with her colleagues that's due the rules of company but also to what the "Occupational Health Doctor" instructions where he came to visit them twice a year in order to conduct regular check up to prevent occupational diseases and also he check-up the physical conditions (temperature, lighting, ventilation, noise, humidity, furniture and equipment, space, angles of tools).
 - ✓ In the economic sector the employee has the privilege to choose his own office and co-workers, in contrast to public employment, where the structure and regulations of the department make the decisions.
 - ✓ Public employment managers face unique challenges due to their work environment. These challenges may influence their work a pattern, leading to a focus on immediate action rather than reflective practices in Economic sector managers which have privileges refers to their position, and authority.

11. Discussion of findings:

The present study identified two (02) competencies which are the only position in the two sectors” Chief of Information systems department” This indicates that there is a common set of competency domains which are important across the two sectors. The results clearly show there are more similarities than dissimilarities consider responsibilities, work tools, task and activities between both sectors. For dissimilarities salary calculations differ between the economic sector and public employment, where noticeable differences can be seen in the compensations. Economic sector has a lot of allowances and compensation related to unsanitary, meals and zone A Location. For professional development its parallel to each other which make the researchers notice that each job position. However, the job equipment and work conditions are different from several aspects such as “ergonomic equipment” in economic sector are essential, the employees’ health condition are vital, they have a specialists shows two times in a year and sometimes when they need him to show for the purpose of observing the work conditions and fix every flow happened examine: (Light intensity, Noise level, Temperature, Cold temperature, Furniture position, Ventilation, Seating position) , also he correct mistakes came from the employee about seating positions , equipment position and usage , during the job position. On the other hand, public employment equipment is not ergonomic, and sometimes when certain furniture is damaged and cannot be used, there are delays in responding to employees’ requests for better equipment, besides the work conditions is not suitable from a scale of ../10 the worker hand it 5points, which make the employee not comfortable in his own office.

12. Conclusion

The study revealed analytical comparison of both jobs position in public employment and economic sector, a critical similarities and distinctions across several dimensions including job satisfaction, productivity, work-life balance, and career advancement opportunities.

Job position in economic sector appears Job satisfaction to be relatively impacted by organizational inefficiencies particularly internal communication challenges, which make task execution delay such as account management. However, the availability of high-quality tools and a comfortable, ergonomically evaluated work environment contributes positively to satisfaction. On the other hand the job position in public employment is compromised by external operational issues, such as power failures and fiber optic cuts. These environmental obstacles directly hold back performance and cause dissatisfaction. Still, the job offers a sense of importance and valuable interaction, which may elevate motivation for other employees. To conclude, both roles demand and require high-level technical abilities and skills, job experiences are needed. But differ in their environment, equipment and the organizational operational settings and challenges.

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