

How Human Resources Development (HRD) Practices Support Projects in project-based organization's (PBO's)

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Submission : 25/06/2026

Acceptation: 19/09/2026

Publication :11/10/2026

Abstract

Nowadays, project management attracts significant interest from authors and scholars in the field of business administration, particularly among managers and executives. This attention arises due to the numerous attributes and aspects that present various obstacles to organizations striving for achievement. One fundamental area notably impacted by projects is the management of human resources, which necessitates specialized competencies to carry out tasks within designated timeframes and pre-established standards of quality, commonly referred to as the key elements for project success (time, cost, quality). This study emphasizes one of the crucial human resource management practices: Development and growth of suitable human resources that meet projects needs. We will examine this practice within a prominent organization specializing in the study and monitoring of roads and technical infrastructure (S.E.T.S) to assess the degree to which human resource development practices align with project requirements.

Keywords: human resource management, project management, development, training, competences

1-Introduction

Project management has attracted considerable interest from researchers and professionals in the field of business administration, especially among managers. This domain is marked by numerous characteristics and attributes that pose various challenges to organizations aiming for success. One of the most affected areas is human resources management, which requires the delivery of specialized skills to accomplish tasks within specified timelines and with predetermined quality benchmarks.

These components are recognized as the essential success factors of projects, namely time, cost, and quality. As a result, conventional human resources management practices are misaligned with project necessities, prompting a need for these practices to be adapted to satisfy project requirements. This study focuses on one of the pivotal human resources management practices: the development and growth of human resources that correspond with project specifications.

We will explore this within the framework of a prominent institution dedicated to the study and oversight of roads and technical facilities (S.E.T.S.) to evaluate the alignment of human resources recruitment practices with project needs.

2-Research problem:

we start this research from a single research hypothesis regarding the ability of human resource development practices to respond to the project requirements in the institution under study.

Which

leads to the following main question:

To what extent do human resource development practices meet the project requirements at (S.E.T.S)?

3-Research hypothesis:

We start from the hypothesis that human resource development and training practices meets the project requirements in S.E.T.S to a moderate degree.

4-Research aims:

The research generally aims to the following:

Through this study, we aim to achieve a set of objectives, which we summarize as follows:

- Providing a brief theoretical framework for taking a quick snapshot of human resource management in the context of projects
- Revealing the key points of influence and interaction between the two variables;
- Diagnosing the level and nature of practices related to human resource development in the institution under study;

5-Research importance:

The relationship between human resource acquisition practices and projects is considered one of the topics that has garnered significant attention in developed countries, especially after the popularity and success of projects. As for Arab or local studies (at the Algerian level) that link the relationship between the two variables, they are very few or almost non-existent and focus on specific aspects of the relationship between the two variables. This highlights the originality and importance of the research, especially since the study will be applied to a construction and public works institution, which is considered an important and strategic sector, and most institutions in this sector rely on projects (LCTP, CTP, SAETI, SETO, SETA, LEM, COSIDER).

Research methodology:

The descriptive-analytical method was relied upon to prepare the theoretical aspect of the research, based on the available references in both axes of the study: human resource management Development (HRD) Practices and project management. This was done to grasp the theoretical aspect of the subject. The case study method was employed using descriptive statistics and reviewing the institution's documents and reports, as well as meetings with the managers, both for analysis and for discussing the results. The research was divided into two axes:

6-The first axis: the theoretical framework of the research

6-1-Changes and Challenges facing human resources management in projects

Projects are temporary organizations and therefore every time a new project or program is started, it creates pressure on the organization, and pushes the HR department to carry out non-routine, variable and project-related processes

The need to change human resource management practices in the presence of projects, due to the emergence of imbalances when following traditional practices and through that many researchers questioned (Sydow, 2021) (Corriveau, 2009) (Huemman & Gareis, 2021) (Söderlund & Karin, 2011) (Zannad, 2009) (Matthews, Stanley, & Davidson, 2017) in the ability of human resources management in traditional ways in the presence of projects and emphasize the need of the change human resources must adopt new practices and roles required in project management in line with:

- **The large number of projects:** Running a large number of projects at the same time requires the organization to have a significant reservoir of competencies in order to ensure its success.
- **Difference between projects:** Each project has certain goals and characteristics that differ from one project to another, and therefore individuals must possess high and diverse

competencies to enable them to succeed in various projects and prepare for projects with changing specifications every time.

– **Project dynamics:** Projects appear in different environments and regions, and at multiple times, which must accustom individuals to work in different environments, conditions, and times.

– **Teamwork:** Work on projects is through project teams, where individuals must learn and fit into a teamwork, sharing roles and responsibilities in order to achieve goals.

The following table presents the most important characteristics and features of project management, which affect the management of human resources and the social aspect of workers

Table (01): Project Management Characteristics and Impact on Human Resources Management

Impact on human resource management	Project Management Features
- Special ways of managing require a decentralized organic structure, flexibility in organizing work, and prioritizing the needs of project teams over individual goals. - Human resources must possess a high level of competencies, experience, and knowledge. - Reassigning individuals after a project bothers them; their career paths remain opaque - Projects require high communication needs and the ability of the team to respond quickly to changes - Previous experiences must be benefited from and valued - The complexity of building and maintaining collaboration, cohesion and effective communication between individuals and project teams - Separation of authority and official responsibility and in projects	-Chaotic, dynamic and uncertain work environment -A temporary approach that includes beginning and ending -Unique context for each project -more goal, results, and customer-oriented approach -includes diverse, highly specialized and overlapping activities. -Create multidisciplinary teams -Dual power the actors in the project are subject to two powers -Management takes on a greater role in supporting the team, and working relationships are horizontal.

Source : (Management des RH en contexte de projets, 2009)

One of the most notable changes is the temporary nature of institutions in which the organization ends after completing the task or achieving its desired objectives. Hence the temporary nature not only of the structure, but also of the employment of its actors. This includes not only project-based institutions, but also crisis management or marketing campaigns and the organization of events

Now human resources management has become more and more adaptable and varies from one institution to another and from one environment to another, determined by many external and internal influences, on the basis of which human resources management forms its practices, tools, and levels of intervention.

6-2 Human resources Development in projects

Training processes aim to increase the team's collective effectiveness and provide knowledge for the project, in addition to project management is a good source of learning, but in return it remains capitalized, difficult to accumulate. As a result of the many and underdeveloped

competencies required by projects, organizations are continuously developing them both before and after the project, in order to ensure an effective project process, whether it is related to quality, time, or even costs, taking into account the efficiencies of teamwork as they are essential in the completion of the project. (Valérie Larose, 2009)

Each institution follows ways to develop the competencies of its members in projects, and in the following table, the most important approaches followed.

Table 13: Approaches to Developing People in Projects

Author	Proposed Approach	The Purpose of the Approach
White 1984	Understand and understand individual behaviour patterns at work through information sharing sessions	Increase individual knowledge and improve interactions among project team member
Wakasugi 1986	Circulation on project activities (task rotation)	Ensure good coordination between training and career path
Thornberry 1987	Learning through simulation	Developing problem-solving skills
Schlick 1988	Learning through teams	Raising skills and knowledge

Source: (B Fabi, 1992)

White places great importance on the goal of helping an individual gain more self-knowledge and providing them with the necessary tools to enable them to be more effective in relationships with other team members. To do this, he suggests training that consists of informational meetings that focus on creating awareness of different patterns of behavior at work.

Wakasugi also proposes a general human resource development program that aims to establish stronger links between training and career advancement, and he believes that the function of training is to develop the technical skills of individuals and improve the way they do their work. His "career development program" is based on three ways of learning: first, on-the-job training, where the employee is experienced to train newcomers; second, off-the-job training, where they are offered specialized programs; and third, the heterogeneity of tasks within the organization, or job rotation. Employees increase their knowledge through hands-on experience of various functions in the organization

Thornberry is interested in developing problem-solving skills in management engineers, and prefers learning by simulation, where individuals are placed in specific situations where they must analyse the problem and its causes, and develop and implement appropriate solutions. Schlick prefers training by working groups, where communication and teamwork can be developed, working groups are formed based on the training needs of the participants identified using a diagnostic network.

On-the-job experience and training are extremely important in project management and are preferably acquired gradually by undertaking different jobs at different levels for two main reasons:

First, the ability to obtain a comprehensive view of the project in all its technical, social, and political complexity is not acquired overnight, and second, the interdisciplinary learning of projects takes a long time to acquire and develop.

Human resources management through its activities must also be adapted according to the projects, including the training process, as all stages of the training process are adapted to the requirements of the projects, as well as the performance evaluation in order to know the gap by evaluating the weaknesses and shortcomings achieved in the project, and the feedback and criticism of customers is considered as a back feeding of the training process (Vivien, 2006, p. 15) According to *Boudes & Others*, through their treatment of the training processes in the project, came up with suggesting six pedagogical specificities that should be met in the formulation of the training program (Boudès, 1997)

1- The training process is within the institution (internally): The training process when it is in the institution and in the field is better than external training, because the training within the institution enables it to take into account the collective aspect, which is considered one of the components of project management.

2. Combining internal practices with external theories and expertise: The contribution of external researchers and experts in the work and pedagogical theories is an important source that the institution should benefit from in the field of its projects in order to keep pace with the developments, and it should also be aware of the expertise and experiences of the leading institutions in the same sector, and compare them with the internal practices of the institution.

3- Adopting a training-application method: One of the classic training problems is the disconnect of the image for the trainee within the framework of the training process because it is far from his field of work, where the trainer imposes his examples and is based on certain areas that hinder the delivery of the idea to the trainees, so this method relies on the direct interaction in the project between the two parties in order for the training to be understandable and any obstacles that appear are answered directly by the expert or trainer, which facilitates the training process and increases its effectiveness.

4. Inclusion of procedural and organizational training for project management: Since project management requires procedural and organizational administrative skills on the one hand in project management, and in line with that, the training processes are based on two aspects: procedural specialized in project management such as: (presentation and explanation of the project work process, model documents, indicators and dashboards of project leadership, programs and automated media for project management) and organizational that focuses on the administrative aspect and how to lead within the project framework, such as: (Problem Solving Techniques, Conflict Management, Managing Meetings), in the field when managing projects, we should not differentiate between procedural and organizational training.

5. Adapting training and projects to the career path: Individuals working in projects should not be completely isolated from the organization and should not be familiar with the policies, internal laws, and procedures for managing their career path and development, but rather need courses in order to inform them of the various procedures in force in the organization.

6- Benefiting from the accumulation of knowledge and the difference of projects: In order for the institution to benefit from its experiences in projects, it must have a knowledge department, as it

must store all knowledge and best practices in the memory of the institution in order to be a cumulative process that enables the institution to benefit from it and disseminate it to new individuals or those who did not face such difficulties, which makes the experiences and experiences valuable and exploitable, and individuals must also be urged to adopt a culture of dissemination and sharing of knowledge and teamwork.

Through the alternatives available to the institution in choosing the appropriate training methods for projects, especially those that envisage direct experiences in the field, which also encourage friction and teamwork among project members, we should not neglect two types of competencies that must be trained for both management workers and supporting activities, and for individuals working in projects.

Workers in management within an organization working on projects must have at least a minimum of knowledge related to projects and how they work and their objectives in order to help the success of projects, while the individuals present in projects are mostly engineers, so they must have knowledge of management, management and decision-making as a project leader has a team at his disposal, technical knowledge alone is not enough to manage the team, and therefore he must have managerial and leadership competencies in order to be Active.

Also, some organizations, such as (HP), lost some technicians who were distinguished in the technical field, but over time they moved to positions that are considered more managerial than technical, which led to the loss of their technical experience and skill due to their training and promotion to managerial positions, so the organization must identify its training needs from the beginning in a way that makes it maintain its main goal of the success of projects.

7- The second axis: Applied Study

In this theme, we discuss a brief presentation of the company with a focus on diagnosis, brief description, tools used in the study, presentation, and discussion of the findings.

7-1 Definition of the institution under study (Société d'études technique de Sétif (S.E.T.S)):

The company is a multidisciplinary study office, affiliated to the GEICA complex, with its social headquarters in the wilaya of Sétif. It was established in 1979 by Decree No. 79 of 28/07/1979 and converted into an economic public company with EPE/SPA shares, on 15/11/1989 as a public economic institution under the supervision of the Ministry of Public Works. The company offers personalized services to meet the various expectations of clients in the field of transport infrastructure engineering including preliminary projects, execution projects, soil and foundation studies, material studies, in collaboration with renowned experts and specialists, particularly in the fields of geotechnics, hydraulics, structures, and materials. Her main work is projects, and currently SETS manage more than 400 projects.

7-2 Data collection methods

In order to complete the study, a set of tools were relied upon in order to collect information, analyze it and reach the results, which are:

- **Questionnaire (form):** The questionnaire or form in general is a list that includes a set of questions prepared accurately answered by a number of individuals who make up the sample of the study, and the questionnaire is considered one of the most important and accurate methods of research and data collection. The closed questions method was adopted, specifically the use of the five-point LIKERT scale, which is considered one of the most prominent measures used to measure opinions for ease of understanding and balance of its scores, where respondents express their agreement with each of the questions according to five degrees.

-Sample and study population: The study population is the technical workers of the Technical Studies Company in Setif, who numbered 325 workers, while the sample was adopted stratified random sample and the sample size was determined on the basis of the method (Krejcie & Morgan) and the sampling error was determined by 7%, and on this basis, and thus we get the sample size of the study estimated at 123 individuals, i.e. by 38 % of the study population, which is a very representative percentage, since the population is almost homogeneous, 67% of the tires, and 21% of the technicians, 105 forms were retrieved and 18 forms were unanswered.

- David Autissier & Blandine Simonin Model for Evaluating Human Resource Management Practices: This model is used to evaluate and scrutinize human resource management practices and their impact on the performance of the organization's business, so that human resources practices are measured from two aspects: the first is in terms of the extent to which the practice is applied by the HR department, and the second aspect is the extent to which the practice affects the performance of the organization.

Table (03): Human Resources Management Practices Evaluation Form

Practices	Practice Applied in the Enterprise		The importance of practice for the performance of an organization	
	Yes	No	Weak	Strong
Practice No. 01				
Practice No. 02				
Practice No. 03				

Source: (Simonin, 2009, p. 87)

The drip is as follows:

Table (04): Scoring Human Resources Management Practices

Practice Application	The Importance of Practice	Drip
Applied	Weak	4
Applied	Strong	3
Not Applicable	Weak	2
Not Applicable	Strong	1

Source: (Simonin, 2009, p. 95)

In order to identify the most supportive human resource management practices for project management, models of previous studies were relied on (Jain & Gian gréco, 2018), (Khan & Rasheed, 2015) (Masood, 2010) (Baker, Murphy, & Fisher, 1997), (Müller & Turner, 2010) which were linked to the subject of the study, where (97) practices were identified and classified, and (12) practices were identified that support the projects that were most involved between the studies. They were selected and divided on the basis of the research, and the model was adapted according to the requirements of the study as follows:

Table (05): Human Resources Management Practices Evaluation Form

Practices	Practice Applied in the Enterprise		The Importance of Practice for Project Management	
	Yes	No	Weak	Strong
Practice No. 01				
Practice No. 02				
Practice No. 03				

Source: prepared by the researcher based on a model (Simonin, 2009)

7-2-1 Developing Human Resources in SETS

The career path of workers begins from the moment they join the company, where they are assessed and involved in various training courses relevant to their positions

Section I: Competency Assessment

The company evaluates the performance of all workers once a year, except for those who have not been employed for more than 6 months, as well as workers who are integrated within the framework of pre-employment contracts, and this is in accordance with the collective agreement in force, the competencies are evaluated directly between the worker and the direct supervisor through the evaluation cards (fiches d'évaluation des compétences), which are divided into 6 categories and each category has a group of work positions (engineers, project management officers, administrative officers, administrative staff, support assistants, and assistants). Technicians), where each card contains a set of criteria, and is divided into two parts, one part is drip on the basis of a quadruple ladder, and another part is common among all the evaluation cards, usually the process is held at the end of each year and the cards are retrieved at the level of the human resources department in order to analyze them and grade workers based on them.

Section Two: Identification of Training Needs and Preparation of the Training Program

In addition to the evaluation results, need cards for training courses are sent by officials and department heads expressing their needs and the needs of their respective teams.

At the beginning of each year, a meeting is held between the central managers (Director of Shared Resources, Project Manager, Director of Engineering Resources, Head of Human Resources Department, responsible for training) in order to prepare the annual training program (Plan de formation annuel), which contains the training courses programmed for the year N+1. After the preparation of the program, it is approved by the General Manager, and the company presents its needs to the various training institutions in order to receive the best offers. Standards including:

- The extent to which the courses are aligned with the needs of the company.
- The experience of trainers, experts and consultants and their relationship with the subject of training courses (this is done by comparing their CVs after being requested from the training institutions).
- Pedagogical and material costs of the courses.
- Training institutions that have been dealt with before and have a positive evaluation.

The company also faces another challenge, especially since the company is subject to the code of procedure for contracts and orders, and therefore it is limited to the selection of training institutions to the extent that it does not exceed an amount of (3,000,000.00 DZD) for the total costs of all training courses, and above the mentioned amount, the company is obliged to conduct tenders and compare the offers of the training institutions through the table of comparison of offers (Tableau comparatif des offres).), has a set of characteristics to compare institutions, and the bet here is that the company is not able to choose the appropriate training institutions for its needs, especially the technical ones, which are usually high costs.

Section Three: Conducting and Evaluating Training Courses

The training courses are held either internally or externally at the level of training institutions, where trainees are informed before the start of the training courses through announcements about the dates and location of their conduct, and they are informed of any changes in this regard.

Immediately after the completion of the training courses. It puts the company at the level of workers. Course Assessment Cards as soon as they end. (Fiche d'évaluation à chaud) and measures. The level of the worker's satisfaction with the course, which includes a set of criteria on a four-step scale, advance planning and management of the course, the atmosphere of the training course, the extent to which the trainer adapts to each trainee, the content of the course and its

benefit, and then open suggestions on other points that the trainee wishes to address and benefit from.

Then, depending on the quality of the course from three to six months, the post-evaluation card (Fiche d'évaluation à froid) is sent to each trainee's administrator to assess the extent to which the trainee has benefited from the course through a set of criteria based on a quadruple scale.

After retrieving the cards at the configuration administrator level, he calculates the rate of each cycle and divides it into four levels. Other. Completely unsatisfactory, unsatisfactory, satisfactory, very satisfactory.

Knowledge Management: As the Head of the Knowledge Development Department, he has been organizationally pursuing the Engineering Resources Directorate whose main mission is to provide scientific and technical supervision and support to the structures and all departments and to benefit from project experiences, in order to build sustainable knowledge in the company's professions

7-3 Statistic analysis results

7-3-1- Developing human resources axis: This next table includes the items of human resources development, which represents the second dimension in the human resources management axis, which included (14) paragraphs distributed over two components (evaluation (7 items), training (7 items)), we see through the table that the arithmetic average of the second dimension reached (3.14), i.e. with an average degree of acceptance, and with a standard deviation of (0.783), which was less than the correct one, and this indication indicates that there is a homogeneity or similarity in the answers of the sample members, and what confirms This high estimate is the average difference between this dimension and the value of the test adopted in the hypothetical mean estimated at (3) with a difference of (0.14), and the value of t at this level of difference was (1.842), which is statistically significant at the level of (doubt) (0.068) less than (5%), and this indicates a moderate degree towards the extent of the company's orientation towards the policy, training, and worker development, and for further clarification, we present the results of the statements of this dimension as follows:

Table (06): Analysis of the Second Dimension Statements: Human Resources Development

N°	Question	Arithmetic mean	Standard deviation	Average difference	t-value	Morale level	Appreciation
Human Resources Development							
1	I was evaluated immediately after I was hired by the company	3,30	1,143	0,295	2,647	0,009	Medium
2	Direct Administrators Participate in the Annual Evaluation Process	3,34	1,292	0,343	2,719	0,008	Medium
3	I am evaluated on the basis of the projects I belong to	3,16	1,136	0,162	1,460	0,147	Medium
4	During the evaluation process, I talk to the direct managers .comfortably	3,21	1,230	0,210	1,745	0,084	Medium

5	During the evaluation process, my direct supervisors participate in setting goals	3,15	1,239	0,152	1,261	0,210	Medium
6	I am informed every time my results after the evaluation	2,80	1,390	-0,200	-1,475	0,143	Medium
7	I see that my evaluation process was objective	3,08	1,207	0,076	0,647	0,519	Medium
8	I participated in training courses immediately after my employment	2,69	1,375	-0,314	-2,342	0,021	Medium
9	The company engages me in training courses on an ongoing basis	2,35	1,201	-0,648	-5,526	0,000	Low
10	The training courses I have done correspond to the tasks of the projects I work on	2,89	1,347	-0,114	-0,870	0,387	Medium
11	What I have learned in formative rotations can be applied directly to my work	3,03	1,348	0,029	0,217	0,828	Medium
12	The company seeks to favor field training	3,26	1,209	0,257	2,179	0,032	Medium
13	I share with the rest of the company's workers the knowledge and techniques I have acquired through training courses	3,50	1,279	0,495	3,966	0,000	High
14	Through my work on projects, I gained new competencies	4,23	0,750	1,229	16,783	0,000	Very high
	Human Resources Development	3.14	0.783	0.140	1.842	0.068	Medium

Source: Prepared by the researcher based on the outputs of SPSS.

Statements (1,3,2,4,5,6,7) reflect the evaluation of human resources, as we can see from the table that the statements (1,3,2,4,5,7) have average arithmetic averages (3. 3.15, 3.21, 3.16, 3.34, 3.30, 0.08, 1.15, 0.20, 1.21, 0.16, 1.29, 1.14) compared to the hypothetical mean and a positive

standard deviation (0.20, 0.15, 0.15, 0.16, 0.34, 0.29) and the t-values that amounted to (0.64, 1.26, 1.74, 1.46, 2.71, 2.64) at the level of significance (0.519, 0.210, 0.048, 0.147, 0.008, 0.009) respectively for the statements, and the sixth item related to the The factor about the result of his evaluation, so according to the table, the average value was (2.80) and a standard deviation of (1.39) which exceeded the correct one and the average difference of (-0.200) and (-1.457), at the level of significance (0.143), and here the average value is lower than the other statements, due to not informing them of the results of their evaluation or not fully participating in the evaluation process.

With regard to the second element, which includes the training, is represented by the phrases (14, 13, 12, 11, 10, 9, 8), where we see through the table that the items (10, 9, 8) that showed average and close to low arithmetic averages, we see that the two phrases (10,8) come with an arithmetic average (2.89, 2.69), and a standard deviation (1.34, 1.37), which exceeded the correct one, and an average difference (-0.31, -0.11) with a t-value (-2.34, -0.87), which is considered negative, at the level of (0.021, 0.387). With regard to item (8), the non-participation of workers in training courses immediately after their evaluation is due to The other reason is the lack of direct evaluation of workers after their employment because the evaluation process is annual and has fixed procedure times, as for item (9) which highlighted a low arithmetic average (2.35) with a standard deviation of (1.20) who exceeded the correct one, and the respondents' answers differed with an average difference of (-0.64) with a t-value Negative (-5.52) at the level of morale (0.000) Here we see a contradiction between the workers' answers about the extent to which they carry out training rotations on a continuous basis, for example, the workers of the (Les projets d'études) projects benefit from the training courses more than the workers in the follow-up projects (Les projets de suivi), the study teams with the difference and diversity of projects need technical competencies, programs, tools. , on an ongoing basis, requires continuous cycles, unlike the follow-up teams, whose work depends mainly on monitoring and following up on the completion of the project. The more routine the work, the less there is a need for training courses, and the same applies to management workers whose work does not require new competencies at a continuous pace, while the two phrases (11,12) came with an arithmetic average (3.03, 3.26), a standard deviation (1.34,1.20), which exceeded the correct one, and an average difference of (0.02,0.25,0.25) with a t-value (0.21,21,217), at the level of significance (0.032,0.28). As for the preference for field training, which achieved an intermediate level, it is related to the training courses for equipment and machinery such as (topographic works, laboratory experiments, and machinery) Drilling and Excavation) which calls for direct field and applied courses. As for the two phrases (13,14), it came with an arithmetic average (3.50,4.23), a standard deviation (1.27,0.75), and an average difference of (1.22,0.495) with a t-value (3.96,16.78), which is considered high, at the level of (0.000) for both phrases, through the results we see that workers have a desire to share what they have acquired of knowledge and competencies and transfer it to their colleagues, and phrase number (14) is what the company should focus on and value, which is the extent to which workers benefit from new knowledge and competencies through their work in projects, where it appeared The arithmetic mean with a very high value (4.23), with consistency in the answers as shown by the standard deviation less than the correct one (0.750), and the t-value that reached (16.783). At the significance level (0.000).

7-3-2- Project Management axis: In the next part, we will address the analysis of the phrase of each dimension of project management by determining the general trend of workers' answers to (50) related to project success factors. Question Where we see through Table (06): The level of project management practices in the company based on the workers' answers was at a high level, so that the arithmetic average of the project management axis estimated at (3.59), which is considered high with homogeneity in the workers' answers, which is shown by the standard

deviation less than the integer (0.56), with an average difference of (0.59), and a t-value (10.41) which is a function of the degree of significance (0.001)

Table (7): Analysis of the questions of the dimensions of the project management

N°	Question	Arithmetic mean	Standard deviation	Average difference	t-value	Morale level	Appreciation
1	I am aware of all the particularities required to complete projects according to the requirements of the project owners (term sheet , completion agreement(	3,87	0,981	0,867	9,051	0	High
2	I am aware of the deadlines for the delivery of projects	3,8	1,196	0,8	6,853	0	High
3	I am aware of the cost cap that I should not exceed in order to complete projects	3,62	1,236	0,619	5,134	0	High
4	I am aware of the quality that entrepreneurs require in their projects	4,17	0,837	1,171	14,336	0	High
5	I am aware of the stages of the project in which I will intervene	4,2	0,825	1,2	14,903	0	Very high
6	I am constantly informed of the changes that must be made to complete the projects	3,77	1,002	0,771	7,885	0	High
7	I am aware of the technical limits that I should not cross in delivering outputs	3,98	0,93	0,981	10,808	0	High
8	I see the objectives of the projects as rational and achievable	3,5	1,039	0,495	4,885	0	High
9	Peaceful organizational structure does not constitute an obstacle to information exchange	3,42	1,116	0,419	3,847	0	High
10	Accomplish my tasks in projects with ease	3,35	0,94	0,352	3,84	0	medium
11	I deliver project outputs with all their technical requirements without any reservations	3,68	0,838	0,676	8,271	0	High
12	I have no difficulties in the early stages of projects	3,59	0,968	0,59	6,253	0	High
13	I have no difficulties during the final deliveries of projects	3,63	0,835	0,629	7,714	0	High
14	I rarely exceed the costs specified in the achievement goals	3,65	0,94	0,648	7,057	0	High
15	The time specified in delivering my outputs is enough for me	2,99	0,985	-0,01	-0,099	0,921	medium
16	My completed work is not subject to modification before its final	3,61	0,838	0,61	7,455	0	High

	submission						
17	I can work in a team with ease	4,28	0,826	1,276	15,828	0	Very high
18	I have no problems with) Direct Supervisor / Project Head(	3,95	0,944	0,952	10,333	0	High
19	I don't have problems working with the team	3,96	0,95	0,962	10,376	0	High
20	I receive assistance from the project leader to complete my tasks	3,47	1,152	0,467	4,149	0	High
21	I receive support from the project leader to solve the problems I face	3,62	1,004	0,619	6,32	0	High
22	The team I work with helps me solve my problems	3,73	0,923	0,733	8,144	0	High
23	I am quickly informed of the mistakes I made in my work by the project leader.	3,59	0,987	0,59	6,128	0	High
24	I continuously talk to the project boss about my achievements.	3,63	1,129	0,629	5,706	0	High
25	I am involved in making decisions related to the tasks and tasks assigned to me	3,59	1,035	0,59	5,846	0	High
26	There is mutual sharing of project information between team parties	3,6	1,006	0,6	6,113	0	High
27	Regular meetings are held with project team members.	3,26	1,083	0,257	2,432	0,017	medium
28	There is a good working relationship between the project team members	3,68	0,946	0,676	7,328	0	High
29	There is a good working relationship between the team members and the project leader	3,74	0,899	0,743	8,467	0	High
30	The team shares decisions with the project leader	3,57	1,036	0,571	5,65	0	High
31	Project leader participates with team members in problem solving	3,59	0,978	0,59	6,189	0	High
32	Problems are solved in a short period of time	3,42	0,907	0,419	4,734	0	High
33	Immediate decisions are made when problems occur	3,38	0,965	0,381	4,047	0	medium
34	I have sufficient tools and physical equipment to accomplish my tasks in the project (computer, measuring devices, ..)	2,77	1,137	-0,229	-2,059	0,042	medium
35	I have at my disposal an information system to know and	3,07	1,129	0,067	0,605	0,546	medium

	record progress reports at any stage.						
36	I have (programs, tools) to measure and follow up (budget , schedule)	2,97	1,033	-0,029	-0,283	0,777	medium
37	My tools and equipment work efficiently	3,03	1,023	0,029	0,286	0,775	medium
38	Senior management gives me sufficient authority to complete my tasks on projects	3,27	1,059	0,267	2,581	0,011	medium
39	The peacefulness of the organizational structure does not constitute an obstacle to the speed of decision-making	3,32	1,052	0,324	3,156	0,002	medium
40	I see that senior management puts in full confidence	3,89	0,824	0,886	11,013	0	High
41	I see that senior management supports my decisions in the field of project delivery	3,76	0,925	0,762	8,437	0	High
42	My needs are met by the administrative departments (EMP, public means, finance and accounting) with ease.	3,33	0,947	0,333	3,606	0	medium
43	Senior management shares with us the changes taking place in projects	3,44	0,999	0,438	4,492	0	High
44	Senior management supports us in case of problems or crises such as (frequent stops)	3,26	1,065	0,257	2,473	0,015	medium
45	The entrepreneurs' needs were clear	3,52	0,878	0,524	6,113	0	High
46	Project owners are informed of problems with projects	3,87	0,856	0,867	10,379	0	High
47	Project progress reports are sent to their owners periodically	3,91	0,867	0,914	10,802	0	High
48	Entrepreneurs are notified of changes that can affect the final outputs of projects	3,8	0,87	0,8	9,418	0	High
49	I have a good working relationship with entrepreneurs	4,05	0,777	1,048	13,819	0	High
50	I get a few reservations from entrepreneurs	3,76	0,791	0,762	9,872	0	High
	ALL	3,5979	0,5883	0,597	10,414	0,001	High

Source: Prepared by the researcher based on the outputs of the SPSS program (version 27)

We see from the table regarding the first dimension of project management, which is the extent to which the workers questioned are familiar with the information and objectives expected from the projects and disseminated them among all stakeholders in the project via communication, where questions from (01) to (09) highlighted the extent to which the work teams involved in the projects know the requirements of project owners, delivery deadlines, cost limits, technical limits, and the flexibility of the structure in facilitating communication and information exchange, and the results related to this dimension, which were positive and to a high degree, were as follows: The arithmetic mean (3.42, 3.50, 3.98, 3.77, 4.20, 4.17, 3.62, 3.80, 3.87), which missed the value of (3.41), and the standard deviation values of the questions respectively (1.11, 1.03, 0.93, 1.00, 0.82, 0.83, 1.23, 1.19, 0.98), and the mean positive difference which reached (0.41, 0.49, 0.98, 0.77, 1.20, 1.17, 0.61, 0.80, 0.86) and the values of t, which amounted to (3.84, 4.88, 10.80, 7.88, 14.90, 14.33, 5.13, 6.85, 9.05), which were all a function at the level of morale (0.000).

As for the second dimension, which is related to the competencies of workers required in projects, which are represented by questions from (10) to (19), through the previous table, we see that both questions (15,10) related to the ease of carrying out tasks in projects and insufficient time specified mm deadline for delivering project outputs, where the two phrases highlighted average results with an arithmetic mean (2.99,3.35) and a standard deviation (0.98,0.94) and what indicates homogeneous answers as it did not exceed the correct one and an average difference of (0.35, -0.01), with a value of t (3.84, -0.09) at the level of morale (0.921,0), through question No. (10) we see that there is a lack of certain competencies that make workers face difficulties in completing their tasks at the project level, which in turn affects the time it takes to complete their tasks in projects and this is highlighted by the results of question (15), as for the questions (19,18,17,16,14,13,12,11), which related to the quality and costs of projects and their outputs in terms of the delivery of project outputs were without reservations and are not subject to many modifications before delivery. For customers It also reflects the levels of behavioural knowledge of workers (Savoir-faire) in terms of the possibility of working in a team, which achieved a very high average estimated at (4.28), and this is a positive thing for the institution and what corresponds to question No. (15) after the motivation of the human resources axis, which also reflects the good relationship of workers with each other, and this is a strong point for the institution, and the same thing is confirmed by the two phrases (19, 18), which represent the levels of problems and mismatches between the direct supervisor or the project leader As well as the working group, where the results were as follows:

Arithmetic mean (3.96, 3.95, 4.28, 3.61, 3.65, 3.63, 3.59, 3.68), standard deviation (0.95, 0.94, 0.82, 0.83, 0.94, 0.83, 0.96, 0.83) which does not exceed the correct one and highlights the consistency of workers' answers with an average difference of (0.96, 0.95, 1.27, 0.61, 0.64, 0.62, 0.59, 0.67), and t-values were (10.37, 10.33, 15.82, 7.45, 7.05, 7.71, 6.25, 8.27) and all items were a function at the level of morale (0.000).

The third dimension in project management was the leadership and guidance of the project team, especially by the project leader, as he is a key party in the success of project management, especially in terms of supporting and accompanying the team in order to complete tasks, addressing errors and imbalances that occur, helping the team to solve the problems facing it, enabling the team to attend meetings and participate in decision-making, as well as ensuring a healthy work atmosphere free of conflicts for the team, and the phrases that measure the above highlighted the results to a high degree, except for Question (27), which showed an average result and aims at the phrase to the regularity of the meetings carried out by the project leader with his team, which are important and necessary in order to control the levels of progress in projects and address the obstacles that may face the team in completion, and represented 11 questions from (20) to (30) where the results according to the table were as follows:

The arithmetic mean (3,57,3,74,3,68,3,26,3,60,3,59,3,63,3,59,3,73,3,62,3,47) with a standard deviation (1,03,0,0,89,0,0,94,1,08,1,00,1,03,1,12,0,0,98,0,0,92,1,00,1,15) which is considered homogeneous and that did not exceed the one integer by a large percentage, with an average difference of (0,57,0,74,0,67,0,25,0,60,0,59,0,59,0,62,0,59,0,73,0,61,0,0,46), and t-values that were a function (5,65,8, 46,7,32,2,43,6,11,5,84,5,70,6,12,8,14,6,32,4,14) at the significance level (0.000), other than item (27).

The fourth item was the ability of the project leader and his team to manage and solve the problems they face and the speed of response in making decisions related to the problems were determined by three questions (33,32,31) with arithmetic averages (3,38,3,42,3,59), and a standard deviation that highlights the homogeneity of workers' answers (0,96,0,90,0,97) and the mediated difference reached (0,38,0,41,0,59), with t-values respectively (4,04,4,73,6,18) and was a function at the level of morale (0.000). The fifth dimension reflects the extent to which senior management supports and empowers workers with authorities, tools, programs and equipment. The company provides technical, material and moral support to the heads and project teams in order to succeed in project management and defined the phrases of this dimension from (34) to phrase (44) where the phrases (44,42,39,38,37,36,35,34), which represented the availability of equipment, measurement tools and programs for project follow-up, budget and schedule, and the effectiveness of these tools in measurement and control.

The two questions (44 and 38), reflect the extent to which workers are able to have sufficient powers, meet their needs from administrative departments, and the extent of their support by senior management in case of crises and problems, as well as providing an organizational structure that facilitates decision-making, as the results were average according to the table as follows: Arithmetic mean (3,26, 3,33, 3,32, 3,27, 3,03, 2,97, 3,07, 2,77) with a standard deviation (1,06, 0,94, 1,05, 1,02, 1,03, 1,12, 1,13), which did not exceed the one integer to a large degree, with an average difference of (-0,22, 0,06, -0,02, 0,02, 0,26, 0,32, 0,33, 0,25), and the values of t was a function (-2,05, 0,60, -0,28, 0,28, 2,58, 3,15, 3,60, 2,47) at the levels of significance (0,042, 0,546, 0,777, 0,775, 0,011, 0,002, 0,000, 0,015), while the questions (40, 41, 43) were with high averages, which reflect the extent to which the worker believes that management puts in him complete confidence and support his decisions in projects and participate in any changes in projects with an arithmetic mean (3,89, 3,76, 3,44) and standard deviation values (0,82, 0,92, 0,99) which did not exceed the correct one, with an average difference of (0,88, 0,76, 0,43) and t-values that were high (11,01, 8,43, 4,49) which were a function at the level of significance (0.000). As for the sixth dimension, which relates to the most important element in the stakeholders, which is the project owner or agents set by the entrepreneur, where the questions from (45) to (50) reflect the clarity of the needs of project owners, the nature of the relationship with them, communication, sending reports and project outputs, the extent to which they are informed of the changes and problems that occur in the projects, and the degrees of receiving reservations from them and the results were high and this is what they showed Results: Arithmetic mean (3,25, 3,87, 3,91, 3,80, 4,05, 3,76). Standard deviation (0,87, 0,85, 0,86, 0,87, 0,77, 0,79) which is considered homogeneous and did not miss the correct one, with an average difference of (0,52, 0,86, 0,91, 0,80, 1,04, 0,76), and t-values that were a function (6,11, 10,37, 10,80, 9,41, 13,81, 9,87) at the significance level (0.000).

7-3-2- Results of the analysis of human resources practices

Through the following table, the results of the analysis of human resources practices related to the acquisition of human resources show a positive role in terms of project management, which are presented as follows:

Table (08): The Impact of Human Resources Access Practices on Project Management

Number	Practices	Practice	The Impact of	Drip
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		Applied in the Enterprise		Practice on Project Management		
		yes	no	Less important	Mission	
Access to Human Resources						
01	The worker(s) are evaluated on the .basis of the projects they work on		X		X	2
02	The worker's achievements in the project are used as elements in the evaluation process (quality, costs, achievement, relationship with the .(customer, etc		X		X	2
03	The results of the competency assessment are relied upon when .reassigning workers to projects		X		X	2
04	Preparing and updating the competency reference periodically		X	X		1
05	The evaluation system is updated to account for completed projects		X	X		1
06	Training needs are based primarily on the results of the evaluation process	X			X	4
07	The specific training needs are realistic and based on the .organization's work strategy	X			X	4
08	The results of the training processes are measured by the worker's performance in the elements of the project (quality, costs, achievement, relationship .(.with the customer, etc		X		X	2
09	New knowledge and skills are transferred to employees, especially in projects, periodically		X		X	2
10	Participation in technical meetings for the transfer of knowledge among workers	X			X	4
01	The worker(s) are evaluated on the .basis of the projects they work on		X		X	2
02	The worker's achievements in the project are used as elements in the evaluation process (quality, costs, achievement, relationship with the .(customer, etc		X		X	2
	Medium					2,40

Source: Prepared by the researcher based on the answers of workers and managers

Almost the same applies to the HR evaluation and development practices, so that they themselves are subject to the processes and procedures (procédure d'évaluation des compétences), which the HR department must adhere to, and the first practices that we believe have not been taken into account, which is the evaluation of workers and project teams on the basis of the projects to which they belong and not on the basis of the positions they occupy. The five that the company uses are divided into work positions as explained earlier, and the evaluation items are based on the job incumbent's description card (Fiche De Poste) and not on the basis of the achievements and performance of the worker in this project on the one hand, and on the other hand, the company relies in the evaluation process except on the individual evaluation without paying attention to the collective evaluation, which in turn affects the performance of each member of the project team, and this is highlighted by both practices (1 and 2), Practice No. (3) shows that no exploitation is shown. The results of the evaluation process are supposed to give the levels of competence and weaknesses of each individual and therefore are necessary in the appointment of workers on projects, as well as for the two practices (4,5) where the competency reference (Référentiel des compétences) or the evaluation system (Système d'évaluation)) are not updated continuously and are in line with the completed projects and the level of competencies of the workers, which makes the evaluation system not provide results that support the projects.

Training and training processes derive their initial protests from the results of the evaluation cards, which is highlighted by Practice No. (08) that the company, according to the training process (Processus de Formation), evaluates the training courses (Les actions de formation) on the basis of the instant evaluation card (Fiche d'évaluation à chaud) which is filled out by the worker immediately after the completion of the training and post-production (Fiche d'évaluation à froid). The first is that the evaluation criteria for training programs all end with the phrase "..... The second point is that the person who does the post-evaluation is the direct person and not the project leader, the first person to evaluate the individuals directly in the projects is the project leader, and through the team's work, this reveals the shortcomings and mistakes committed by the team, on the basis of which the training needs are determined, but 69% of the respondents do not participate.

Table (09): The extent of the participation of project heads in determining the training needs of the projects they supervise

I am involved in the identification of the training needs of workers affiliated with me	Duplicates	Percentage (%)
I agree	16	30.7%
I disagree	36	69.2%
ALL	52	100%

Source: Prepared by the researcher based on the outputs of the SPSS (version 27) program

As for the knowledge management in the company, it is limited only to the technical meetings (conseils techniques) carried out by the project directorate in the event of problems or difficulties in completion, while the knowledge management in all its stages in the company is not done in an official manner (informal) but is between the workers and the teams themselves, so there is no capitalization or existing management of knowledge, but it is limited to the culture of exchanging experiences between the company's workers, and this has been observed through the practice test No. (8), while the rest of the practices in the Evaluation and training (6,7,10) which had positive results and supported the company's project management, which is also one of the strengths of

the Human Resources Management Department, and showed an average of (2,40) which is considered a low average in terms of human resources development practices.

8-: Hypothesis Testing

Hypothesis: To what extent are that human resource development and training practices meeting the project requirements at (S.E.T.S)

Null hypothesis (H0): human resource development and training practices meet the project requirements at (S.E.T.S) in a moderate degree.

-Alternative hypothesis (H1): human resource development and training practices meet the project requirements at (S.E.T.S) in a weak degree.

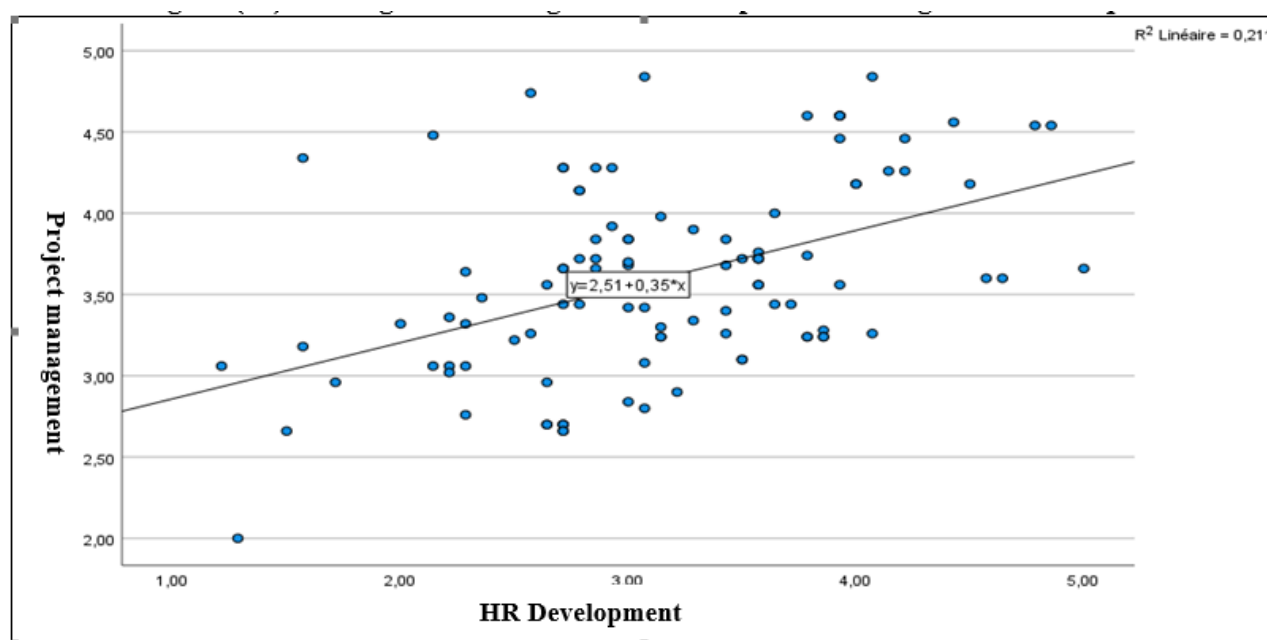
Table (10): Regression Analysis Results and Variance Analysis for Hypothetical Test

Table (16). Regression Analysis Results and Variance Analysis for Hypothesis Test									
State		T Test		β eta	F test		Correlation coefficient	Coefficient of determination	Adjusted coefficient of determination
	B								
		Transaction value	Morale level		Value of the coefficient of variation F	Morale level	R	R-two	R-deux adjusted
Constant	2.513	11.822	0.001	0.460	27.622	0.001	0.460	0.211	0.204
HR Development	0.345	5.256	0.001						

Source: Prepared by the researcher based on the outputs of the SPSS program (version 27)

In order to statistically measure the degree of impact, the following we will test the results of regression analysis and variance analysis through the figure and table.

Figure (03): A diagram showing the diffusion plate of the regression line equation



Source: Prepared by the researcher based on the outputs of the SPSS program (version 27)

We note through Table (10) and Figure (03), which represents the graph of the diffusion panel, the results of the simple regression test and variance analysis of the second sub-hypothesis, where we find that the correlation coefficient is equal to (0.460), which expresses a moderate correlation between human resource development and project management in the institution under study, and this indicates the importance of the effect of the independent variable (human resource development) on the dependent variable (project management), and we also note that the value of the determination coefficient of (0.211) is expressed in The development of human resources explains 21.1% of the changes in project management, while the remaining 78.9% is attributed to other variables that were not included in the linear regression model under study, and in order to confirm the statistical significance of the regression model as well, we find from the results of the variance that the value of the F test reached (27.62) at the level of significance (0.001), and therefore there is a positive relationship between the two variables.

This is confirmed by the value of t, which reached (5.256), which is greater than its tabular value of (1.660) at the significance level of less than (0.05), and the value of beta, which shows that each change in the independent variable (human resource development) by one unit leads to a change of (0.460) units in the dependent variable (project management), and therefore we accept the zero hypothesis H_0 , which states that the human resources development mechanisms respond to the requirements of project management to an average degree in the company (S.E.T.S). We reject the alternative hypothesis H_1 .

One of the functions of simple linear regression is to examine the strength of the relationship between the independent variable (human resource development and development) and the dependent variable (project management), in addition to framing this relationship in a mathematical model used in forecasting, and this mathematical predictive equation can be deduced through the previous table and figure as follows:

$$Y = B_0 + B_1X$$

$$Y = 2.513 + 0.345X$$

i.e: Project Management = 2.513 + 0.345 Human Resource Development**Results**

Through what was highlighted by the results of the analysis of best practices and the statistical study, we saw that the core of the company and its main driver are projects, and the person responsible for the projects is the Project Directorate and the Project Manager (Directeur des projets), who has a direct line with the general manager of the company. This provides him with flexibility and quick responsiveness regarding decisions related to project management and is considered one of the company's strengths, with effective delegation from the general management. This contrasts with the Human Resources department, which records a significant lack of flexibility in the structure and decision-making, especially since the department's hierarchical position in the company's organizational structure falls under the Shared Resources Directorate, making it structurally weaker compared to the Project Directory. This causes the Project Directorate to somewhat control or exert indirect pressure on the Head of Human Resources and their team, creating a set of challenges like Participation in some projects without knowing the availability of the necessary competencies within the company.

Compared to previous studies in the field The company places great importance on developing human resource competencies; however, the evaluation results on which the company relies are not based on project-related outcomes. The company does not regularly update the competency framework (Référentiel des compétences) nor link it to projects, and almost all training courses are conducted at the company headquarters rather than at the project level. Both (Söderlund & Bredin, 2006) suggest integrating and developing knowledge by identifying the current and future levels of knowledge and competencies of individuals, and implementing strategies to develop them and align them with project requirements. (Zannad, 2009) emphasizes the establishment of a competency framework to identify the competencies required in projects and the competencies needed for jobs, with a more precise division of individuals according to their specializations. This occurs immediately after recruitment and performance evaluation processes, and the evaluation system evolves with project management to ensure that the individual is more effective during the project phase, where they are assessed before, during, and after the project to provide feedback on their performance in the project and what they have gained post-project. (Loufrani-Fedida, 2016) also confirms that project team members should have opportunities to acquire and develop skills and competencies related to project management thru targeted training and mentoring programs, guidance, job rotation between projects, and exposure to different roles and responsibilities in projects. This is to facilitate knowledge exchange and encourage collaboration among project teams, and it can also contribute to the professional development of project team members, encourage collaboration, share best practices, and provide platforms for learning and communication.

Difficulties related to training and development (Bredin, 2006; Moutinho & Mouta, 2014; Samimi & Sydow, 2021; Stulgienė & Čiutienė, 2012): The company does not face difficulties directly related to training processes as its culture encourages training. The difficulty faced by the company regarding workers in business centers and project monitoring (Suivi) and those assigned to projects, especially in the southern regions, is that they cannot attend training courses due to their commitment to projects.

-Difficulties and evaluation problems (Turner, Huemann, Keegan, & Project Management Institute, 2008): The main issue in the evaluation process within the company is the evaluation criteria, which are not directly related to the worker's performance in the project. Consequently, the results do not reflect the actual needs and the gap in competencies required by the worker in

the project. The evaluation cards used do not accurately reflect the workers' performance in the projects.

Conclusion

Human Resources Management Department Despite the challenges the company faces in light of the projects, it makes a great effort to ensure the competencies required by the projects through intensive training cycles, meetings, and scientific days. follows the process the company sets from receiving the needs until ending training cycles Through research, we found we f that some of the practices that support project management conflict or are not in line with the current practices carried out by the company. Therefore, the company may submit projects that do not have the competencies in the specialty required by the project owner, which makes it face future problems in providing the necessary competencies for the project, which in turn may affect other project factors such as costs, feasibility, and the specified time for completion. However SETS aims and makes efforts through the Human Resources Management Department to adapt its practices to be more and more in line with projects.

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