



DOCTORAL THESIS

Psychological factors in Human Resources Management and Training to improve the efficiency of Public Administration in Greece

**Factores psicológicos y formación continua en la gestión de recursos
humanos para mejorar la eficiencia de la administración pública en Grecia**

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University of Cordoba

2024

TITULO: *Psychological factors in Human Resources Management and Training to improve the efficiency of Public Administration in Greece*

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Los factores psicológicos en la Gestión de Recursos Humanos y la Capacitación para mejorar la eficiencia de la Administración Pública en Grecia.

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(Mention should be made of the status of and progress on the thesis, as well as works and publications stemming from it)

D. Alexander Maz Machado professor at the University of Cordoba and Ms. M^a José Madrid Martín professor at the Pontifical University of Salamanca as directors of the thesis.

INFORM:

That the doctoral thesis authored by Ms. Angeli Paraskevi has been carried out under our direction and has followed the relevant methodological guidelines to respond to the problem posed.

The author has carried out an exhaustive literature review which, together with the relevant methodological strategies and the questionnaires and interviews conducted, has enabled her to identify different psychological aspects involved in the personnel management processes at various levels of the Greek public administration.

The results obtained are important for the Greek public administration insofar as they highlight the continuous training that managers must receive in order to keep their knowledge up to date and in line with social changes.

This thesis fulfills the academic and formal conditions required by the current Spanish legislation to qualify for the title of Doctor by the University of Cordoba.

That in relation to the subject of the thesis, and derived from it, the following publications have been made:

- Articles in journals:

Paraskevi Angeli, Alexander Maz-Machado & Maria Jose Madrid (2023). Lifelong Learning: Use of Psychological Factors in the Greek Public Administration. TEM Journal, 12(4), 2319-232.

In light of all this, the presentation of the doctoral thesis is authorized.

Cordoba, on the 22 de diciembre de 2023

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After completing this research, I feel the need to thank with all my heart, all the people who helped me fulfill my goal.

More specifically I would like to thank my supervising Professor Dr. Alexander Maz Machado for the precious guidance, scientific suggestions and our excellent cooperation in general, during the writing of my PhD.

I also owe to thank my supervising Professor, Dr. María José Madrid Martín for her constructive advice and suggestions.

Finally, I must thank my family who are always by my side and support my every effort.

Factores psicológicos y formación continua en la gestión de recursos humanos para mejorar la eficiencia de la administración pública en Grecia.

Esta tesis se centra en la formación continua en factores psicológicos en la gestión de recursos humanos para mejorar la eficiencia de la administración pública en Grecia.

Objetivo: El objetivo principal de este estudio es analizar la participación y la adquisición de conocimientos de los directivos del sector público griego en programas de formación relacionados con la gestión de recursos humanos basados en los principios de la psicología ocupacional. Los objetivos específicos fueron evaluar el nivel de formación recibido por los directivos de los servicios públicos que participaron en programas de formación sobre el uso de factores psicológicos en la gestión de recursos humanos; estudiar la forma en la que estos aplicaron el conocimiento adquirido; analizar cómo desde su punto de vista la aplicación de este nuevo conocimiento ha influido en la eficiencia y efectividad de los servicios que gestionan; y considerar el papel desempeñado por los factores "género", "edad" y "formación académica" en la formación y aplicación de factores psicológicos en la gestión de recursos humanos.

Metodología: El estudio realizado es de tipo cuantitativo, identificando y evaluando los cambios que tienen lugar en diversos fenómenos sociales y, mediante el análisis numérico, llegando a conclusiones lógicas.

Instrumento de investigación: Como instrumento de investigación, se utilizó un cuestionario con una escala Likert, que fue diseñado en base a los objetivos y preguntas de investigación del estudio. El cuestionario fue preparado y enviado en formato electrónico a los directivos que prestan sus servicios en las instituciones públicas griegas.

Muestra: En el estudio han participado 520 directivos que desempeñan funciones de supervisor de dirección y supervisor de departamento en varios servicios de la administración pública griega.

Resultados: El análisis de los datos muestra que un alto porcentaje de participantes han recibido formación en el uso de factores psicológicos y los han integrado en la gestión de recursos humanos. En cuanto al resto, según sus respuestas, su no participación en estos programas de formación se atribuye entre otras a la falta de información sobre la realización de los mismos. Además, los resultados mostraron que aquellos que participaron en los programas de formación adquirieron habilidades profesionales y sociales relevantes para su trabajo, y que la aplicación de este conocimiento resultó en su opinión en un aumento de la productividad de sus subordinados, así como de los departamentos que gestionan. En cuanto al papel de los factores "género", "edad" y "formación académica" en la intención de recibir formación para el uso de factores psicológicos y en su aplicación, los resultados muestran que solo el "género" afecta el uso de factores psicológicos. Mientras que la "formación académica" y la "edad" afectaron a la intención de los directivos de recibir formación.

Discusión: La importancia de la especialización en liderazgo en cuestiones relacionadas con la motivación de los empleados ha sido considerada en distintos estudios internacionales, pero en Grecia hasta ahora no había estudios que examinaran exclusivamente si los factores psicológicos eran considerados por la dirección y cómo afectaban al rendimiento y a la eficiencia de los empleados en las organizaciones públicas. En este contexto, el presente estudio puede caracterizarse como original según los estándares griegos.

Conclusiones: Los resultados muestran que mejorar la eficiencia de los servicios públicos griegos está estrechamente vinculado a la formación continua de los directivos y a la integración de factores psicológicos en la práctica administrativa.

Palabras clave: psicología laboral, formación continua, administración pública griega, recursos humanos, liderazgo.

Abstract

This thesis is focused on the training in psychological factors in Human Resources Management to improve the efficiency of Public Administration in Greece.

Aim: The main objective of this study was to analyze the participation of executives of the Greek Public Sector in training programs related to human resource management based on the principles of occupational psychology and the knowledge they acquired.

The specific objectives were to assess the level of training received by the executives of public services participating in training programs, on the use of psychological factors in human resource management, to study the way in which they apply the acquired knowledge, to analyze how the application of this new knowledge has affected the efficiency and effectiveness of the services they manage, and to consider the role played by the factors: "gender", "age" and "educational background" in the training and application of psychological factors in human resource management.

Method: The research method applied to extract the data was quantitative, as this can identify and evaluate the changes taking place in various social phenomena and, through numerical analysis, lead to logical conclusions.

Research tool: As a research tool, a Likert Scale questionnaire was used, which was constructed by the researcher based on the objectives and research questions of the study. The questionnaire was prepared and sent in electronic form to the executives serving in the public services of the Greek state.

Sample: The study involved 520 executives serving in the positions of Directorate Supervisor (referred to in the text as Managers) and Department Supervisor (referred to in the text as Supervisors) in various services of the Greek public administration.

Results: From the data processing, it was found that a high percentage of participants have been trained in the use of psychological factors, and have integrated them in the management of human resources. As for the rest, according to their answers, their non-participation was attributed to the lack of information on the conduct of the training programs. Also, the results showed that those who participated in the training programs acquired important professional and social skills, while the utilization of this knowledge resulted in increased productivity of their subordinates, as well as of the departments

they manage. Regarding the role of the factors “gender”, “age” and “educational background” in the intention to train for the use of psychological factors and to apply them, the results show that only “gender” affects the use of psychological factors. “Educational background” and “age” affect the intention of managers and supervisors to be trained.

Discussion: The importance of leadership specialization in issues related to employee motivation has been recorded in several international surveys, but in Greece until now there were no studies that examine exclusively if psychological motivation is used by management, and how it affects employee performance and public organizations efficiency. In this context, the present study can be characterized as original for the Greek standards.

Conclusions: Finally, the results show that improving the efficiency of Greek public services is closely linked to the training of managers and the integration of psychological factors into administrative practice.

Key words: work psychology, lifelong learning, Greek public administration, human resources, leadership

Contents

Abstract	4
Contents	6
List of Figures	9
List of Tables	10
Introduction	14
The aim of the research	16
Structure of the thesis	17
Chapter 1	18
Psychology in human resources management	18
1.1. Human Resources Management.....	18
1.2. The role of leadership in human resource management.....	19
1.3. Employee motivation theories	21
1.4. Psychology of work	27
Chapter 2	33
The Public Administration in Greece	33
2.1. Conceptual approach to the state	33
2.2. Systems of organization of the state	35
2.3. Public bodies	35
2.4. Historical review of the Greek public administration	36
2.5. Public administration.....	36
2.6. Public Administration Systems	38
2.7. Human resource management in public administration	39
2.8. Motivating human resources in the public sector.....	39
Chapter 3	41
Lifelong learning and training of the Greek public administration Executives.....	41
3.1. Basic principles and objectives of lifelong learning	41
3.2. The knowledge economy	42
3.3. Executive training bodies of the Greek public sector	45
3.4. Training programs for managers and supervisors	47

Chapter 4	49
Literature review	49
4.1. Training of managers and supervisors in human resource management seminars ..	49
4.2. Service efficiency and leadership model in the exercise of management	52
4.3. The role of the factors 'gender' - 'age' - 'educational background'	55
4.3.1. The role of the 'gender' factor	56
4.3.2. The role of the factors "age" and 'educational level'	58
Chapter 5	60
Research methodology	60
5.1. Purpose, objectives and axes of the research	60
5.2. Research questions	61
5.3. Methodological approach	62
5.4. Participants in the study	62
5.5. Research tool	63
5.6. Method of static analysis	65
Chapter 6	67
Results	67
6.1. Demographics	67
6.2. Human resources training	71
6.3. Application of psychological factors	80
6.4. Level of efficiency of subordinates	95
6.5. Demographics of Directors and Supervisors who did not participate in training seminars	101
6.6. Managers and Supervisors who acquire knowledge about the use of psychological factors in the exercise of human resources management	105
6.7. The role of 'gender', 'age' and 'educational background' in the intention to acquire knowledge	105
6.8. Percentage of trainee managers and supervisors who use psychological factors in their HR management training	110

6.9. The role of 'gender', 'age' and 'educational level' in the application of new knowledge	122
6.10. Efficacy of services led by trained managers and supervisors in HRM.....	129
6.11. Summary of results	131
Chapter 7	133
Discussion - conclusions - proposals.....	133
7.1. Discussion	133
7.2. Conclusions.....	134
7.3. Limitations of the research.....	137
7.4. Suggestions for future research.....	137
References	139
Annex I -Questionnaire.....	152

List of Figures

Figure 1: Adaptation of Maslow`s hierarchy of needs in the work space	22
Figure 2: Alderfer`s ERG theory in relation to Maslow`s theory.....	23
Figure 3: Herzberg`s two factor theory	24
Figure 4: Adams` Equity theory	26
Figure 5: Vroom`s Expectancy Theory	26
Figure 6: Greek Administrative pyramid	37
Figure 7: Gender of participants.....	67
Figure 8: Position in their service.....	70
Figure 9: Attendance to training seminars	73
Figure 10: Answers to the statement “This training helped me to motivate my subordinates”	82
Figure 11: New knowledge helped implement different practices that improve employee	84
Figure 12: Reasons for not participating	101
Figure 13: Contingency figure gender attendance.....	106
Figure 14: Contingency figure age-attendance	108
Figure 15: Contingency figure educational background-attendance	109

List of Tables

Table 1: Studies on leadership training	51
Table 2: Studies on leadership model and service effectiveness	55
Table 3: Studies on the relationship of gender to education and leadership	57
Table 4: Studies on the role of 'age' and 'education'	59
Table 5: Age of participants	68
Table 6: Educational background of participants	68
Table 7: Years since their education studies were completed	69
Table 8: Field of work of participants	70
Table 9: Years of service in current job	71
Table 10: Answers to the statement “HR management seminars attended”	72
Table 11: Answers to the statement “Years passed since my last seminar”	74
Table 12: Answers to the statement “The training method was satisfactory”	75
Table 13: Answers to the statement “The training duration was not satisfactory”	76
Table 14: Answers to the statement “The instructors did not satisfy me”	77
Table 15: Answers to the statement “This training covered my work needs”	77
Table 16: Answers to the statement “This training covered my personal interests”	78
Table 17: Answers to the statement “This training helped me gain knowledge to understand the psychological factors that affect the efficiency of my subordinates”	79
Table 18: Answers to the statement “This training helped me improve my managements and social skills”	80
Table 19: Answers to the statement “I use the knowledge and skills I received from this training to apply psychological factors to improve the performance of my subordinates”	81
Table 20: Answers to the statement “This training helped me keep my subordinates engaged in their work”	82
Table 21: Answers to the statement “This training did not help me improve the efficiency of my subordinates”	83

Table 22: Answers to the statement “The efficiency of my subordinates increases with monetary rewards”	85
Table 23: Answers to the statement “The efficiency of my subordinates is not affected by fair treatment”	86
Table 24: Answers to the statement “The efficiency of my subordinates increases when I praise their work”	87
Table 25: Answers to the statement “My subordinates work better when they take some days off”	87
Table 26: Answers to the statement “The efficiency of my subordinates is not affected by additional benefits”	88
Table 27: Answers to the statement “My subordinates are more efficient when they attend seminars related to the subject of their work”	89
Table 28: Answers to the statement “The efficiency of my subordinates is increased by their fair assessment”	90
Table 29: Answers to the statement “My subordinates are less efficient when the working conditions deteriorate”	90
Table 30: Answers to the statement “The efficiency of my subordinates is not affected by comments - suggestions (feedback) about their work”	91
Table 31: Answers to the statement “The work of my subordinates is more efficient when they establish good relations with each other as colleagues”	92
Table 32: Answers to the statement “The efficiency of my subordinates is not affected by their encouragement to take initiatives”	93
Table 33: Answers to the statement “The work of my subordinates is more efficient when they are given the opportunity to move up the agency hierarchy”	94
Table 34: Answers to the statement “My subordinates are more efficient when I encourage them in their work”	94
Table 35: Answers to the statement “My subordinates are happy with the objects of their work”	95
Table 36: Answers to the statement “My subordinates do not feel committed to the goals that have been set”	96
Table 37: Answers to the statement “My subordinates try for the highest possible performance”	97

Table 38: Answers to the statement “My subordinates take initiatives”	97
Table 39: Answers to the statement “My subordinates cooperate with their colleagues”	98
Table 40: Answers to the statement “My subordinates show interest in the immediate service of the citizens”	99
Table 41: Answers to the statement “My subordinates are dedicated to their assigned tasks”	99
Table 42: Answers to the statement “My subordinates are willing to attend training programs”	100
Table 43: Gender of sample that did not participate in the seminars	102
Table 44: Age of the sample that did not participate in the seminars.....	102
Table 45: What is the highest level of education I have received.	103
Table 46: How many years ago I completed my education.....	103
Table 47: What position I have in my service	104
Table 48: How many years I have held this position	104
Table 49: Participation in seminars	106
Table 50: Chi-Squared Tests for the factor "gender"	107
Table 51: Chi-Squared Tests for the factor 'age'	108
Table 52: Chi-Square Tests for the factor "educational background"	110
Table 53: Crosstabulation for profitability and monetary rewards.....	111
Table 54: Crosstabulation for efficiency and fair treatment.....	112
Table 55: Crosstabulation for efficiency and praise	112
Table 56: Crosstabulation for efficiency and days of leave	113
Table 57: Crosstabulation for profitability and fringe benefits	114
Table 58: Crosstabulation for efficiency and seminar attendance.....	114
Table 59: Crosstabulation for efficiency and fair evaluation	115
Table 60: Crosstabulation for efficiency and work climate	116
Table 61: Crosstabulation for efficiency and feedback	117
Table 62: Crosstabulation for efficiency and collegiality	118
Table 63: Crosstabulation for efficiency and initiative	119

Table 64: Crosstabulation for efficiency and promotion in the hierarchy of the service	120
Table 65: Crosstabulation for efficiency and encouragement in the workplace	121
Table 66: Crosstabulation for the factor "gender"	123
Table 67: Chi-Square Tests for the factor "gender"	124
Table 68: Crosstabulation for the factor «age»	125
Table 69: Chi-Square Tests for «age»	126
Table 70: Crosstabulation for the factor 'educational level'	127
Table 71: Chi-Square Tests for the factor "educational level"	128
Table 72: Crosstabulation for the job object	129
Table 73: Crosstabulation for commitment to work goals	130
Table 74: Crosstabulation for employee performance	131

Introduction

Globalization and intense competition have made people the cornerstone of organizations and businesses, the effectiveness of whom is heavily dependent on their employees' skills and work performance. Therefore, human resource management is one of the most important aspects of any business or organization, regardless of size, ownership, characteristics, etc. (Altinay et al., 2008).

Studies have shown that employee engagement in their work is largely determined by the motivational methods used by their employers. Furthermore, when managers use psychological factors, employees are more likely to feel satisfied with their jobs, and their commitment to the organization's goals and mission is greater (Bowling et al., 2010).

Theorists and especially psychologists have observed the positive effects psychological factors have on the efficiency of businesses and organizations. Among others, work psychology, as stated by Staw et al. (1994), contributes to the cultivation of a better climate of cooperation, which in turn increases the chances of the organization's goals being achieved. Not only does work psychology improve employee performance, but it can also resolve labour conflicts.

Psychology can only be effective if it is preceded by good communication channels to create the right conditions for positive interactions between the members that make up the human capital of the organization. For example, there should be a specific purpose that is known to all team members. Equally important is to have a feedback mechanism, so that department heads can be aware of any problems and intervene to solve them, taking into account the positions and opinions of team members (Bowling et al, 2010).

Moreover, it is worth noting that the successful use of the principles of occupational psychology is intertwined with the type of leadership and the qualitative characteristics of the person who leads a team, department or organization (Zapf & Holz, 2006). For this reason, an increasing number of supervisors are trained in this way of management, with particular emphasis on the ways in which they can motivate their subordinates (Singh & Slack, 2020).

Also, various studies have found that motivating employees is the driving force for increasing their performance and improving their productivity. In fact, the topic of "employee motivation" has been of great concern to many scholars who have developed various theories (Singh & Slack, 2020).

Maslow (1943) suggests that people are motivated and perform better when five basic needs, such as job security, prestige, recognition, self-esteem and self-realization, are met. Alderfer (1969) reduces Maslow's five needs to three: the need of existence, the need of relatedness and the individual's need for growth. Herzberg (1966) links motivation to job satisfaction and distinguishes between extrinsic and endogenous factors that motivate human resources. McGregor (1960) developed the X-Y theory, in which he describes what managers think about the nature of employees, which are lazy and easily manipulated according to theory X, or responsible, creative and committed to goals according to theory Y. McClelland (1985) considers motivation to be related to the individual's need to achieve goals, the need for power and the need to cultivate interpersonal relationships. Adams (1965) states that employees perceive the world as comparable input and output information and incentives, calculating what they invest in their work and what they get back as a reward. Vroom (1960) suggests that people work harder if they believe that their efforts will lead to increased performance, which in turn will lead to the rewards they desire.

As far as motivational techniques are concerned, these are related to meeting the aforementioned needs. The literature shows that the most effective motivation techniques are related to the economic sector, mainly involving additional rewards, such as productivity bonuses, which are a form of monetary reward for achieving goals where employees participate in a percentage of the company's profits (Rynes et al., 2004).

It is worth noting that in Greece, it is the private sector that mainly uses this method to motivate human resources, while the public sector operates based on the fiscal policy of each government. As a result, the main motivational technique applied in the public sector is praise and recognition of the employees' work and contribution, by the organization (Perry & Porter, 1982).

These (recognition and praise) are two motivational techniques, that are part of the management approach using psychological factors. Their usefulness is recognized by

work psychology, and the public sector in Greece has begun to introduce them years ago in its administrative practices. However, it has not yet fully incorporated all the principles of occupational psychology, and most of its services still operate on the Weberian model (Kantas, 1998), where charismatic or self-taught supervisors instinctively use psychological factors in the management of human resources.

This does not mean that there is no provision for the training of administrative employees in Greece. In fact, the National Centre for Public Administration and Local Government, which is the main training center for civil servants, carries out a series of training programs aimed at frontline executives who want to acquire new skills in order to improve the efficiency and competitiveness of the Greek public administration (ekdda.gr, n.d.).

At the same time, many Greek educational institutions, part of lifelong learning programs, include relevant courses in their curricula in all educational levels (undergraduate, postgraduate, doctoral) (Kokkinou, 2017).

However, research data on the effects of the use of psychological factors in the management of human resources in the public sector have not yet been identified. This gap is intended to be filled by this study.

The aim of the research

The general objective of this research is to analyse the participation of Directorate and Department Supervisors in the Greek Public Sector, in training programs focused on acquiring knowledge in human resource management through the principles of work psychology.

To achieve this main goal, the following specific objectives will be considered:

- ✓ To evaluate the extent of training received by managers and supervisors of public services who participate in programs on the use of psychological factors in human resources management
- ✓ To investigate how participants in training programs apply the knowledge they have acquired within their respective departments

- ✓ To assess the level of efficiency and effectiveness in the services managed by those who implement the principles of human resource management through psychological factors
- ✓ To examine the role played by factors such as gender, age and educational background on the training in psychological factors related to human resource management and its subsequent application.

Structure of the thesis

This thesis comprises of two main sections: the theoretical and the research section. The theoretical section includes four chapters describing the epistemological framework of the study and the findings from related literature.

The research section describes the methodology used for data collection, the results obtained from the data analysis and the researcher's conclusions.

More specifically, the first chapter discusses human resource management and work psychology. The second chapter provides insights into the current state of the Greek public sector and its staffing. The third chapter offers data on lifelong learning in Greece and the training of public sector executives, while the fourth chapter includes relevant research.

Chapter five presents in detail the methodology applied for data collection, the questions and objectives of the research, the sample selection process and the data processing techniques.

In the sixth chapter, descriptive statistics are presented, to detail the results obtained after processing the data. Finally, the seventh and last chapter summarises the conclusions.

Chapter 1

Psychology in human resources management

The structure of an organisation is a relevant factor for efficiency and development, but the most important part is its human resources. The people who work in an organisation contribute decisively, both to its efficiency and to the quality of the services it provides, which can determine its competitiveness (Bourantas & Papalexandri, 2004).

The administration and human resources management department of an institution plays an extremely important role. The main area of action of this department is not only to supervise and monitor the performance of employees, but also to safeguard labor rights, to improve working conditions, and to support professional development (Muchinsky, 1997). For this reason, an increasing number of managers are receiving training in work psychology and adopting psychological factors in their work (Tsai et al., 2010).

1.1. Human Resources Management

The term "Human Resources Management" refers to the formal system adopted and implemented by an institution (organisation or company) in order to manage the people who work for it. The ultimate goal is to maximise productivity, enhance the workforce's skills, and improve the satisfaction of both the employees and the citizens who use the services provided by the institution (Nasser et al., 2017).

According to Agarwala (2003), the key responsibilities of the human resources management department encompass three areas: individual, organizational and career. At the individual level, an HR management evaluates the performance of employees, helps them to identify their strengths and weaknesses, and organize training activities which improves both their skills and their productivity. With these actions, it also strengthens the career area, placing the right person in the right position. Finally, with regard to the organizational sector, it is responsible for formulating and developing a strategic plan which maximises the potential of human resources.

Effective management of employee competencies can ensure an organization's competitiveness, survival and future growth (Teece et al., 1997; Verburg et al., 2007).

It also determines its reputation, and shapes the economic benefits of employees. In this context, organizations should enhance the professional skills of human resources and ensure their training (Altinay & Gannon, 2008).

1.2. The role of leadership in human resource management

Leadership is a fundamental subsystem of an organization's structure. It serves as the driving force that inspires and guides employees to work together as a team towards the organization's goals, vision, and mission. Its significance in the execution of administrative functions cannot be overstated, as it can significantly influence the attitudes and behaviors developed by team members. According to Rossidis (2017), the role of leadership is critical in the efficient functioning of an organization.

Leadership is a set of specific characteristics and abilities that are essential for effectively managing a team. These characteristics include the ability to understand the mechanisms that motivate people, to inspire and guide team members, and create a positive work environment that fosters not only cooperation, but also a strong commitment to the organization's goals (Alexakos & Loukanidou, 2012).

There are three types of leadership styles: authoritarian, democratic, and liberal. An authoritarian leader holds all the power and makes all decisions, without any input from team members. In contrast, a democratic leader encourages team members to participate in decision-making, as well as take responsibility for their own training and job specialization. A laissez-faire or liberal leader, gives team members a large degree of freedom to work in the most efficient method possible (Rossidis, 2017).

The effectiveness of a leader's adopted leadership model can be evaluated by the extent to which the organization's and team's goals are achieved. Successful leaders guide their team members toward achieving their objectives by providing clear directions and the necessary resources for their actions to be successful. In this context, leadership can be directional, supportive, participatory, or goal-oriented, depending on the goal achievement criterion. In the first case, the leader provides clear instructions on how to act, in the second case, they offer support, in the third case, they involve team members in decision-making, while in the last case, the leader sets high goals and expects exceptional work performance from the team (Rossidis, 2017).

When it comes to how leaders carry out their duties, they can fall into three categories: charismatic, transformative, and transactional. A charismatic leader has a clear vision and goals, and is able to communicate them effectively to the other members of the group. They possess empathy, take risks, and serve as role models for others, even if their behavior is sometimes unconventional (Vakola & Nicolaou, 2019).

A transformative leader inspires, empowers, and motivates team members toward achieving goals (Rossidis, 2017). A leader who practices transactional leadership typically employs a "give and take" approach, demanding obedience from subordinates in exchange for additional rewards (Vakola & Nicolaou, 2019).

Specific principles, such as management and leadership, harmony of objectives, unity of command, and principles of supervision and motivation, determine the leadership of an organization (Alexakos & Loukanidou, 2012).

The principles of management and leadership are crucial when it comes to achieving goals with the help of human resources. The principle of harmony of goals, is about ensuring that individual goals align with the organization's goals, from the perspective of employees. The principle of unity of command, relates to the relationship between team members and leaders, conflicts, and personal responsibility for the final outcome. The principle of motivation, is about managers understanding ways to motivate employees to perform better, while the principle of supervision, is about team members' interactions and leadership effectiveness (Alexakos & Loukanidou, 2012).

In the public sector, effective leadership is essential for managing financial resources, human capital, service quality, employee planning, and evaluation (Rossidis, 2017). However, the position of a public service leader on the hierarchical scale can significantly impact their success (Alexakos & Loukanidou, 2012).

The primary responsibility of leaders in public service is to define the organization's mission, ensure its success, and foster its development. To accomplish this, they should create an environment that encourages employees to take initiatives and develop their skills. Additionally, they should reward their subordinates, promote training, and involve them in the decision-making process. This approach will enable them to highlight specific skills of each employee, creating a workforce that is highly motivated and productive (Alexakos & Loukanidou, 2012).

1.3. Employee motivation theories

Leadership is measured by several parameters, among which is the leader's knowledge of methods to enhance human resource performance. Motivation has been a major topic of concern among scholars and theorists, who have come up with various theories, based on their studies and observations.

Maslow's theory of the hierarchy of needs

The most widely accepted theory is Maslow's hierarchy of needs, which was introduced in 1943. He categorized human needs in levels, starting from the basic biological needs and moving on to more spiritual needs, as the levels increase in value. He stated that some needs must be addressed first, in order for the individual to be able to fulfill the needs of the next level, and so on and so forth. Maslow's hierarchy of needs is often represented as a pyramid, although the specific pyramidal figure is not attributed to him, but to later adapters of his theory.

According to Maslow's theory, the first category of needs are biological ones. This category includes food, water, clothing, sleep etc. In work psychology, biological needs are basic salary and working conditions. If someone has not satisfied these needs, which are necessary for survival, they cannot proceed to the fulfillment of the others. As soon as these needs are satisfied, people proceed to cover their safety needs. These needs include securing a home, property and personal safety. In work psychology, security needs are covered by pension programs, health insurance policies, hygiene and safety conditions etc. The next level includes social needs. These are expressed by the need to love and be loved, to be part of a group. In work psychology, being part of a group, feeling accepted and participating in common activities are some ways to cover social needs. Next come the needs for self-esteem and recognition by others. People feel the need to offer to others, for their actions to be recognized and finally for them to be respected and appreciated. Employees satisfy these needs, when their work is being recognized, when they are promoted, and when they receive bonuses by their employers. The last category of needs consists of self-realization. People need to fulfill their dreams and expectations, to succeed in the goals they set. Amongst employees, this need is covered by the autonomy in decision-making, creative working, taking responsibilities etc. (Vakola & Nikolaou, 2019).

In figure 1 we present the hierarchy of needs in the work space, adopting Maslow's theory as described above.

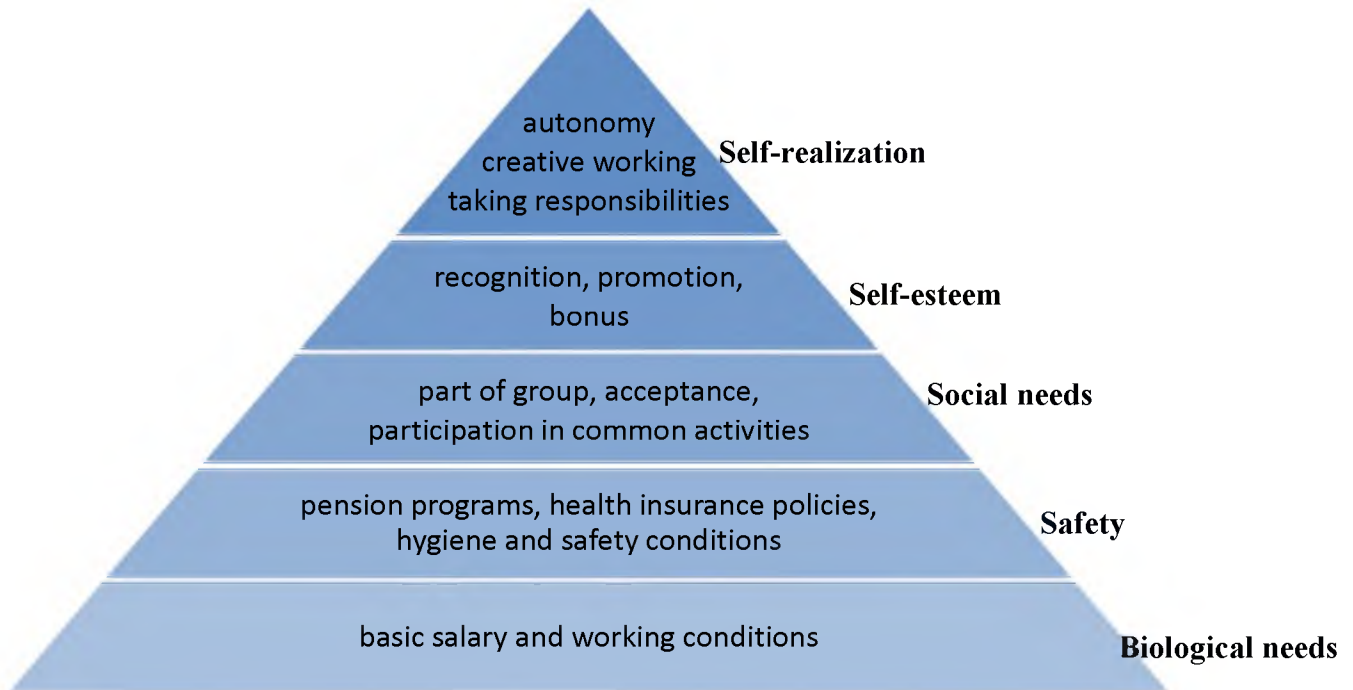


Figure 1: Adaptation of Maslow's hierarchy of needs in the work space

Alderfer's ERG motivation theory

Alderfer (1969) in his ERG motivation theory, modified Maslow's theory by reducing the five motivational factors to three. The three needs are: a) **Existence**, which includes the physiological needs a person has in order to survive, b) **Relatedness**, which is the need for social interaction, and c) **Growth**, which includes Maslow's top two categories of self-esteem and self-realization. The name of this theory (ERG) is derived by the acronym of the need groups titles (Existence, Relatedness and Growth). Existence needs, correspond to biological and safety needs according to Maslow. The needs for relationships with others (Relatedness), correspond to Maslow's social needs. The needs for development (Growth), have the same content as the needs for self-esteem and recognition, as well as self-realization-completion according to Maslow (Vakola & Nikolaou, 2019), as shown in figure 2 below.

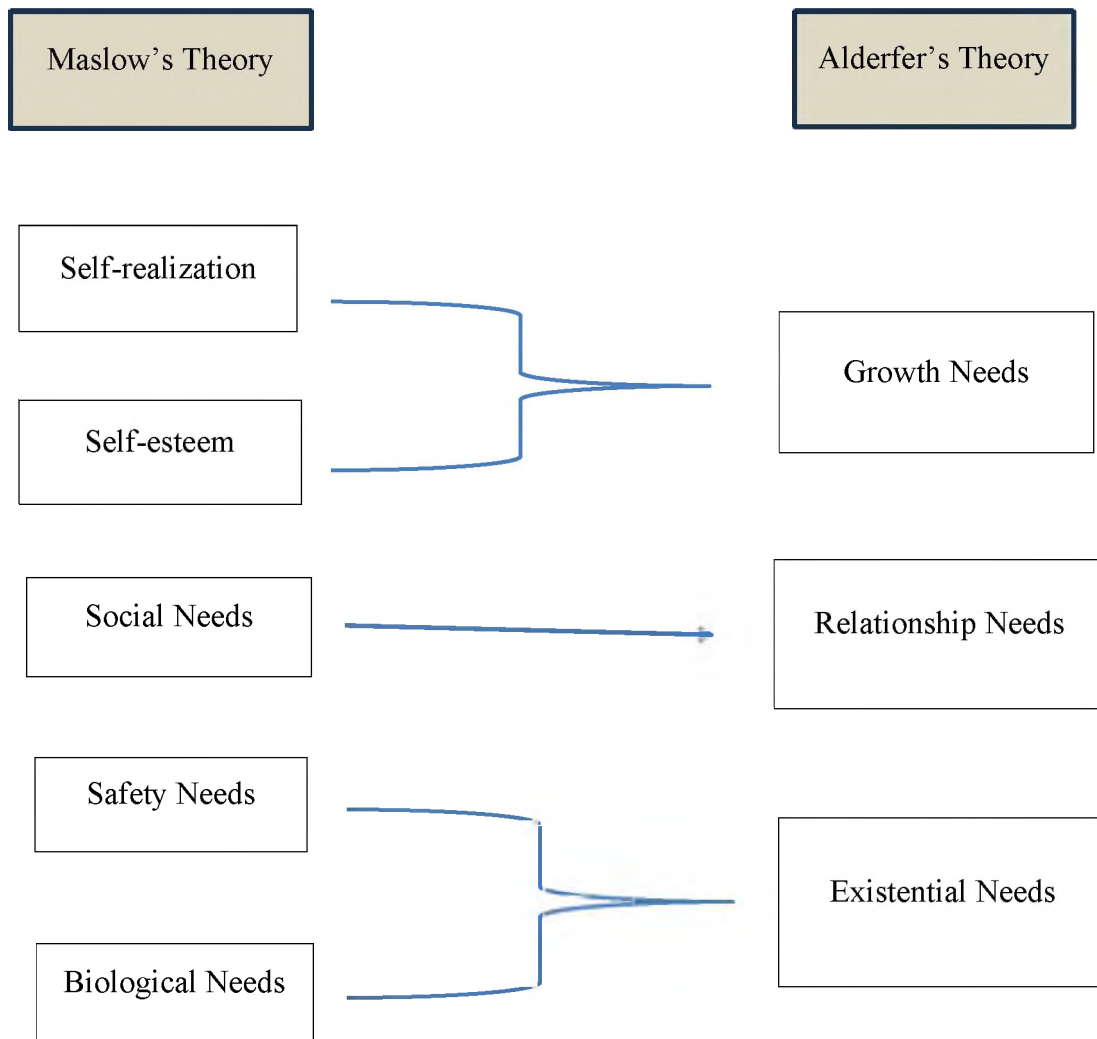


Figure 2: Alderfer's ERG theory in relation to Maslow's theory

Herzberg's two factor theory

Herzberg's two-factor theory (1966) is a well-known theory that examines the causes of motivation at work. Herzberg found that only Maslow's top two sources of motivation - self-esteem and self-realization - effectively motivate employees. According to Herzberg, factors that positively affect and motivate employees, include workplace conditions, job security and remuneration, colleague relationships, organizational culture, and employee satisfaction. Herzberg identified two factors, hygiene and motivation, that must coexist in balance. He believed that feeling job satisfaction is linked to reward, achievements, work nature, responsibility, and the potential for personal development (Vakola & Nikolaou, 2019).

Figure 3 shows Herzberg's two factors, that are responsible for employee motivation. On the left is the Hygiene factor, that includes working conditions, coworker relations, employer policies and rules, supervisor quality, base wage and salary. On the right is the Motivation factor, that includes work recognition, achievements, responsibility, personal advancement and growth.

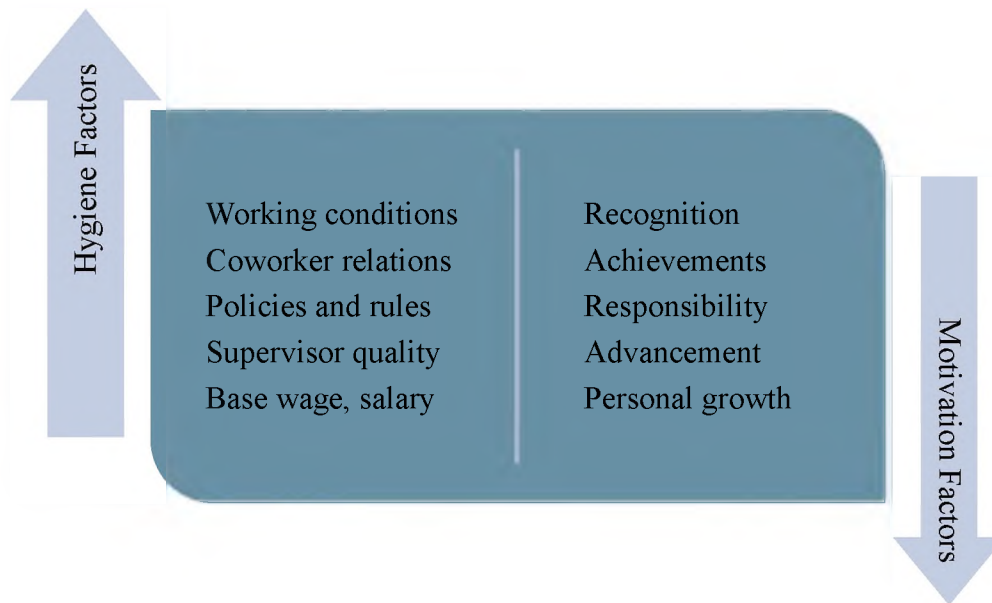


Figure 3: Herzberg's two factor theory

McGregor's X-Y theory

McGregor (1960) developed the X-Y theory, in which he describes what managers think about the nature of employees. These are essentially two distinct theories, Theory X and Theory Y. McGregor first formulated Theory X, in which he took for granted that employees are lazy, want to avoid work, prefer to have free time, resist change, have little creativity, have no ambitions and want to be guided, thus can be easily manipulated. This theory not only was the basis of many authoritarian government systems, but also received harsh criticism, because his assumptions about human behavior were often not accurate. In the light of these events, McGregor proposed his Theory Y, in which he admitted that people want to learn and take responsibilities, will enjoy their work, will commit to goals and have creative ability.

These two theories of course contradict each other, but both can be applied, due to the variety of human nature. Where Theory X will fail to motivate an employee, Theory Y may work (Vakola & Nikolaou 2019).

McClelland's need theory

McClelland (1985) proposed the achievement theory, which classifies motivation into three types: a) an individual's desire for achievement, b) an individual's desire for power over others and their actions, and c) the human need to form relationships. According to McClelland, fulfilling the needs for achievement and power can positively motivate workers, while fulfilling the need to form relationships may have a negative impact, due to the individual's tendency to lose objectivity when evaluating people with whom they share close ties.

Adams' equity theory

Adams stated in his equity theory (1965), that employees perceive the world as comparable input and output information and incentives, calculating what they invest in their work and what they get back as a reward. He also proposed that employees make comparisons with friends, colleagues, relatives, etc. In this theory, all that people invest in their work are considered as *Inputs*, such as experience, qualifications, effort, time, mood, knowledge, while rewards are considered as *outputs*. These are mainly monetary, but also anything that is perceived as a reward (company car, travel, promotions, working conditions, etc.). This calculation of inputs and outputs is subjective, because it is based on the personal perception of each individual. When the employees perceive inequality between inputs and outputs they feel injustice, resulting in increased psychological tension and decreased work performance, which many times can lead to their quitting their jobs (Vakola & Nikolaou, 2019).

Figure 4 shows the balance between inputs and outputs in Adams' theory. The individual puts time, efforts, qualifications and experience and expects to get good work conditions, promotions, further benefits and monetary rewards.

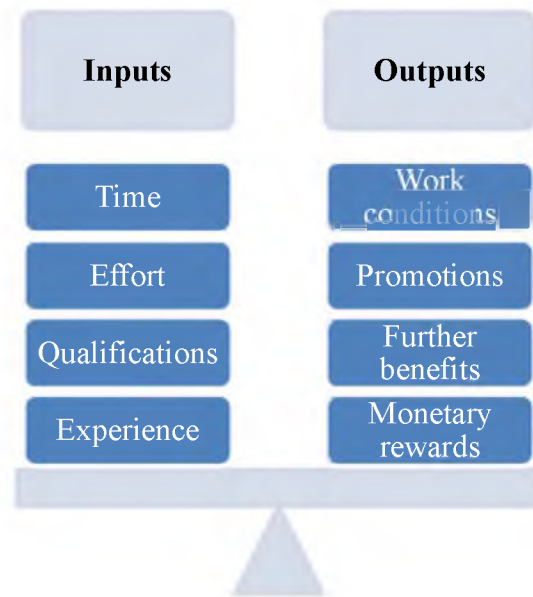


Figure 4: Adams' Equity theory (Vakola & Nikolaou, 2019, p. 158)

Vroom's theory of expectancy

Vroom formulated the expectancy theory in the 1960s. He stated that when employees believe that their efforts will lead to increased performance, which in turn will lead to the rewards they desire, they are motivated to work harder. Vroom tried to fill the gap left by the other motivational theories, which did not explain what factors lead to employees intensifying their efforts, choosing certain behaviors and rejecting others. He studied the relation between effort and performance, effort and recognition, remuneration and its attractiveness for every employee. He found that motivation depends on expectancy (the belief that certain behaviors will lead to certain performances), instrumentality (the relationship between performance and results) and valence (what each individual values most as a reward). In order to achieve high motivation of employees, all three factors of the theory of expectancy must be at high levels (Vakola & Nikolaou, 2019), as shown in figure 5 below.

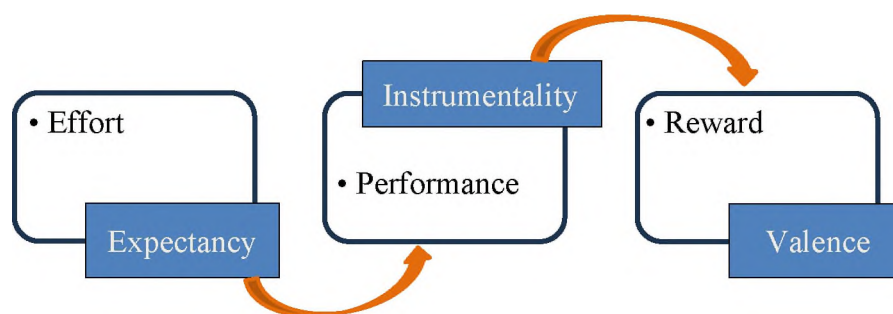


Figure 5: Vroom's Expectancy Theory (Vakola & Nikolaou, 2019, p. 163)

1.4. Psychology of work

Work psychology is the art of managing people in a way that helps them to achieve the strategic goals, vision, and mission of the organization. This involves creating an environment, where people, workplaces and organizations can compete fairly and equally with each other. The ultimate aim is to establish a healthy, productive, and beneficial relationship between employees and their organizations (Sonnentag & Niessen, 2008).

To achieve this objective, a number of factors must be taken into account, that can contribute to maximizing the efficiency of the relationship between the organization and human resources. According to Cooper and Locke (2000), these factors include providing incentives for employees, adopting effective leadership models, providing training and development opportunities for leaders, ensuring job satisfaction, increasing efficiency in project production, promoting team effectiveness, addressing work stress and professional burnout, upholding the principle of justice, conducting employee evaluations, and interviewing candidates for job vacancies, new hires, and setting organizational targets.

Some of the main factors are set out below:

a) **Motives**

The motivation of employees to take actions that are beneficial to the organization, is closely linked with the incentives offered by the organization. These incentives typically include financial rewards, such as salary increases, bonuses, and additional vacation days, as well as opportunities for professional development, such as promotions (Latham & Latham, 2000; Moscu et al., 2023).

Another commonly used method of motivating employees, is through the use of a psychological contract, which is usually informal in nature. This contract outlines the commitments of both parties (the employer and the employee), and the potential rewards that may be received in the future, such as better job opportunities or increased compensation (Latham, 2007).

b) Leadership

According to Boone and Kurtz, (1992), a leader is someone who directs their team to achieve the goals set by the organization they manage, by exerting their authority. A leader's success is tied to the quality of interaction they have with their team, and their ability to organize and distribute work effectively, in order to increase productivity.

In the past, leadership traits were considered to be hereditary, but nowadays they are viewed as acquired through education. However, this does not mean that charismatic leaders, who take risks based on their experience and instincts, are disregarded (Bass, 1985; Prasad, 2020).

The leadership model adopted is crucial, and can be divided into two categories: negotiation and transformational. In negotiation-based leadership, the leader focuses on identifying problems and solutions while also considering the needs and personal satisfaction of subordinates. In transformational leadership, leaders trust their subordinates and transform the workplace into a hub of creativity, high performance, and participative processes (Smither, 1998; Wickens et al., 2021).

c) Training

Before conducting a training program, it is crucial to investigate and analyse the organization's requirements. The first phase is to analyse the organization's structure, and identify the training needs and issues to be addressed. The next step involves an occupation-level analysis, that helps to determine the learning objectives of the training. This analysis answers the question: What do trainees need to learn to be more effective in their jobs? Finally, an analysis of individuals is carried out, to determine who needs training and in which area. It is important to note that training not only contributes to the personal development of employees, but also improves the organization's efficient functioning. According to Heinz and Koontz (1993), well-trained subordinates require less management monitoring, control, and meetings.

d) Team effectiveness

Studies have shown that forming groups or committees can be beneficial for an organization. Within a group, members can provide their expertise and experience, even

if they do not participate in decision-making. Forming committees can reduce the risk of power being concentrated in a single individual, and can provide representation for various sub-groups (Farouk et al., 2016; Lantz-Friedrich et al., 2016; Potočnik & Anderson, 2016).

The formation and functioning of groups involve defining tasks, determining the role of the group leader, and managing interpersonal relationships between members. Groups can make decisions, provide advice and recommendations, or simply gather information. They can also be formal or informal, and operate in both the public and private sectors. In some cases, a team may lead an organization, with each member leading regional teams or departments (Kantas, 1995; West et al., 2004).

As internal conflicts within groups are not uncommon, it is recommended that a clear allotment of responsibilities is established during the formation of the group. This should include the adoption of common goals, attendance at training seminars, and actions that promote cooperation (Veerankutty & Rehna, 2020).

e) Job satisfaction

Job satisfaction is closely linked to the motivations of employees, which may be personal, professional, or financial. The assessment of job satisfaction, is based on the answers provided by the employees, regarding their working conditions, financial rewards, opportunities for professional growth and training, and the quality of relationships with colleagues and management (Kabak et al., 2014). It is important to note that employee dissatisfaction can lead to poor performance, aggressive behaviour and even to quitting their job. Therefore, particular attention should be given to addressing the causes of dissatisfaction in the workplace. (Smither, 1998).

f) Improvement of organizational structures and agency development

The growth of an organization depends on the interventions and innovations it makes, to improve effectiveness. These actions may address internal issues, such as conflict avoidance, or involve structural changes, such as new product development, technological modernization, or changing the attitudes and beliefs of employees, including executives, to implement these changes (Wexley & Latham, 1985).

The typical development process of an organization, involves analysing its structure and identifying existing problems and their nature, through questionnaires, interviews, and other means. Then, intervention actions are planned, and implemented to introduce innovations, and staff acceptance is sought (Heinz & Koontz, 1993). Common interventions include training, changing objectives, improving processes (e.g., to reduce customer complaints), creating teams with specific tasks (e.g., to reduce costs), and systematically monitoring, evaluating, and providing feedback on the entire development project (Hemm et al., 2015).

g) Organization Justice

Organizational Justice refers to the fair treatment of individuals within an organization, in terms of both the outcome and the evaluation process (Greenberg & Lind, 2000). In recent years, there have been two prevailing definitions of justice in the workplace, which mainly relate to the selection and evaluation processes of personnel (Abdin et al., 2019). The first is "decisional justice," which pertains to the perception of fairness on which an organization's decisions are based. The second is "procedural justice," which is determined by how people evaluate fairness, by comparing their payments to those of others, as well as their education, experience, and effort (Boone & Kurtz, 1992).

h) Job insecurity

Job insecurity refers to the fear of losing one's job, and the challenges associated with managing such a situation. Employees who experience job insecurity may suffer from a lack of trust in management, stress, psychosomatic problems, and a decline in productivity (Shoss et al., 2022).

Job insecurity can be caused by staff reductions or layoffs, which not only negatively affect those who are laid off, but also those who remain employed. The remaining employees may have to take on additional responsibilities, and their working hours may also be reduced (Lee et al., 2006). Additionally, a merger between two organizations can have a significant impact on the smaller organization (target company) and result in employee layoffs or feelings of sadness, mistrust, anger, and

depression. However, over time, employees may eventually come to accept the new situation (Muchinsky, 1997).

i) Work Stress

Employee productivity and performance are closely linked to work-related stress, which is often caused by the nature of the job itself. For instance, jobs that involve serving citizens or making administrative decisions, are more likely to cause stress due to potential consequences (Jayakumar & Varma, 2021).

Stressful factors can include task overload, strict adherence to schedules, and interpersonal relationships. These factors may be perceived as a threat or challenge to personal development. When perceived as a threat, they can result in the accumulation of negative emotions, like depression or hostility, which may lead to health consequences for the individual (Ganster & Murphy, 2000).

j) Burnout

Burnout is a common and serious form of stress, characterized by emotional exhaustion, depersonalization (feeling treated as an object rather than a human being), and reduced personal accomplishment (making a negative evaluation of one's work results) (Brooks-Carthon et al., 2020). Such employees cannot contribute effectively to their work. The causes of burnout are related to both the individuals' condition and their temperament. According to Maslach (1982), having a supportive environment with whom they can share their concerns, is a protective factor for the individuals.

k) Education

Human resources training is a process aimed at improving employee performance and developing the company (Ahmad & Schroeder, 2003). The purpose is to develop existing skills and acquire new ones, in order to enhance work performance. With this new knowledge, workers can easily adapt to technological changes and new working conditions (Jones & Phillips, 2016). Additionally, it aims to instil new behaviours and abilities to manage daily work (Argyris, 1991).

Research shows that human resources training has multiple benefits for both employees and organizations. It boosts morale by empowering employees to claim their advancement with their own strengths (Danvila-del-Valle et al., 2019). It also promotes organizational stability by providing employees with a clear understanding of what to expect from their workplace. Furthermore, when training is provided by the company, it strengthens the commitment of employees to the employer's goals (Aragon-Sanchez et al., 2003).

Chapter 2

The Public Administration in Greece

Public Administration refers to the various actions undertaken by state institutions with the aim of achieving specific results that serve the general interest of its citizens. It includes all the services and organizations that come under the executive function of the government and implements the policies of each administration (Spiliotopoulos, 2017).

Administrative work is carried out by state institutions that perform public duties. Even though they don't belong to the judicial or legislative power, they have the authority to establish regulations, enforce laws, regulate citizen behaviour, provide goods and services, and produce work for the benefit of the citizens (Spiliotopoulos, 2017).

2.1. Conceptual approach to the state

Depending on the context, the term "state" can have different meanings. It could refer to an institution, a nation-state or state power, a legal entity, a central authority or a legal order. When we talk about the state's bodies that exercise state power, we consider them as the "state." These bodies form the state mechanism, which governs through legislative, executive, and judicial branches (Makridimitris, 2006).

The power of a state requires that everyone within its territory obey its laws. In principle, this power is above everything else. It refers to domination within the state, and is different from domination by external forces. The state's power is primary and self-reliant, which means that it is not produced, or dependent on any other power. For example, local government has no primary power, because the power it has, is given to them. In contrast, the state's powers are taken by itself through a political process. The state exercises its power independently, using means of coercion such as the army, the police, the tax offices, the courts, and so on. Essentially, state power is the supreme ability to enforce and compel submission and compliance of any other force or will within the state, that has a monopoly on legalized force or coercion (Venizelos, 2008).

Power is also organized and lasting, institutionalized, and subject to the law. It manifests itself through impersonal institutions, is legally formed and disengaged from its bearer, and appears as an act of the institution. It is related to the internal sovereignty defined by the Constitution (Venizelos, 2008).

There are different ideas about the actions of the State, which refer to its scope, nature, and usefulness. These ideas have led to the development of various political theories related to the purpose of the State (Manitakis, 2004).

The first theory dates back to the 18th century, when the modern form of the state institution was created. It has a theological character, as it suggests that the state has a divine origin and can be divided into religious and secular. The Pope represents the religious part, while the emperor represents the secular part (Manitakis, 2004).

Another theory is the theory of force, which derives from the natural law of the dominance of the strongest. According to this theory, the state serves as a powerful force that is imposed on the weak (Manitakis, 2004).

Other theorists examine the concept of the state in relation to the law. They regard the state as an institution that regulates family law, property law, and contract law (Venizelos, 2008).

Some people believe that the state is necessary, to bring about the moral perfection of man, while others think that the state is a psychological need of the individual (Manitakis, 2004).

In recent years, especially after the Second World War, theories of statehood have changed, due to the social changes that have taken place. Some theorists believe that the state is the creation of the ruling social class and its ultimate goal is to preserve the achievements of that class (Marxist-Leninist view). Others believe that the state is a creation of the market which also has the responsibility to regulate social issues (Neoliberalism), while others believe that the state should intervene and regulate social and economic issues ensuring an adequate standard of living for its citizens (Social Democracy) (Stasinopoulou, 1997).

2.2. Systems of organization of the state

The organization of the state is determined by its political and administrative structure, which can be centralized, decentralized, self-administrative, regional, federal, popular, bureaucratic or public service concessions (Kontis, 2001). According to the Greek Constitution, the Greek state is organized using three of these systems: centralized, decentralized, and self-governing (Tachos, 2005).

In the centralized system, decision-making power is held by public administration bodies. The central services guide, coordinate, and supervise regional bodies. In the decentralized system, the central administration creates various services of the state mechanism in the Greek periphery, and grants them various executive powers to ensure the smooth operation of the public sector. The administrative bodies that staff both central and regional structures, belong to the same legal entity and are accountable to the state (Typas & Katsaros, 2008).

The self-governing system is independent of the state and is governed by elected local representatives of the people. Its administrative staff is subordinate to the Local Self-Government Organizations. Although the state does not have the constitutional right to intervene in this system, it has the power to make various arrangements that either strengthen or weaken it, without abolishing it or canceling the decisions it makes (Typas & Katsaros, 2008).

2.3. Public bodies

Public organizations and public enterprises are entities owned by the community and represented by the state. They play a significant role in the country's economy. The primary goal of both public enterprises and government services is to provide quality services to citizens, while safeguarding the public interest and exercising public authority through concession (Bourantas & Papalexandri, 2004).

A public entity operates on two axes: financial and organizational. The financial axis refers to the fact that the public entity has received a relevant license from the state, or another legal entity, to conduct business activities, by providing services and products. The organizational axis is expressed through a category of public legal entities, which in turn are subjects of certain businesses in the economic sense. Most of

the time, however, a public entity operates as a separate economic entity, without being forced to operate under the supervision of the executive power to manage its affairs successfully (Bourantas & Papalexandri, 2004).

2.4. Historical review of the Greek public administration

The organization of public administration in modern Greece dates back to 1823, when Ioannis Kapodistrias, the first governor of Greece, established a classical model of governance, by dividing the administration into central, regional and local. However, the implementation of this model faced challenges, due to party interventions, lack of funding, untrained human resources, and immaturity on the part of the citizens. This led to delays in the establishment of a trustworthy public administration, which was further understaffed, due to political interventions that continued for many years (Spiliotopoulos, 2017).

Despite the constitutional enshrining of the permanence of employees and the manner of its staffing in 1911, political interventions continued to be rampant, and it took until after the civil war in the 1950s, for the first serious restructuring attempt to be made on the Greek public administration. Even then, party interventions persisted to some extent, and only in 2000 did a new effort to restructure the public administration begin. This time, new management principles such as the New Public Management were adopted, and stricter criteria for selecting administrative officers were implemented, to ensure a more efficient and trustworthy public administration, according to Spiliotopoulos (2017).

2.5. Public administration

The term public administration refers to the daily actions of the executive function and its organs, including decision-making, work planning, goal formulation, organization and review, employee management and supervision, control and evaluation, and other activities carried out by government bodies (Makridimitris & Pravita, 2012).

The public administration's functions must meet the citizens' demands for qualitative, quantitative, and speedy services, while utilizing the resources available from the state mechanism and being supervised by it (Zevgaridis, 1985).

Public administration can be classified into narrow and broad categories. In the narrow sense, it refers to the central and decentralized services of the ministries, legal entities under public law, and the services of the State. In the broadest sense, it includes all public organizations and enterprises responsible for implementing public administration purposes. Some public services operate partially with public authority, such as public benefit organizations and businesses. In these services, the administration is appointed by the state and accountable to it as the main shareholder (Zevgaridis, 1985).

The work of public administration is distributed hierarchically, as shown in Figure 6, with the higher-ranking officers such as the Supervisors of the General Directorate at the top, who have all the responsibility. The Supervisors of Directorates (lower-level administration than the General Directorate), the Department Supervisors and the Supervisors in between, are in the middle and coordinate the activities of their junior officers and the rest of the workforce, based on goal setting. The workforce at the base of the pyramid produces products and provides services.



Figure 6. Greek Administrative pyramid

2.6. Public Administration Systems

Kontis (2001) has categorized administration systems into various types such as centralized, decentralized, self-administrative, federal, regional, collective, bureaucratic, public service concession system and people's state system.

In Greece, the public administration has adopted three systems as described by Tachos (2005):

1. Centralized system: In this system, the central agencies hold special powers and provide guidelines to the regional bodies which they supervise.
2. Decentralized system: In this system, public services that operate outside Athens have the responsibility of managing local issues.
3. Self-administrative system: In this system, the authorities of public administration operate autonomously and manage cases concerning a specific geographical area and specific type of needs.

The Greek public sector includes public and government services such as the military, police, infrastructure, public transportation, public schools, and health care system, as well as elected officials. Consequently, the duties of General Directorate, Directorate and Department Supervisors are tailored to the needs, goals, and mission of each service (Mavromoustakou, 2009). It is worth noting that the Supervisors of General Directorates and Directorates are commonly referred to as Managers (or Directors) in the Greek Public Administration, while Department Supervisors are referred to simply as Supervisors.

The duties of the Supervisors of General Directorates and Directorates typically include supervising and controlling the administrative and financial departments, making proposals to the organization's board, ensuring the smooth functioning of the Directorates they oversee, and implementing the organization's strategy and decisions in close collaboration with the Department Supervisors. They execute the strategy and decisions of the organization's management (Dimou, 2003).

Accordingly, Department Supervisors have oversight and control over their departments and ensure their smooth operation, transfer and monitor management decisions for compliance and inform Directorate Supervisors of both the progress of the execution of the decisions and the problems of the departments (Dimou, 2003).

In this study, the participants were either Directorate Supervisors (Managers) or Department Supervisors (Supervisors). In the questionnaire of the study, the terms Manager and Supervisor were used, as their corresponding official terms Directorate Supervisor and Department Supervisor are not commonly used between public servants.

2.7. Human resource management in public administration

Managing human resources in the public sector differs from the private. In Greece, the public sector follows general rules of administration, while also embracing individual principles, to ensure the impartial and effective action of its administrative bodies. These principles include following the legal framework, protecting the public interest, legal and legitimate action, continuity of operation, rule of law, good administration, proportionality, impartiality, equality, public administration control, and formal separation of powers (Holevas, 2004).

According to Gerontas (2014), the Public Human Resources Administration must resolve complex personnel procedures and legal arrangements, prioritize and determine necessary criteria for filling new or vacant positions, establish conditions for filling positions of responsibility and promoting employees, improve the inflexible remuneration system, and provide performance incentives.

Overall, public sector human resource management is guided by softer management standards, as the public sector aims to serve the public interest and citizens, while the private sector aims for profitability (Gerontas, 2014).

2.8. Motivating human resources in the public sector

Incentives in the private and public sectors differ, due to the fact that financial rewards in the public sector are predetermined and linked to the general economic conditions of the state. As a result, public sector employees are motivated by three specific types of motivation as identified by Perry et al. (2010):

1. Rational Motives: These are incentives that encourage employees to increase their personal benefits, while also expressing commitment to the mission and goals of

their service, by cultivating the belief that personal benefits align with the benefit of society as a whole.

2. Norm-Based Motives: These are incentives that encourage employees to act based on factors such as duty, loyalty to the Public Administration, and social equality.
3. Affective Motives: These are incentives that encourage employees to help others through their work, and to commit themselves to the greater good of society.

Chapter 3

Lifelong learning and training of the Greek public administration Executives

The term "Lifelong Learning" refers to all the actions that help individuals acquire knowledge and skills throughout their lives. These actions aim to develop one's personality and professional, social, and financial aspects (Law 3879/2010).

In Greece, the structure of lifelong learning is based on two main pillars. Firstly, it is accessible to all citizens, regardless of their age and educational level. It covers any learning process that contributes to the acquisition of general and scientific knowledge, aiming to improve skills and abilities. Secondly, it is available to graduates who want to either train in their field of study, or update their knowledge. This pillar encompasses any specialized education process, that aims to achieve professional specialization in a specific career (Law 3879/2010).

3.1. Basic principles and objectives of lifelong learning

Lifelong learning comprises formal education received from official institutions at all three levels of the Greek system, non-formal training (state-recognized professional certification), and informal learning (self-education and experience) (Law 3879/2010).

The principles of lifelong learning revolve around the individual, emphasizing active learner participation, holistic knowledge, and skill acquisition from all forms of learning, and the personal, social, and economic development of the individual, aiming for their all-round advancement (Law 3879/2010).

Lifelong learning plays a vital role in Greece's development, allowing for continuous updating of employees' knowledge and skills, and providing early detection of labor market needs. It also promotes social integration by providing specialized professional knowledge, skills, and abilities to vulnerable groups, aimed at ensuring their social and professional integration (Law 3879/2010).

It is noteworthy that lifelong learning is a primary objective of the European Union, seeking to make its territory the world's largest economy of knowledge and skilled labor (European Parliament and Council, 2006).

Moreover, lifelong learning promotes citizenship, by enabling individuals to realize that acquiring new knowledge enhances their abilities and responsibility for their actions. This allows them to participate in shaping the social, economic, and cultural framework of their society (Gougoulakis, 2012).

3.2. The knowledge economy

The term "knowledge economy" refers to the importance of acquiring new knowledge and its impact on an organization's survival in a competitive environment. It has replaced the "information economy," as it encompasses more areas of the technological sector, rather than just the possession of information. Today, it refers to the process of producing, collecting, processing, presenting, and disseminating information and data (Powell & Snellman, 2004).

In this context, it is of paramount importance to upgrade the professional skills of human resources in each institution. This reinforces the significance and role of lifelong learning, as more employees are turning to it to upgrade their professional skills (Gougoulakis, 2012). Acquiring new knowledge and specializing is crucial.

It should be noted that around the time the concept of the "knowledge economy" emerged, a new scientific field called "knowledge management" also came into existence in the field of management. According to the American Center for Productivity and Quality (APQC), "knowledge management" related to the development of internal processes within an organization, aimed at identifying and utilizing the knowledge of human resources, which can enhance its competitive advantage (McInerney, 2002).

As early as 1996, the European Commission referred to the knowledge society as the natural evolution of the technological revolution, and its effects on important sectors of the economy, employment, and social cohesion. In March 2000, the European Union's new strategic plan was formulated in Lisbon, where education was combined with the economy and employment (European Parliament and Council, 2006).

The Lisbon Council is a significant milestone, both for its findings and decisions, as it led to the implementation of programs and actions in the field of education, with particular emphasis on research and innovation (Tsaousis, 2009). The shift towards the

"knowledge society" has also had a significant impact on the nature of work, creating a new type of worker, seeking training, specialization, and the acquisition of new professional skills (Pavlidis, 2012).

Investing in lifelong learning is a top priority for the European Union, as it believes that it can play a crucial role in becoming the world's leading power in the knowledge economy with the most skilled workforce. The EU's policies aim to enhance its competitiveness and maintain social cohesion, by developing education strategies and social policies. The ultimate objective is to foster social capital that can help shape political decisions, in areas that impact citizens' daily lives, such as the economy, labor, and culture.

As per a relevant directive (Decision No 1720/2006/EC of the European Parliament), education, training, and cultivation of citizens can lead to innovative ideas, alternative experiences, and encourage the integration of different cultural elements. It also fosters flexibility and tolerance towards differences, redefining society's goals, expectations, and priorities on an individual and social level.

The people who work in an organization are its most valuable asset. However, public organizations need to achieve their goals in order to improve the effectiveness and quality of their services. Therefore, it is important to continuously strengthen the knowledge of human resources and their specialization in their respective fields (Le et al., 2023). In-service and continuous education are key ways to invest in human capital, making them advantageous means for every effort and desired change. The human factor is paramount, and its utilization and motivation are crucial. Properly trained executives are necessary to undertake the task of mobilizing the population, a fact that is beginning to be understood by competent bodies. They develop various educational programs, such as postgraduate programs on local, community, and regional development, or training of executives on leadership and decision-making (Gemeliari & Tsolakidou, 2016).

A new necessity has emerged in the public sector, which is the need to develop lifelong guidance and career counseling services that will be provided to civil servants throughout their professional lives. This means that career management, as well as their combined training (coupling career path with training path), is a development action and an investment in the public sector's human resources. It affects not only the

individual but also the organization it serves. Therefore, staffing the administrative or human resources development departments of public sector services with appropriately trained lifelong counseling, guidance, and career counselors, is a relevant political decision (Gemeliari & Tsolakidou, 2016).

The public sector is constantly striving to improve its competitiveness and efficiency. To achieve this, it is essential for the public administration staff, especially the executives managing human resources, to acquire new knowledge and skills. This will help them adapt to the changing data and context in which they operate. The public administration is an institution of legitimacy and accountability, and therefore, the acquisition of new professional skills is necessary to meet the expectations of society (Rammata, 2016).

The continuous improvement of the skills of the human resources of the public administration is critical to settling citizens' issues and providing quality and efficient services to the citizens. The use of electronic government and new information technology and telecommunications can help achieve this goal. The transition to a modern public administration requires a shift in the human resources management system. It should be based on the potential of the professional skills of its employees and recognize their contribution to organizational performance (Gemeliari & Tsolakidou, 2016).

Front-line executives, such as managers and supervisors, need specialized knowledge of human resources management to improve the efficiency of services. In the new operating conditions of the public sector, management practitioners need to be able to respond to the demands of the times and co-shape the new operating framework. They should also be able to push the workers they manage to adopt new attitudes and behaviors required for efficient and quality public services (Rammata, 2016).

Moreover, management practitioners should possess the necessary knowledge to manage the continuous influx and repositioning of knowledge, recognize the controlled and uncontrolled changes that might occur, be flexible and respond to complex multi-factorial environments, and have feedback ability through critical thinking to respond to each challenge successfully (Danos & Samanta, 2015).

3.3. Executive training bodies of the Greek public sector

The dominant institution in the training of human resources in the Greek public administration is the National Centre for Public Administration and Local Government (EKDDA), which was founded in 1983 (Law 1388/1983) and aims to:

- ✓ vocational training, education and training of public administration staff
- ✓ training of elected bodies of local authorities
- ✓ preparation of staff
- ✓ conducting surveys, studies regarding the formulation of a strategy for the development of human resources
- ✓ contributing to the continuous modernization of the organization and functioning of the public administration through research, studies and reform projects
- ✓ support, the procedures for the implementation of the reform actions of the Greek government ministries
- ✓ establishing a training voucher to monitor their participation in training processes.

It should be noted that the training of civil servants is a fundamental factor in creating an infrastructure of competent and well-equipped and trained staff. Its ultimate objective is to provide the necessary know-how for the effective and efficient performance of the employees' duties (Law 1388/1983).

The public sector offers its employees training programs during their tenure. These programs are divided into seven axes as per Law 1388/1983.

The first axis, known as Pre-Introduction, is designed to help new civil servants quickly adapt to their job requirements. This is achieved by developing managerial skills, providing an understanding of modern information and communication technologies, and teaching interdisciplinary knowledge and principles.

The second axis is called Introduction and is mandatory training that should take place within the first eight months of an employee's appointment. The Training Institute (INEP) is solely responsible for implementing these programs.

The third axis, Training, is ongoing training throughout an employee's service. It covers general knowledge in areas such as public management, economics, and

information technology, or specialized knowledge regarding specific operational programs.

The fourth axis is concerned with employee specialization, which includes monitoring and organizing training programs based on service needs assessed by relevant ministries or independent public service training units.

Promotional is the fifth axis and is designed for employees of the University and Technological Education category of Ministries, Regions, Legal Entities of Public Law, and Local Government Organizations. It aims to develop managerial behavior knowledge and skills that correspond to the requirements of the Head of Management duties.

The sixth axis, Further Training, is for employees who have completed at least three years of service. It aims to broaden their scientific or technical knowledge and to specialize in modern management and technology techniques.

Finally, Postgraduate Specialization is the seventh axis and is for officials with at least three years of service and up to 50 years of age, holding a university degree. The goal is to obtain a postgraduate degree that is relevant to their work subject.

The National Centre for Public Administration and Self-Government (EKDDA) provides services based on the following principles:

- ✓ Collaborating with social partners, and public and local government bodies to achieve synergy.
- ✓ Responding to real educational needs with defined objectives and expected results that improve citizen services.
- ✓ Innovating projects by using international methods, good practices, and know-how transfer.
- ✓ Ensuring quality in educational activities and using total quality management tools to deliver high-level services.
- ✓ Certifying educational structures and training programs of other public bodies.
- ✓ Providing expertise in targeted human resource development programs in a digital environment.

The foundation of the educational process is based on the belief that managing and developing human resources in public administration leads to qualitative and effective citizen service. (ekdda.gr, n.d.)

3.4. Training programs for managers and supervisors

The National Centre for Public Administration and Local Government (EKDDA) is the primary institution for training executives in the public sector. EKDDA offers various training programs designed specifically for managers and supervisors in the public sector. These programs aim to equip them with new skills in human resource management and administrative skills in various fields. Some examples of these programs include:

- ✓ **Leadership and Strategic Thinking: Organizational Changes.** This program aims to provide modern knowledge to public sector executives so that they can respond to the need for a more efficient administration. It covers effective leadership and how personal motivation can be connected with the organization's strategy.
- ✓ **Problem Solving and Decision-Making Techniques.** The goal of this program is to develop knowledge and inventive thinking to solve problems through democratic dialogue. Trainees learn how to analyze and solve human behavior problems, formulate proposals for introducing successful changes in the public sector, draw up business plans and select the right people for the right job.
- ✓ **Human Resource Management.** The purpose of this program is to equip trainees with knowledge and skills that will enable them to practice human resource management by adopting innovative practices that promote performance improvement with objective evaluation criteria and promote initiative and teamwork to achieve results. The courses include ways to utilize and manage human resources, ways to properly evaluate employees, and how to develop an action plan to improve the performance of the organizational unit and the personal development of employees.
- ✓ **Training of Department Heads.** The purpose of this program is to provide trainees with knowledge about the issues related to the exercise of administrative work in the modern environment. It aims to contribute to the effective and efficient operation of the public sector and improve the quality of the services provided to citizens. The courses cover topics such as motivation and development of human resources in public organizations, the role of department heads in modernizing public administration, and how to exercise leadership in modern organizations.

Other training programs focus on the improvement of social skills of managers. One such program is relevant to communication disorders and the art of persuasion. It aims to improve the knowledge, skills, and attitudes of public administration human resources and minimize conflicts and manage communication malfunctions effectively, thus contributing to more efficient administration (ekdda.gr, n.d.).

Chapter 4

Literature review

4.1. Training of managers and supervisors in human resource management seminars

Effective human resource management is vital for any company or organization, regardless of its sector. While organizations may differ in their objectives and philosophy, the people who work for them are integral to achieving their goals and improving efficiency. Therefore, efficient human resource management is crucial for the survival of any organization (Aspridis & Pouliana, 2021).

Various international studies have proven the effectiveness of integrating the principles of work psychology into human resources management. This approach promotes efficiency, innovation (Tan et al., 2023), employee creativity (Shafique et al., 2020), job satisfaction (Qing et al., 2020), and employee commitment to organizational goals (Ahmad & Gao, 2018).

Tan et al. (2023) assessed employee performance after an intervention program, in which managers were trained on how to integrate the principles of work psychology into human resource management. The program focused on ethical leadership and its impact on the effectiveness of public sector organizations in Singapore. After the program, the organizations' leaders adopted the transformational leadership model. After six months, employees' efficiency had increased significantly, as had their behaviour in the workplace. The organizational culture and citizens' service hours were improved, leading to an improvement in the perceived quality of services provided by the organization.

Shafique et al. (2020) came to similar conclusions in a study on ethical leadership and its impact on organizational functioning. The study included 322 organizations operating in Pakistan and showed that ethical leadership, which incorporates many principles of psychological work, can promote innovation, increase creativity, and improve the efficiency of human resources.

Ahmad & Gao (2018) found that the adoption of the ethical leadership model by organizational leaders significantly increased employee commitment to organizational goals. The study involved 251 employees in the banking sector of Pakistan.

Qing et al. (2020) surveyed 467 employees in Chinese public sector institutions and found similar results in terms of employee commitment to organizational goals. In addition, the study found that applying the rules of work psychology also increased job satisfaction.

Other studies have shown that managers in organizations recognize the importance of human resources management, and undergo further training to improve their skills, taking part in seminars, and training programs. Several studies have examined the attitudes of public sector managers and their training needs, focusing primarily on the area of human resource management (Al Khajeh, 2018).

It is vital to note that most studies focus only on the training needs of public education managers. There is a lack of research that explores human resource management in all divisions of the public sector.

Research indicates that managers in the public sector lack adequate training in human resource management, as shown in table 1. For example, Kotou (2021), conducted a study on the training needs of primary school managers and supervisors. The survey collected data from 100 participants and revealed that primary school managers have a positive attitude towards education and its pursuit. However, some respondents admitted to having shortcomings in managing their subordinates, while a significant number expressed a pressing need for training to develop their skills in this area.

Similar findings were found in the study by Zacharis et al. (2020), who studied the views of 132 primary school principals and vice-principals. The survey showed that managers who had previous training in management had lower rates of inefficiency than those who had no training. The study also found that the reasons that prompted the management executives to undergo training, were related to their personal and professional development, as well as the effectiveness of their work.

The benefits of training in management practice are also highlighted in research by Levin et al. (2020), who evaluated data from primary empirical studies and found that

the success of executives leading various organizations is closely linked to their training in human resource management.

Previous studies, such as the study by Handolias (2017), the study by Giavrimis (2013), and the study by Kalogeropoulou (2010), also highlighted the need for training in human resources management issues. In fact, the latest study (Kalogeropoulou, 2010), showed that most managers perform their work based on experience gained from years of work and instinct and not because of studies or training in management.

It is essential to note that experience emerges as a key factor for success in administrative tasks, as found in other studies such as that of Béteille et al. (2011), who studied the training of educational leaders by analyzing primary research data to find that public managers who had experience in administration were more effective.

Table 1: Studies on leadership training

Year	Researchers	Participants	Subject of the study	Result
2021	Kotou	100	Adequate knowledge of human resources management	Deficiency. Training required
2020	Zacharis, Moisoglou, Sourli and Tsiabri	132	Adequate knowledge and motivation to participate	Deficiency. Training required Motivation: personal and professional development and effectiveness
2020	Levin, Leung, Edgerton, & Scott	Literature review	Adequate knowledge and training in administration	Skilled leaders are more effective
2017	Handolias	84	Adequate knowledge of human	Deficiency. Training required

			resources management	
2013	Giavrimis	40	Adequate knowledge of human resources management	Deficiency. Training required
2010	Kalogeropoulou	122	Adequate knowledge of human resources management	Deficiency. Training required
2011	Béteille, Kalogrides, and Loeb.	Literature review	Adequate knowledge and experience in management	Satisfactory competence and good administrative practices based on experience

4.2. Service efficiency and leadership model in the exercise of management

There have been numerous studies that examine the efficiency and effectiveness of public sector organizations, including their leadership and employees. However, the literature lacks studies evaluating the performance of organizations after their leadership has undergone HRM training. Similarly, there is a lack of research that studies the effectiveness of leadership trained to use psychological factors in the exercise of leadership. Therefore, this section presents recent studies (as shown in table 2) that relate organizational effectiveness, motivation, and human resource performance to the leadership model adopted by managers and heads of departments, considering that some types of leadership make use of psychological factors (mainly aiming at meeting employees' needs, rewarding and motivating them to improve their performance).

There have been only two recent studies in Greek literature that reference the use of psychological factors in managing human resources in the public sector. The first study, conducted by Rouli (2017), explored the views of 82 public sector employees and found that factors related to human resource development were at low levels. As a result, employees were not performing to their full potential, and the organizations they served were characterized by low effectiveness. The study also found that staff motivation activities were not taking place at a high level in the public sector, possibly due to the lack of incentives to mobilize human resources in the public administration.

Similarly, Zacharias' (2017) research examined the relationship between leadership and employee motivation in public hospitals in Greece. The survey had 91 participants, and the results showed that there is a need for leadership that creates a common vision and a strong culture of cooperation. Such elements would help motivate employees, improve their performance, and enhance the results produced. The study also revealed that employees' needs vary based on their position, age, and experience.

In another recent study, Despoteris (2021), evaluated the views of 100 managers and employees of various public sector organizations to determine the most effective leadership style for nurturing human resources and achieving the organization's goals. The study also aimed to identify the leadership model most commonly used by managers and supervisors. The results showed that the widely used leadership model is transactional, although the most effective model is the transformational one. This model, according to a recent study by Halatsi (2021), is frequently used in the private sector.

Halatsi's (2021) study, which considered that human resources are a resource that helps an organization to mobilize other resources, aimed to evaluate the leadership model used by leaders of various private organizations and companies. The survey had 488 participants (leaders and employees), and the results showed a strong positive correlation between the leadership model, human resource efficiency, and organizational effectiveness. The study found that the most effective leader is one who applies the transformational model, which enhances trust among team members, increases job satisfaction, and boosts employees' commitment to the organization's goals. This, in turn, makes them more efficient, resulting in a more effective organization.

However, other studies have also recorded an increased use of the transformational model in various public sector organizations, which was attributed to differences in organizational structure and organizational culture by service and sector. For example, in the literature review that Stefou (2020) conducted as part of his research in order to study the leadership model used in the Armed Forces (Greek Army), it was found that the transformational model is increasingly adopted, as it is the most effective even in the military services that have a vertical command structure (strict hierarchy). At the same time, in the quantitative study that he included in his research, in which 650 people from all over Greece (leaders and employees) participated, the participants' views on the degree of influence of leadership behaviour on the performance of organizations were investigated. The results showed that there is a strong relationship between the leader's behaviour and employee performance and that employee commitment to service goals is closely related to their sense of satisfaction, reward and encouragement from their superiors.

Similar results, for the effectiveness of transformational leadership, were recorded in the research of Dimopoulos and Iordanidis (2019), who, drawing on the responses of 177 teachers, studied the leadership style in relation to the effectiveness of the Principals and Heads of Secondary Education. The findings showed that transformational principals, to a significant extent, motivate teachers to put in extra effort in the performance of their duties, thus promoting the effectiveness of the school organization, while increasing employees' sense of job satisfaction.

It is worth noting that in other research, found in the international literature, it appeared that the most effective leadership model is the transactional one, while the transformational model is the most desired by the employees. Indicative is the research of Sudha et al. (2016) who examined the leadership model in relation to the effectiveness of public education services. From the results of the study, in which 90 people participated, it appeared that the transactional leadership model contributes more than other models to the efficiency of employees and the effectiveness of organizations.

Table 2: Studies on leadership model and service effectiveness

Year	Researchers	Participants	Subject of the study	Result
2021	Despoteris	100	Leadership model for service effectiveness	Transformational model
2021	Halatsi	488	Leadership model for service effectiveness	Transformational model
2020	Stefou	Literature review and empirical study with 650 people	Leadership model for service effectiveness	Transformational model
2019	Dimopoulos and Iordanidis	177	Leadership model for service effectiveness	Transformational model
2017	Zacharias	91	Relationship between leadership and employee motivation	Low motivation and low efficiency
2017	Rouli	82	Levels of use of psychological agents	Low levels of motivation, efficiency and effectiveness
2016	Sudha, Shahnawaz, and Farhat	90	Leadership model for service effectiveness	Transactional leadership model

4.3. The role of the factors 'gender' - 'age' - 'educational background'

Also, in this case, a gap was identified in the literature regarding the role played by the factors gender, age and educational level, both in human resource management training and in the use of psychological factors in the exercise of management. Thus, considering that the use of psychological factors in the exercise of management is

related to motivation and the leadership model, this section includes studies related to the effectiveness and the leadership model as well as the intention to train in human resource management.

4.3.1. The role of the 'gender' factor

Many people argue that gender has an impact on people's mindset and behaviour (McCarthy, 2015). This viewpoint is supported by various studies that suggest that female managers tend to embrace more democratic leadership models than their male counterparts. Eagly and Johannesen (2001), research, which drew on primary studies, found that women in leadership positions can motivate employees to a greater extent than male managers by using empowerment and reward tactics, making them more productive and the organization more effective. Similarly, Williams' (2019) recent study, which evaluated the leadership style of eight female public sector executives, found that women are more flexible in performing their duties and managing human resources. This finding was attributed to the tendency of female managers to adopt leadership models depending on the situations they face.

Litsa's (2021) recent research, which evaluated the leadership models used by 22 female managers and supervisors in public and private sector services, recorded similar results. Another finding that emerged from this study was that public sector leaders, in several cases, adopt a different leadership model compared to private sector leaders. The two dominant leadership models were transformational and transactional, and participants estimated that they managed to mobilize workers to a greater extent in this way.

Regarding the role of gender as a factor in the intention to acquire knowledge in human resources management, interesting results emerged from Kotou's (2021) research. The study investigated the educational needs, in matters of human resources management, in the field of public education and found that men need more training in general issues related to public administration and issues related to human resource management. 100 principals and heads of primary education participated in this particular study.

On the contrary, earlier research by Adamos, (2014), in which 412 managers of public education in Greece participated, showed that women had greater training needs in matters of human resource management than men.

Finkel et al.'s (2021), study evaluated the outcomes of HR leadership training. The researchers found that women benefited more than men and made better use of the knowledge they acquired, which facilitated their professional development. The finding was based on processing the responses of 1.819 people working in administrative positions in the Danish public sector.

Similar results were recorded in the research of An and Meier (2021), who studied the opinions of 408 managers and supervisors, as well as 4.352 employees, in financial services in the Danish public sector. The study found that female leaders often choose the transformational leadership model over men and are much more likely to increase the effectiveness of the services they lead by acquiring both knowledge and experience.

Table 3 shows the studies that have been conducted on the relationship of gender to education and leadership, the number of participants in each study, and what were the subjects and results of the studies accordingly.

Table 3: Studies on the relationship of gender to education and leadership

Year	Researchers	Participants	Subject of the study	Result
2022	Kotou	100	Training needs in human resource management	Men need more education than women
2021	Finkel, Grøn, & Hughes	1.819	Training results in human resources management	After gaining knowledge women benefit more than men
2021	An, & Meier	4.760	Leadership model chosen by women	Transformational model

2021	Litsa	22	Leadership model chosen by women	Transformational and transactional model
2019	Williams	8	Leadership model chosen by women	Choice of model according to the occasion
2014	Adamos	412	Training needs in human resource management	Women had greater needs than men
2000	Eagly & Johannesen	Literature review	Employee motivation	Women manage to motivate employees to a greater extent than men

4.3.2. The role of the factors "age" and 'educational level'

As part of her research into the educational requirements of directors and heads of primary education in Greece, Kotou, (2021), surveyed 100 participants and analyzed their responses in relation to their age and level of education, as shown in table 4.

The study revealed that experience, in addition to training, plays a crucial role in determining the educational needs of managers. Older executives with more experience required less training on public administration matters than their younger counterparts. However, the educational needs of older executives were higher in areas such as leadership and human resource management.

Furthermore, educational background also influences the intention and need for training, particularly in matters relating to human resource management. Managers and supervisors who held a second degree, in addition to their basic qualifications, had a lower rate of training needs.

Table 4: Studies on the role of 'age' and 'education'

Year	Researchers	Participants	Subject of the study	Result
2021	Kotou	100	Correlation of educational needs with the 'age' factor	The older ones had increased educational needs in leadership and human resource management
2021	Kotou	100	Correlation of educational needs with the 'educational background' factor	Managers who had a second degree had less educational needs in human resource management

Chapter 5

Research methodology

5.1. Purpose, objectives and axes of the research

The Greek Public Administration has been promoting training programs, aimed at training managers and supervisors in the principles of work psychology at human resource management. The goal is to increase the efficiency of employees and the effectiveness of public services.

However, there is no documented data on the results of this effort. The present study aims to fill this gap by analyzing the participation of managers and supervisors in these educational programs and their application of the acquired knowledge.

The study has four specific objectives:

1. Record the level of training received by managers and supervisors of public services in the use of psychological factors in human resource management.
2. Determine how participants in training programs apply the knowledge they have acquired.
3. Record the level of efficiency and effectiveness of services provided by those on which the principles of human resource management through psychological factors are applied.
4. Analyze the role played by factors such as "gender," "age," and "educational background" in the training and application of psychological factors in human resource management.

The literature review reveals a gap in both participation rates and outcomes of training public sector leaders in human resource management using psychological factors. Similarly, there is a gap in the correlation between gender, age, educational background, and the intention to train and apply new knowledge. This study aims to fill these gaps.

The research is based on five axes:

1. Record the percentage of managers and supervisors of the Greek state who acquire knowledge on the use of psychological factors in human resource management by attending training programs.

2. Determine the rate of influence of factors such as gender, age, and educational background on the intention to receive education on the use of psychological factors in human resource management.
3. Record the percentage of trained managers and supervisors who use psychological factors in human resource management.
4. Record the relationship and influence of gender, age, and educational background in the application of new knowledge acquired.
5. Determine the rate of effectiveness of services led by managers and supervisors who were trained and applied the principles of human resource management through psychological factors.

5.2. Research questions

Similar with the objectives, are the research questions posed in the context of this study.

Specifically, the research questions are:

1. What is the percentage of Managers and Supervisors trained in the use of psychological factors in human resource management?
2. Is the intention of managers and supervisors to be trained in the use of psychological factors in human resource management influenced by the factors: 'gender', 'age' and 'educational level'?
3. To what extent do managers and supervisors apply the knowledge acquired in human resource management through psychological factors?
4. Is the application of what they have learned about the use of psychological factors in human resource management influenced by the factors: 'gender', 'age' and 'educational level'?
5. Is the level of employee efficiency and department effectiveness affected, where managers and supervisors use psychological factors in human resource management?

5.3. Methodological approach

Quantitative and qualitative methodologies are the most widely employed methodologies for conducting social empirical studies. The first method (quantitative) records the frequency of the issue under study, and processes the data with statistical tools. The second method (qualitative) studies an issue in depth, because it can look not only at the frequency of occurrence, but also at the cause that makes it happen (Kvale, 1996).

The primary goal of the researcher who employs the quantitative approach to examine the subject under investigation, is to identify and evaluate the changes that occur in various social phenomena, through numerical analysis, believing that this enhances the validity and objectivity of the conclusions (Babbie, 1992)

In this context, the researcher explores relevant theories, that are closely aligned with the topic under investigation. This exploration serves as a crucial foundation for developing research hypotheses and thought-provoking questions, which will guide the collection and analysis of invaluable data. Ultimately, these endeavours will drive the researcher towards formulating well-rounded and definitive conclusions (Bryman, 2004).

It is important to highlight that the prime objective of employing the quantitative methodological approach, is to ensure that the numerical data gathered and the ensuing outcomes possess a scientific rationality, by establishing a connection between theory and reality (De Vaus, 1993).

5.4. Participants in the study

The present study was conducted in the period from July 2022 -to October 2022. Participants were asked to answer a questionnaire designed by the researcher based on the study objectives and, axes.

The questionnaire was distributed using technological tools (Google forms) and sent to all Greek government departments (which, according to the official website of the Greek government, -Gov.gr- exceed 1.500) with a cover letter explaining the objectives of the survey, while including the required assurances from the researcher

regarding the anonymity of the participants and the use of the responses solely for the purposes of the study (Bryman, 2004). The response rate was high with 520 responses collected within four months.

5.5. Research tool

The most widely used tool for data collection in the quantitative methodological approach is the questionnaire (Bryman, 2004). In the context of this study, the research instrument was designed by the researcher based on the objectives (general and specific), and research questions (Bryman, 2004).

The questionnaire consists of four different sections which are structured as follows:

The first section includes basic demographic characteristics of the participants (gender, age, educational background, etc.).

The second section includes questions about participants' training in the use of psychological factors in HR management. In this section participants were asked whether they had attended relevant training programs and how they had been helped by them. Taking into account that there was a possibility that people who had not received relevant training might also participate, care was taken to ensure that those who answered that they had not participated in training programs, were excluded from the other questions. Instead, they were asked to answer a question that explored their reasons for not participating.

The third section included questions on how the participants had put their new knowledge into practice. It also included questions about the types of psychological factors they apply. In the first subsection of the questions (on the application of new knowledge in practice), participants who stated that they had not attended any relevant training program were excluded. In the second subsection, however, regarding the use of psychological factors used by Managers and Supervisors of the Greek public sector in human resources management, all participants were asked to respond (whether or not they had attended training programs), taking into account that in the literature there are self-taught leaders and charismatic leaders who, without formal training, instinctively use such factors (Weber, 1968).

The fourth section, which was also answered by all participants (taking into account the above assumption about self-taught and charismatic leaders), included questions related to the level of employees' efficiency and effectiveness after the use of psychological factors by their managers and supervisors.

It should be noted that the majority of questions were based on the five-point Likert scale, which included a statement and provided five possible answers starting with "strongly disagree", continuing with "disagree", "neither agree/disagree" expressing a neutral opinion, positive statement "agree" and ending with "strongly agree" (Arnold et al., 1967).

The Likert scale is used in assessing participants' opinions or behaviour. It is considered as an ordinal scale subcategory. It is used to evaluate the partakers by asking them to choose the degree of their satisfaction or agreement to several questions or statements, from a satisfaction/agreement range set by the evaluator.

A list of statements (affirmative or interrogative) is used by the evaluator, who's number varies from six (6) to thirty (30). These are paired with closed responses, usually given on a scale, indicating a varying degree of agreement or satisfaction. This range usually has a minimum of three (3) to a maximum of seven (7) points, and while 9 - point Likert scales have been used, are not as common. The following option groups are usually applied for the scale's gradation: (a) "Disagree", "Rather disagree", "Neither agree nor disagree", "Rather agree", "Agree" and (b) "Not satisfactory", "Slightly satisfactory", "Moderately satisfactory", "Very satisfactory", "Fully satisfactory" (Arnold et al., 1967, p. 31).

The rules used, i.e., the statements to which the aforementioned scores correspond, should be brief, lucid and offered in a language easily understood, also they should not encompass generalizations and should include the entire range in examination (Arnold et al., 1967).

The Likert scale is considered to be a hands-on, fast tool for the evaluation of a subject, but it also has some disadvantages. According to Hasson, and Arnetz (2007, p. 2) these are: In the first place, the manner in which sentences are expressed, can influence partakers' replies. Second, the array of responses can set an inconvenience for some of the partakers in choosing only one answer and, also, others can find it confining. In both cases, participants are forced to choose an answer that does not

express their true intent. Third, the total assessment gained from a Likert scale, is the outcome of many diverse assessments, which leads to data loss. Fourth, using collective scoring outcomes can lead to false assumptions. Finally, the use of neutral answers ("I neither agree - nor disagree") in the middle of the scale, can drive partakers to be neutral and indecisive, thus avoiding extreme answers. This can cause problems in recording probable opinions and responses, and have a major effect in the trustworthiness of the outcomes.

The questions and statements used in the questionnaire of this research, were selected by the researcher according to the aims of the research and after investigating the relevant Greek and international bibliography. Statements and questions corresponding to the Greek reality were selected, taking into consideration that answering them should not require spending much of the partakers' time (Javeau, 2000). Regarding the selection of questions/statements included in a questionnaire, the researcher may choose to have a positive or negative meaning, with the latter case acting as a method of verification of positive statements. For the above reason, in the questionnaire used in this research, negative questions were also used (Javeau, 2000).

5.6. Method of static analysis

Descriptive statistics were employed for data analysis, and the statistical program SPSS 27, which is frequently used to assess numerical data from social surveys, was used to process the data collected from the participant replies. That is, summarizing and displaying the results in tables (George & Mallery, 2019).

The Pearson Chi squared independence test was used to see how the results related to the factors of "gender," "age," and "educational background." This approach is frequently used to determine whether two variables are affine. We examine the following hypotheses:

H0: The observed frequencies match the expected frequencies because there is no link between the two variables.

H1: The two variables have a connection, indicating that there is a difference between the observed and expected frequencies (McHugh, 2013).

This Chi square test can only be used if all expected frequencies are greater than 5, or if 85% of expected frequencies fall between 2 and 5. Whether the difference between the estimated and actual observation values is statistically significant is determined by the χ^2 -test results (McHugh, 2013).

Additionally, the Fisher's exact test is typically used to provide an accurate test in situations where the affinity table is 2x2 and there is at least one anticipated frequency less than 5, making it impossible to do a Chi square test (McHugh, 2013). This indicator was also used in the present study when the frequency was less than 5.

Chapter 6

Results

6.1. Demographics

A total of 520 people who work as Managers and Supervisors in various Public Sector services in the Greek territory participated in the survey. Of these, 334 were women and 186 were men (Figure 7).

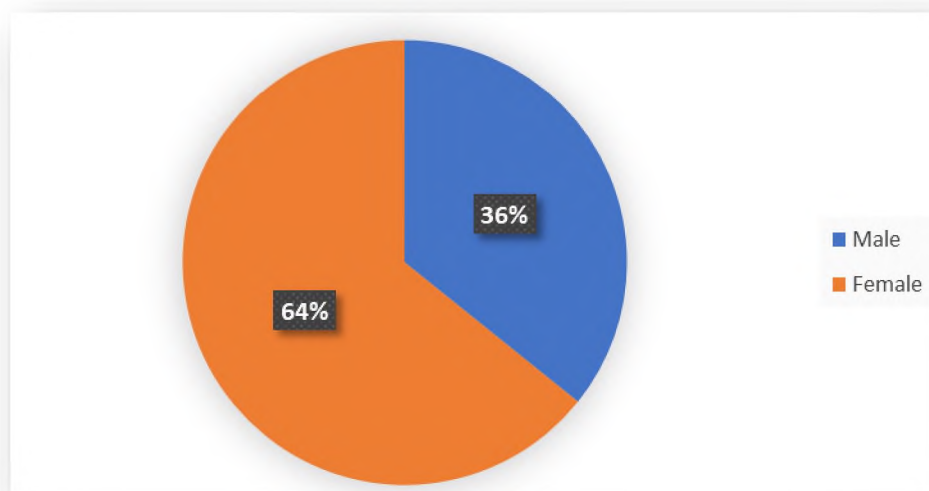


Figure 7: Gender of participants

According to Table 5, there are 262 individuals (50.4%) who are 51–60 years old, 187 individuals (36%) who are 41–50 years old, 38 individuals (7.3%) who are in the 30–40 age bracket, and 33 individuals (6.3%) who are over 60 years old. This demonstrates that the age range of the majority of managers polled is between 40 and 60.

Table 5: Age of participants

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30-40	38	7,3	7,3	7,3
	41-50	187	36,0	36,0	43,3
	51-60	262	50,4	50,4	93,7
	Up 60	33	6,3	6,3	100,0
	Total	520	100,0	100,0	

When asked about their educational history, 263 respondents, or 50.6%, said they had a master's degree. 36 people (6.9%) said they just have a secondary education degree and did not attend university, whereas 196 people (37.7%) said they hold a basic university degree. Lastly, 25 individuals (4.8%) reported having a PhD (Table 6).

Given that over half of the participants reported having finished a postgraduate program, the results indicate that the participants have a high level of education.

Table 6: Educational background of participants

Education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	36	6,9	6,9	6,9
	University	196	37,7	37,7	44,6
	Postgraduate	263	50,6	50,6	95,2
	PhD	25	4,8	4,8	100,0
	Total	520	100,0	100,0	

In response to a question concerning the number of years since they obtained their qualifications, 247 participants (47.5%) stated that it had been more than 20 years. Of the remaining individuals, 106 (20.4%) reported having finished their studies one to five years ago, 69 (13.3%) said they had finished their studies sixteen to twenty years ago, 49 (9.4%) said they had finished their studies ten to fifteen years ago, and another 49 (9.4%) reported having finished their studies six to ten years ago (Table 7). The findings indicate that nearly half of the participants finished their course a long time ago.

Table 7: Years since their education studies were completed

Completion of studies		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 years	106	20,4	20,4	20,4
	6-10 years	49	9,4	9,4	29,8
	11-15 years	49	9,4	9,4	39,2
	16-20 years	69	13,3	13,3	52,5
	Over 20 years old	247	47,5	47,5	100,0
	Total	520	100,0	100,0	

We asked participants to indicate their area of employment in an open-ended question about the Greek administrative sector. The results indicate that the participants work in the public sector, local government, national health system, education sector, security services (police, army), and justice services (Table 8).

Table 8: Field of work of participants

Work field		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Public sector	63	12,1	12,1	12,1
	Local administration	256	49,2	49,2	61,3
	Health	66	12,7	12,7	74,0
	Education	95	18,3	18,3	92,3
	Police	27	5,2	5,2	97,5
	Justice	13	2,5	2,5	100,0
	Total	520	100,0	100,0	

In terms of their job position, 372 (71.5%) are Department Supervisors and the rest (148 persons / 28.5%) are Directorate Supervisors (Figure 8), who are commonly referred to in the Greek public sector as Supervisors and Managers accordingly, as explained in detail in chapter 2 (subchapter 2.6).

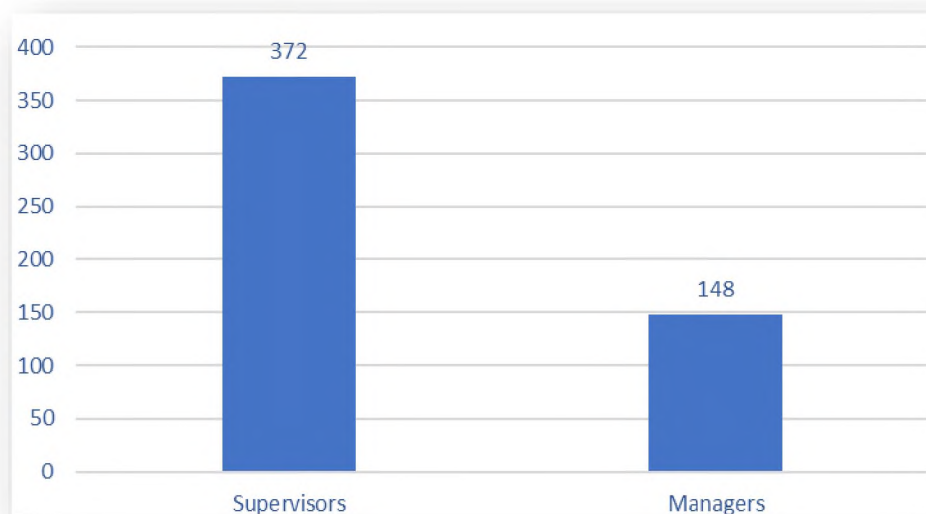


Figure 8: Position in their service

In relation to years of service in the role of manager or supervisor, 384 out of 520 participants (73.8%) said they had been in this role for the last ten (10) years, 100 people (19.2%) said they had been in this role for the last eleven to twenty years, 27 people (5.2%) said they had been in this role for the last 21–30 years, 9 people (1.7%) said they had been in this role for the last 21–30 years, and 9 people (1.7%) said they had been in this position for the last 31–40 years (Table 9).

The findings indicate that a significant portion of the participants have held a position of responsibility for ten years, indicating substantial expertise in human resource management.

Table 9: Years of service in current job

Years of service		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 - 10 years	384	73,8	73,8	73,8
	11 - 20 years	100	19,2	19,2	93,1
	21 - 30 years	27	5,2	5,2	98,3
	31 - 40 years	9	1,7	1,7	100,0
	Total	520	100,0	100,0	

6.2. Human resources training

Even though the first question in this section was asked to everyone, there was a separate route created for people who responded that they had not attended any seminars. Accordingly, individuals who answered "none" to the question 2.1, "How many HRM seminars have you attended," were forwarded to question 2.1.1, "Why did you not attend HRM seminars?" immediately. Additionally, they were left out of the following subsections' questions: 2.2. "How many years have passed since my last seminar?", 2.3. "How satisfied am I with my seminars?", 2.4. "How this training met

my needs?", and 2.5. "How the training helped me?" The reasoning behind this exclusion was that it was believed that their absence would have prevented them from developing pertinent opinions.

128 out of 520 participants (24.6%) responded negatively to the first question in the section, "*How many HR management seminars have you attended?*" by saying they had not attended any relevant seminars. Of the remainder, 307 (59%) had attended one to five seminars, 50 (9.6%) had attended six to ten seminars, and 35 (6.7%) had attended eleven or more seminars (Table 10).

Consequently, we can draw attention to the fact that 16,3% of participants had attended over five seminars.

Table 10: Answers to the statement "*HR management seminars attended*"

Attendance of seminars		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	128	24,6	24,6	24,6
	1-5	307	59,0	59,0	83,7
	6-10	50	9,6	9,6	93,3
	11 and over	35	6,7	6,7	100,0
	Total	520	100,0	100,0	

That is, out of the total number of participants (520 persons), 392 Directors and Supervisors attended HR management training seminars (Figure 9).

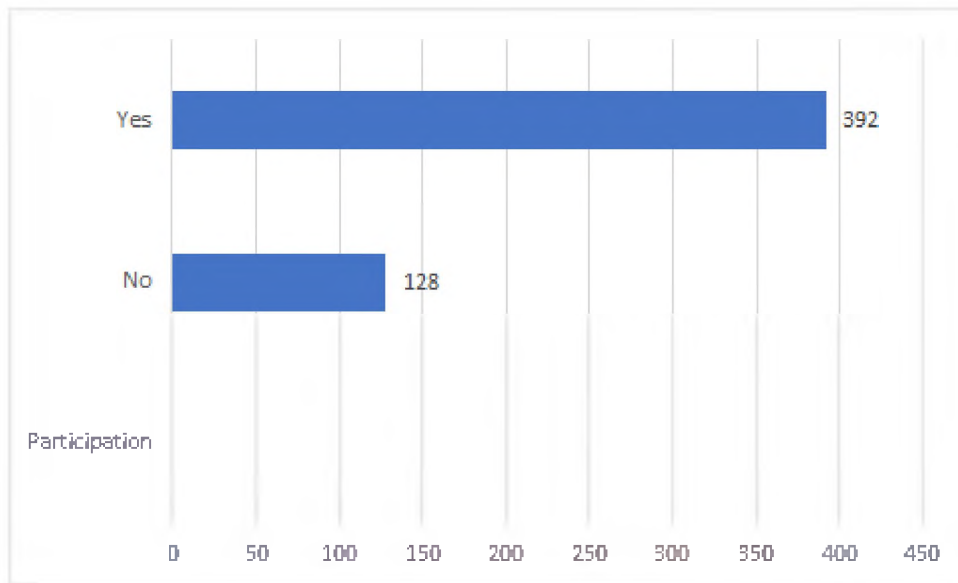


Figure 9: Attendance to training seminars

Only those who attended training seminars were able to respond to the remaining questions in section two, which examined the training of managers and supervisors in human resources management. As a result, only the 392 participants in the seminars—rather than the 520 survey respondents—were included in the total number of answers.

When asked how many years had passed since their last seminar, 392 respondents gave the following answers: 131 (33.4%) said it had been one to two years; 93 (23.7%) said it had been three to four years; 90 (23%) said it had been three to four years; and 78 (notebook 19.9%) said it had been at least five (5) years (Table 11).

Table 11: Answers to the statement “*Years passed since my last seminar*”

When was the last seminar		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	It was conducted this year.	93	23,7	23,7	23,7
	1-2 years	131	33,4	33,4	57,1
	3-4 years	90	23,0	23,0	80,1
	5 and more years	78	19,9	19,9	100,0
	Total	392	100,0	100,0	

They were questioned about their level of satisfaction with the instructional approach used in the seminars they attended in an effort to find out how satisfied they were with their involvement in the educational programs. Table 12 shows that a significant proportion of respondents (392 people/percentage 66.1%) expressed satisfaction with the educational method; 62 respondents (percentage 15.8%) expressed extreme satisfaction; 56 respondents (percentage 14.3%) appeared neutral; 12 respondents (percentage 3.1%) expressed dissatisfaction with the educational method; and three respondents (percentage 0.8%) expressed no satisfaction at all.

Table 12: Answers to the statement “*The training method was satisfactory*”

Satisfaction		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	3	0,8	0,8	0,8
	Disagree	12	3,1	3,1	3,8
	Neutral opinion	56	14,3	14,3	18,1
	Agree	259	66,1	66,1	84,2
	Strongly Agree	62	15,8	15,8	100,0
	Total	392	100,0	100,0	

Participants' opinions about how long the training should last are discussed with those who indicate a desire to succeed. The participants were instructed to indicate their level of agreement or disagreement with the statement "The training duration was not satisfactory" by selecting an appropriate response. Out of the 392 participants, 179 (or 45.7% of the total) disagreed with the above statement, selecting to respond "disagree" (139 people, or 35.5% of the sample) or "completely agree" (40 people, or 10.2% of the sample) to the statement that it is understood that the length of their education was sufficient to provide them with new, useful knowledge. Furthermore, 83 individuals (21.2%) have a neutral opinion, and 130 individuals (33.1%) responded "yes" (113 individuals/28.8%) and "totally agree" (17 individuals/4.3%), indicating that they felt the length of the schooling was insufficient (Table 13).

The aforementioned percentages indicate that educational program designers should consider carefully their duration, as it has the potential to impact the participation of public sector executives in educational initiatives over time.

Table 13: Answers to the statement “*The training duration was not satisfactory*”

Satisfaction with duration		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	40	10,2	10,2	10,2
	Disagree	139	35,5	35,5	45,7
	Neutral opinion	83	21,2	21,2	66,8
	Agree	113	28,8	28,8	95,7
	Strongly Agree	17	4,3	4,3	100,0
	Total	392	100,0	100,0	

Regarding the people who trained them at the seminars, participants were asked to rate their level of agreement or disagreement with the statement, "*The instructors did not satisfy me.*"

Based on their responses, it seems that most participants (265 individuals, or 67.6%) were happy with their trainers. Of them, 196 people (or 50%) selected "disagree," and 69 people (17.6%) selected "strongly disagree."

Nonetheless, 62 individuals (or 15.8% of the sample) expressed agreement (56 people, or 14.3% of the sample) or strong agreement (six people, or 1.5% of the sample) with the statement "*The instructors did not satisfy me,*" indicating their discontent with the calibre of the instructors. Meanwhile, 65 individuals (14.3%) remained neutral (Table 14).

Table 14: Answers to the statement “*The instructors did not satisfy me*”

Satisfaction with instructors		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	69	17,6	17,6	17,6
	Disagree	196	50,0	50,0	67,6
	Neutral opinion	65	16,6	16,6	84,2
	Agree	56	14,3	14,3	98,5
	Strongly Agree	6	1,5	1,5	100,0
	Total	392	100,0	100,0	

Inquiries concerning how the training satisfied their demands at work were also posed to the training seminar participants. In reference to the satisfaction of work needs, 267 respondents, or 68.1% of the total, selected "agree" (223 people, or 56.9% of the sample) and "completely agree" (44 people, or 11.2% of the sample) as their answers. Ten percent of the participants gave negative answers, selecting "disagree" (39 individuals, or 9.9% of the total) and "totally disagree" (four people, or 1% of the total), while 82 people, or 20.9% of the total, gave neutral responses (Table 15).

Table 15: Answers to the statement “*This training covered my work needs*”

Service needs		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	4	1,0	1,0	1,0
	Disagree	39	9,9	9,9	11,0
	Neutral opinion	82	20,9	20,9	31,9
	Agree	223	56,9	56,9	88,8
	Strongly Agree	44	11,2	11,2	100,0
	Total	392	100,0	100,0	

The subject of personal interests was well received by most seminar attendees. For example, out of the 392 participants in human resource management seminars utilizing psychological components, 225 (57.4%) chose "agree," and 50 (12.8%) chose "strongly agree." Moreover, by choosing the option "disagree," 42 respondents (or 10.7% of the sample) said that their education did not take into account their own interests, while four respondents (or 1% of the sample) chose the option "strongly disagree." Finally, 71 people (18.1%) remained neutral and declined to express their opinions in a positive or negative way (Table 16).

Table 16: Answers to the statement “*This training covered my personal interests*”

Personal interests		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	4	1,0	1,0	1,0
	Disagree	42	10,7	10,7	11,7
	Neutral opinion	71	18,1	18,1	29,8
	Agree	225	57,4	57,4	87,2
	Strongly Agree	50	12,8	12,8	100,0
	Total	392	100,0	100,0	

Furthermore, all respondents who claimed to have completed training programs in human resource management were asked to rate their agreement or disagreement with a series of questions about how the newly acquired knowledge had helped them do their jobs.

The statement "This training helped me gain knowledge to understand the psychological factors that affect the efficiency of my subordinates" was identified by 258 individuals (or 65.8% of the sample), with 211 people (or 53.8% of the sample) choosing "agree" and 47 people (or 12% of the sample) selecting "strongly agree." Ninety-nine people (23%) expressed a neutral opinion, while 44 people (percentage

11.2%) had the opposite opinion and selected the statements "strongly disagree" (selected by 37 people, or 9.4% of the sample) and "disagree" (selected by seven people, or 1.8% of the sample), (Table 17).

Table 17: Answers to the statement “*This training helped me gain knowledge to understand the psychological factors that affect the efficiency of my subordinates*”

Efficiency of subordinates		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	7	1,8	1,8	1,8
	Disagree	37	9,4	9,4	11,2
	Neutral opinion	90	23,0	23,0	34,2
	Agree	211	53,8	53,8	88,0
	Strongly Agree	47	12,0	12,0	100,0
	Total	392	100,0	100,0	

In response to the statement, "This training helped me to improve my management and social skills," 246 respondents (62.8%) selected "agree," while 58 respondents (14.8%) selected "I agree very much."

Stated otherwise, a majority of the participants (304 individuals, or 77.6% of the total) believe that the seminars have improved their ability to execute their jobs.

Conversely, twenty individuals (5.1% rate) express themselves negatively, with fifteen individuals (3.8% rate) selecting the "disagree" statement and five individuals (1.3% rate) selecting the "strongly disagree" statement. Lastly, 68 individuals (17.3% of the total) selected the option "neutral opinion" in order to express no opinion at all (Table 18).

Table 18: Answers to the statement “*This training helped me improve my managements and social skills*”

Improving skills		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	5	1,3	1,3	1,3
	Disagree	15	3,8	3,8	5,1
	Neutral opinion	68	17,3	17,3	22,4
	Agree	246	62,8	62,8	85,2
	Strongly Agree	58	14,8	14,8	100,0
	Total	392	100,0	100,0	

6.3. Application of psychological factors

There are two types of questions in this section. The first, which consists of five sub questions and statements, looks into how individuals who attended training seminars used the knowledge they learned in their day-to-day work while carrying out their responsibilities. The second segment looks into the various psychological aspects that managers and supervisors use to carry out their jobs. It consists of 13 sub-questions and statements. Only the 392 seminar participants provided responses, considering that the first category deals with applying the knowledge acquired from the educational sessions.

However, in the subsequent category, all 520 participants provided their responses, irrespective of their seminar attendance. This is because research indicates that managers and supervisors who are charismatic leaders or self-taught also employ psychological factors in their human resource management (Weber, 1968).

128 participants (16.3% rate) selected the "strongly agree" option in response to the first statement in the first category, which asked if the knowledge gained in the seminars is applied to psychological factors that can increase the efficiency of the subordinates. 231 participants (58.9% rate) selected the "agree" option. This suggests that most participants gave yes answers. Only twenty-one respondents (5.3%) chose

"strongly disagree" (four/1%), 17/4.3%) and "disagree" (21/4%), while neutrality was selected by 76 respondents (19, 4%) (Table 19).

Table 19: Answers to the statement “*I use the knowledge and skills I received from this training to apply psychological factors to improve the performance of my subordinates*”

Increase efficiency		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	4	1,0	1,0	1,0
	Disagree	17	4,3	4,3	5,4
	Neutral opinion	76	19,4	19,4	24,7
	Agree	231	58,9	58,9	83,7
	Strongly Agree	64	16,3	16,3	100,0
	Total	392	100,0	100,0	

The statement regarding the application of knowledge with the ultimate goal of encouraging employees also received a high percentage of positive responses. In particular, 285 (72.7%) of the 392 participants selected the "agree" (219 people/55.9%) and "strongly agree" (66 people/16.8%) statements. Figure 10 shows that 81 people selected the phrase "neutral opinion," while only 26 people (percentage 6.6%) voiced an opposing opinion by selecting the statements "disagree" (22 persons/percentage 5.6%) and "strongly disagree" (four persons/percentage 1%).

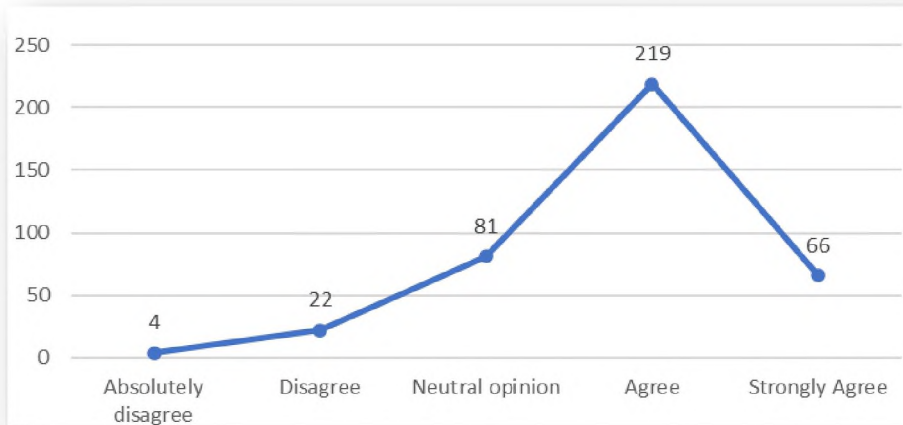


Figure 10: Answers to the statement “*This training helped me to motivate my subordinates.*”

The statement of applying the new knowledge to sustain employees' dedication to their work also received positive feedback, with 187 respondents (47.7%) selecting "agree" and 34 respondents (6.7%) selecting "strongly agree." On the other hand, at high levels, 130 individuals (33.2%) selected the term "neutral opinion," whereas 41 people (percentage 10.5) selected the statements "disagree" (34 people/rate 8.7%) and "strongly disagree" (seven people/rate 1.8%), (Table 20).

Table 20: Answers to the statement “*This training helped me keep my subordinates engaged in their work*”

Employee loyalty		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	7	1,8	1,8	1,8
	Disagree	34	8,7	8,7	10,5
	Neutral opinion	130	33,2	33,2	43,6
	Agree	187	47,7	47,7	91,3
	Strongly Agree	34	8,7	8,7	100,0
	Total	392	100,0	100,0	

Surprisingly, the majority of participants (total percentage 47%) disagreed with the statement "*This training did not help me improve the efficiency of my subordinates*". This suggests that the knowledge acquired from the seminars does, in fact, contribute to increasing efficiency. That being said, the percentage of participants who expressed "neutral opinion" is extremely high—nearly one-third.

More specifically, out of the 392 attendees at the seminars, 128 (or 32.7%) selected "disagree," and 56 (or 14.3%) selected "totally disagree," with the remark, "This training did not help me improve the efficiency of my subordinates." According to Table 21, 94 respondents (or 24%) selected the statement "agree," 14 respondents (or 3.6%) selected the statement "strongly agree," and one hundred (100) respondents (or 25.5%) selected the statement "neutral opinion."

Table 21: Answers to the statement "*This training did not help me improve the efficiency of my subordinates*"

No increase in efficiency		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	56	14,3	14,3	14,3
	Disagree	128	32,7	32,7	46,9
	Neutral opinion	100	25,5	25,5	72,4
	Agree	94	24,0	24,0	96,4
	Strongly Agree	14	3,6	3,6	100,0
	Total	392	100,0	100,0	

The majority of participants gave positive feedback to the statement, "This training helped me to apply practical approaches that improve the efficiency of my subordinates." In total, 268 people (68.4%) indicated that they agreed (223 people, or 56.9% of the sample) or strongly agreed (45 people, or 11.5% of the sample), indicating that learning about the application of psychological factors in human resource management can greatly increase employee efficiency. Additionally, 93 respondents (or 23.7% of the sample) selected neutrality, 27 respondents (or 6.9% of the sample)

disagreed, and 4 respondents (or 1% of the sample) said they disagreed completely with the statement (Figure 11).

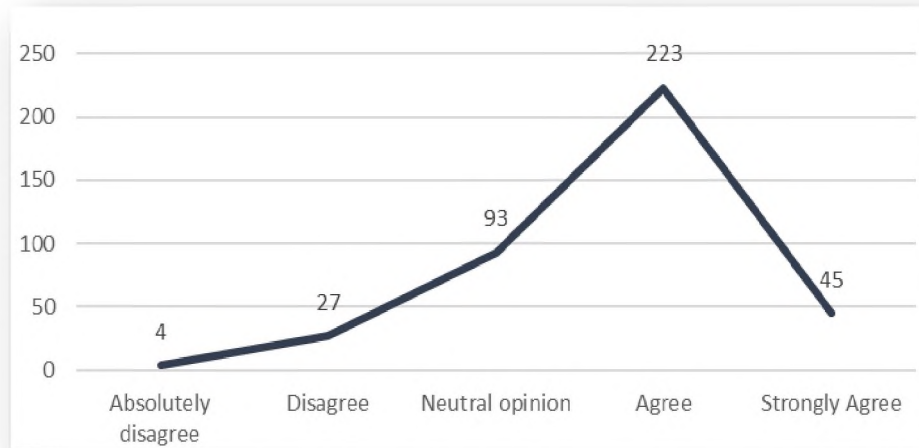


Figure 11: New knowledge helped implement different practices that improve employee efficiency

The following statements concern the psychological factors used by Managers and Supervisors in order to enhance the efficiency of service employees and - as mentioned above - were answered by all the participants (520) people. This category includes 13 questions/statements.

The majority of participants seem to agree with the statement “*My subordinates' performance increases with monetary rewards*” as a total of 251 people (48.2% rate) agree (192 people/ percentage 36.9% rate) or strongly agree (59 people/percentage 11.3%).

On the contrary, 160 people (percentage 30.7) express a different opinion choosing the statements 'disagree' (98 people/percentage 18.8%) and 'strongly disagree' (62 people/percentage 11.9%), while 98 people (percentage of 21%) express a 'neutral opinion' (Table 22).

Table 22: Answers to the statement “*The efficiency of my subordinates increases with monetary rewards*”

Cash reward		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	62	11,9	11,9	11,9
	Disagree	98	18,8	18,8	30,8
	Neutral opinion	109	21,0	21,0	51,7
	Agree	192	36,9	36,9	88,7
	Strongly Agree	59	11,3	11,3	100,0
	Total	520	100,0	100,0	

Furthermore, a sizable portion of participants—77.7% or 404—selected to disagree (196 people, or 37.7% of the sample) or strongly disagree (208 people, or 40% of the sample) with the statement "The efficiency of my subordinates is not affected by fair treatment." These responses indicate that the majority of participants believe that fair treatment has a significant impact on employee efficiency. Regarding the same statement, 27 individuals (5.2% rate) selected the option "strongly agree," whereas 55 people (10.6% rate) selected the option "agree." 34 (6.5%) of the 520 participants in all had a "neutral opinion" (Table 23).

Table 23: Answers to the statement “*The efficiency of my subordinates is not affected by fair treatment*”

Fair treatment		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	208	40,0	40,0	40,0
	Disagree	196	37,7	37,7	77,7
	Neutral opinion	34	6,5	6,5	84,2
	Agree	55	10,6	10,6	94,8
	Strongly Agree	27	5,2	5,2	100,0
	Total	520	100,0	100,0	

The majority of participants (477 people/percentage 91.7%) who were asked how moral reward and praise improve employee performance said that this specific psychological aspect (reward) is extremely effective.

To be more precise, 294 respondents (56.5% rate) say they agree with the statement, "My subordinates' efficiency increases when I praise their work," and 183 respondents (35.2% rate) say they strongly agree. Additionally, Table 24 shows that 33 respondents (6.3% rate) have a neutral opinion, nine (9) disagree (1.7% rate), and one (1) strongly disagree (0.2% rate).

Table 24: Answers to the statement “*The efficiency of my subordinates increases when I praise their work*”

Praise at work		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	1	0,2	0,2	0,2
	Disagree	9	1,7	1,7	1,9
	Neutral opinion	33	6,3	6,3	8,3
	Agree	294	56,5	56,5	64,8
	Strongly Agree	183	35,2	35,2	100,0
	Total	520	100,0	100,0	

Offering leave is another psychological component that, in the opinion of managers and supervisors, seems to be effective. As seen by the fact that 128 participants (24.6%) and 262 participants (50.4%) selected the sentence "strongly agree," the majority of participants share this opinion. Table 25 shows that 100 respondents (19.2%) express neutrality, 23 respondents (4.4%) disagree, and 7 respondents (1.3%) completely disagree.

Table 25: Answers to the statement “*My subordinates work better when they take some days off*”

Days off for employees		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	7	1,3	1,3	1,3
	Disagree	23	4,4	4,4	5,8
	Neutral opinion	100	19,2	19,2	25,0
	Agree	262	50,4	50,4	75,4
	Strongly Agree	128	24,6	24,6	100,0
	Total	520	100,0	100,0	

A significant portion of respondents disagree with the statement, "*The efficiency of my subordinates is not affected by additional benefits*," suggesting that additional benefits may also be a factor that positively affects employee productivity.

More specifically, 240 respondents (46.2% rate) selected "disagree," and 118 respondents (22.7% rate) selected "totally disagree." Of the 520 participants, 90 people (or 17.3%) indicated neutrality, 52 people (10%) agreed with the statement or question, and 20 people (or 3.8%) agreed totally (Table 26).

Table 26: Answers to the statement “*The efficiency of my subordinates is not affected by additional benefits*”

Additional benefits		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	118	22,7	22,7	22,7
	Disagree	240	46,2	46,2	68,8
	Neutral opinion	90	17,3	17,3	86,2
	Agree	52	10,0	10,0	96,2
	Strongly Agree	20	3,8	3,8	100,0
	Total	520	100,0	100,0	

The percentage of those who state that attending seminars improves the efficiency of employees is also high. Specifically, in response to the statement '*My subordinates are more efficient when they attend seminars related to the subject of their work*', 278 people (percentage 53.5%) state that they agree and 120 persons (percentage 23.1%) that they agree absolutely.

Also, 93 people (percentage 17.9%) express neither a positive nor a negative opinion, while 29 people (percentage 5.5%) declare 'disagree' (20 persons/percentage 3.8%) and 'totally disagree' (nine persons/percentage 1.7%) (Table 27).

Table 27: Answers to the statement “*My subordinates are more efficient when they attend seminars related to the subject of their work*”

Attending seminars		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	9	1,7	1,7	1,7
	Disagree	20	3,8	3,8	5,6
	Neutral opinion	93	17,9	17,9	23,5
	Agree	278	53,5	53,5	76,9
	Strongly Agree	120	23,1	23,1	100,0
	Total	520	100,0	100,0	

The fair evaluation of employees seems to be one of the factors that works positively in increasing efficiency as when answering the statement '*The efficiency of my subordinates increases due to their fair evaluation*' the majority of participants express themselves positively.

More specifically, out of the 520 Managers and Supervisors who completed the survey, 250 (or 48.1%) said they agreed with the statement above, and 196 (or 37.7%) said they agreed completely. Ten respondents, or 1.9% of the total, say they disagree, while just seven respondents, or 1.3% of the total, say they totally disagree. Lastly, Table 28 shows that 57 individuals, or 11% of the total, have a neutral viewpoint.

Table 28: Answers to the statement “*The efficiency of my subordinates is increased by their fair assessment*”

Fair evaluation	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Absolutely disagree	7	1,3	1,3	1,3
Disagree	10	1,9	1,9	3,3
Neutral opinion	57	11,0	11,0	14,2
Agree	250	48,1	48,1	62,3
Strongly Agree	196	37,7	37,7	100,0
Total	520	100,0	100,0	

High percentages of agreement also exist regarding the relationship between efficiency and working conditions. In response to the statement *'My subordinates are less efficient when working conditions worsen'* 246 (47.3% rate) stated 'agree' and 183 (35.2% rate) 'strongly agree'. 43 people are neutral (percentage 8.3%), 31 people disagree (percentage 6%) and 17 people completely disagree (percentage 3.3%) (Table 29).

Table 29: Answers to the statement “*My subordinates are less efficient when the working conditions deteriorate*”

Conditions worsen	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Absolutely disagree	17	3,3	3,3	3,3
Disagree	31	6,0	6,0	9,2
Neutral opinion	43	8,3	8,3	17,5
Agree	246	47,3	47,3	64,8
Strongly Agree	183	35,2	35,2	100,0
Total	520	100,0	100,0	

Out of the 520 managers and supervisors who took part in the survey, 355 (68.3%) disagreed with the statement, "*The efficiency of my subordinates is not affected by comments - suggestions (feedback) about their work.*" This suggests that managers and supervisors believe comments made in the context of feedback on efficiency have a significant impact on employees. Fifty-six respondents (or 10.8% of the sample) disagreed with the statement, and fifteen respondents (or 2.9% of the sample) strongly agreed. Of the participants, 94 individuals (18.1%) indicated a neutral opinion (Table 30).

Table 30: Answers to the statement "*The efficiency of my subordinates is not affected by comments - suggestions (feedback) about their work*"

Feedback		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	103	19,8	19,8	19,8
	Disagree	252	48,5	48,5	68,3
	Neutral opinion	94	18,1	18,1	86,3
	Agree	56	10,8	10,8	97,1
	Strongly Agree	15	2,9	2,9	100,0
	Total	520	100,0	100,0	

There were also positive responses to the psychological factor 'collaborative climate/good relations between colleagues' which, according to the participants, contributes to increasing employee efficiency.

A significant proportion (492 people/percentage 94.6%) of respondents to the statement "*My subordinates' work is more efficient when they create good relationships with each other as colleagues*" positively expressed themselves by stating that they "agree" (232 people/percentage 44.6%) and "strongly agree" (260 people/percentage 50%). Just three respondents (0.6%) stated they disagreed, while three more

respondents (0.6%) said they strongly disagreed. Lastly, 'neutral opinion' was selected by 22 individuals (4.2% rate) (Table 31).

Table 31: Answers to the statement “*The work of my subordinates is more efficient when they establish good relations with each other as colleagues*”

Colleague relations		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	3	0,6	0,6	0,6
	Disagree	3	0,6	0,6	1,2
	Neutral opinion	22	4,2	4,2	5,4
	Agree	232	44,6	44,6	50,0
	Strongly Agree	260	50,0	50,0	100,0
	Total	520	100,0	100,0	

The participants stated that another helpful psychological element that raises employee productivity is leaders that support their staff members in taking initiative.

In particular, when asked to rate their agreement or disagreement with the following statement: "*My subordinates' efficiency is not affected by encouraging them to take initiative.*" Out of those who responded, 362 people (69.6%) said they disagreed, with 237 (45.6%) choosing to disagree and 125 (24%) choosing to strongly disagree. 86 respondents, or 16.5% of the sample, selected the "neutral opinion," while 72 respondents, or 13.8% of the sample, selected "agree" (60 respondents, or 11.5% of the sample), and 12 respondents, or 2.3% of the sample, selected "strongly agree" (Table 32).

Table 32: Answers to the statement “*The efficiency of my subordinates is not affected by their encouragement to take initiatives*”

Taking initiatives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	125	24,0	24,0	24,0
	Disagree	237	45,6	45,6	69,6
	Neutral opinion	86	16,5	16,5	86,2
	Agree	60	11,5	11,5	97,7
	Strongly Agree	12	2,3	2,3	100,0
	Total	520	100,0	100,0	

As for the factor "rising in the service hierarchy," most survey respondents concur that it increases their subordinates' productivity.

A total of 383 people (73.6% rate) chose the affirmative responses "agree" and "strongly agree" when asked to rate their level of agreement or disagreement with the statement "*My subordinates' work is more efficient when they are given the opportunity to move up in the service hierarchy.*"

More specifically, 267 people (51.3%) selected the statement "agree," and 116 people (22.3%) selected the statement "strongly agree." Table 33 shows that 97 respondents (or 18.7% of the sample) stated that they had a "neutral opinion," 35 respondents (or 6.7% of the sample) disagreed, and 5 respondents (or 1% of the sample) severely disagreed.

Table 33: Answers to the statement “*The work of my subordinates is more efficient when they are given the opportunity to move up the agency hierarchy*”

Evolution in the hierarchy		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	5	1,0	1,0	1,0
	Disagree	35	6,7	6,7	7,7
	Neutral opinion	97	18,7	18,7	26,3
	Agree	267	51,3	51,3	77,7
	Strongly Agree	116	22,3	22,3	100,0
	Total	520	100,0	100,0	

The statement, "My subordinates are more efficient when I encourage them in their work," similarly had high levels of agreement, with 275 respondents (52.9%) selecting "agree" and 199 respondents (38.3%) selecting "strongly agree." Table 34 shows that 34 respondents (6.5% rate) reported having a "neutral opinion," six (6) reported disagreeing (1.2%), and six more reported strongly disagreeing (1.2%).

Table 34: Answers to the statement “*My subordinates are more efficient when I encourage them in their work.*”

Encouragement at work		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	6	1,2	1,2	1,2
	Disagree	6	1,2	1,2	2,3
	Neutral opinion	34	6,5	6,5	8,8
	Agree	275	52,9	52,9	61,7
	Strongly Agree	199	38,3	38,3	100,0
	Total	520	100,0	100,0	

6.4. Level of efficiency of subordinates

In order to determine the extent to which the use of psychological factors, in the exercise of human resource management, contributed or not to increase employee efficiency, participants were asked to indicate the degree of agreement or disagreement with eight specific questions/statements.

It is noted that both those who stated that they were trained and those who stated that they were not trained in the principles of work psychology responded to this category of statements.

The first statement concerned whether their employees are satisfied with their job. 204 respondents, or 39.2% of the sample, selected the option "neutral opinion," suggesting that many participants were unable to provide a definite yes or no response in this instance. Among the affirmative replies, 223 respondents (42.9% rate) selected "agree," while 33 respondents (6.3% rate) selected "strongly agree." In addition, three respondents (0.6%) and 57 individuals (11%) said that they "strongly disagreed" (Table 35).

Table 35: Answers to the statement “*My subordinates are happy with the objects of their work*”

Job satisfaction		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	3	0,6	0,6	0,6
	Disagree	57	11,0	11,0	11,5
	Neutral opinion	204	39,2	39,2	50,8
	Agree	223	42,9	42,9	93,7
	Strongly Agree	33	6,3	6,3	100,0
	Total	520	100,0	100,0	

Equally high percentages in the option 'neutral opinion' were recorded in the statement '*My subordinates do not feel committed to the goals that have been set*' after

the use of psychological factors in the exercise of human resource management. However, the majority (242 people/percentage 46.6%) expressed themselves negatively disagreeing with the statement.

In particular, 191 persons (36.7%) voice no view. Of those surveyed, 200 disagree (38.5%) with the aforementioned statement, and 42 disagree (8.1%) with it entirely. Conversely, 87 individuals (or 16.8% of the sample) agreed with the preceding statement, with 82 (or 15.8%) saying "I agree" and 5 (or 1% of the sample) saying "I completely agree" (Table 36).

Table 36: Answers to the statement “*My subordinates do not feel committed to the goals that have been set*”

Commitment to goals	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Absolutely disagree	42	8,1	8,1	8,1
Disagree	200	38,5	38,5	46,5
Neutral opinion	191	36,7	36,7	83,3
Agree	82	15,8	15,8	99,0
Strongly Agree	5	1,0	1,0	100,0
Total	520	100,0	100,0	

The majority of participants think that the effort made by the staff members they oversee to obtain better performance has improved when psychological aspects were used in the HRM exercise. Even still, there are a lot of people (152 individuals, or 29.2% of the total) who have a neutral attitude.

In particular, 270 respondents (51.9% rate) say they agree, 56 respondents (10.8% rate) say they strongly agree, 152 respondents (29.2% rate) say they have a "neutral opinion," 35 respondents (6.7%) say they disagree, and seven respondents (1.3%) say they strongly disagree with the statement "*My subordinates strive for the highest possible performance*" (Table 37).

Table 37: Answers to the statement “*My subordinates try for the highest possible performance*”

Performance		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	7	1,3	1,3	1,3
	Disagree	35	6,7	6,7	8,1
	Neutral opinion	152	29,2	29,2	37,3
	Agree	270	51,9	51,9	89,2
	Strongly Agree	56	10,8	10,8	100,0
	Total	520	100,0	100,0	

Data pertaining to the degree of agreement that sample members made with the statement "*My subordinates take initiatives*" are of interest. Of those, more than half (330 total, or 63.5%) say they agree (287 people, or 55.2%) or completely agree (43 people, or 8.3%), with the remaining half disagreeing.

In this statement, the option 'neutral opinion' gathers a high percentage (26.9%) as it was chosen by 140 people. Disagreement was expressed by a total of 50 people (percentage 9.7%) who stated 'disagree' (45 persons/percentage 8.7%) and 'strongly disagree' (five persons/percentage 1%) (Table 38).

Table 38: Answers to the statement “*My subordinates take initiatives*”

Taking initiatives		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	5	1,0	1,0	1,0
	Disagree	45	8,7	8,7	9,6
	Neutral opinion	140	26,9	26,9	36,5
	Agree	287	55,2	55,2	91,7
	Strongly Agree	43	8,3	8,3	100,0
	Total	520	100,0	100,0	

A high percentage of agreement was recorded for the statement *'My subordinates cooperate with their colleagues'* as 341 people (65.6% rate) said 'agree' and 93 people (17.9% rate) said 'strongly agree'. 68 people (percentage 13.1%) chose the statement 'neutral opinion', 15 persons (percentage 2.9%) declared 'disagree' and three persons (percentage 0.6%) declared 'strongly disagree' (Table 39).

Table 39: Answers to the statement “*My subordinates cooperate with their colleagues*”

Collaborative relationships		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	3	0,6	0,6	0,6
	Disagree	15	2,9	2,9	3,5
	Neutral opinion	68	13,1	13,1	16,5
	Agree	341	65,6	65,6	82,1
	Strongly Agree	93	17,9	17,9	100,0
	Total	520	100,0	100,0	

The use of psychological factors in the exercise of human resource management seems to be beneficial for citizens who deal with public services, as a total of 438 of the 520 participants agree with the statement *'My subordinates show an interest in the immediate service of citizens'* (total percentage 84.2%).

More specifically, 311 respondents (59.8%) selected "agree," and 127 respondents (24.4%) selected "strongly agree." Only 4.1% of the 21 respondents indicate that they disagree, with 15 respondents (2.9% rate) selecting "disagree" and 6 selecting "strongly disagree." Of the participants, 61 individuals (11.7%) indicated a neutral opinion (Table 40).

Table 40: Answers to the statement “*My subordinates show interest in the immediate service of the citizens*”

Citizen Service		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	6	1,2	1,2	1,2
	Disagree	15	2,9	2,9	4,0
	Neutral opinion	61	11,7	11,7	15,8
	Agree	311	59,8	59,8	75,6
	Strongly Agree	127	24,4	24,4	100,0
	Total	520	100,0	100,0	

Based on the results of the poll, respondents feel that their subordinates are more dedicated to their work after utilizing psychological aspects; 319 respondents (61.3%) selected the "agree" option, while 81 respondents (15.6%) selected the "strongly agree" option. Table 41 shows that of the total number of respondents, 100 people (or 19.2%) expressed a neutral opinion, 17 people (or 3.3%) disagreed, and 3 people (or 0.6%) totally disagreed.

Table 41: Answers to the statement “*My subordinates are dedicated to their assigned tasks*”

Dedication to duty		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Absolutely disagree	3	0,6	0,6	0,6
	Disagree	17	3,3	3,3	3,8
	Neutral opinion	100	19,2	19,2	23,1
	Agree	319	61,3	61,3	84,4
	Strongly Agree	81	15,6	15,6	100,0
	Total	520	100,0	100,0	

Ultimately, a sizable portion of participants (372 individuals/percentage 71.5%) estimate that they were able to nurture the intention to attend educational programs in the human resources they oversee after utilizing psychological components in management exercises.

More specifically, 280 participants (53.8%) selected "agree," and 92 individuals (17.7%) selected "strongly agree" in response to the question about how much they agreed or disagreed with the statement "My subordinates are willing to attend training programs."

However, a sizable portion of participants (110 individuals/percentage 21.2%) expressed uncertainty and selected the phrase "neutral opinion," but a total of 38 individuals (percentage 7.4%) selected the statements "disagree" (32 individuals/percentage 6.2%) and "totally disagree" (six individuals/percentage 1.2%) (Table 42).

Table 42: Answers to the statement “*My subordinates are willing to attend training programs*”

Educational programs	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Absolutely disagree	6	1,2	1,2	1,2
Disagree	32	6,2	6,2	7,3
Neutral opinion	110	21,2	21,2	28,5
Agree	280	53,8	53,8	82,3
Strongly Agree	92	17,7	17,7	100,0
Total	520	100,0	100,0	

6.5. Demographics of Directors and Supervisors who did not participate in training seminars

In light of the fact that one of the research questions examines whether "gender," "age," and "educational background" are related to the desire to learn through human resource management seminars, it was deemed appropriate to describe the characteristics of the 128 participants who stated they did not attend seminars (Table 10). Their demographics are listed individually as a result.

The 128 participants who reported not attending any seminars were asked to provide their justifications by selecting the most typical statement from a list of four that the researcher had developed (Figure 12).

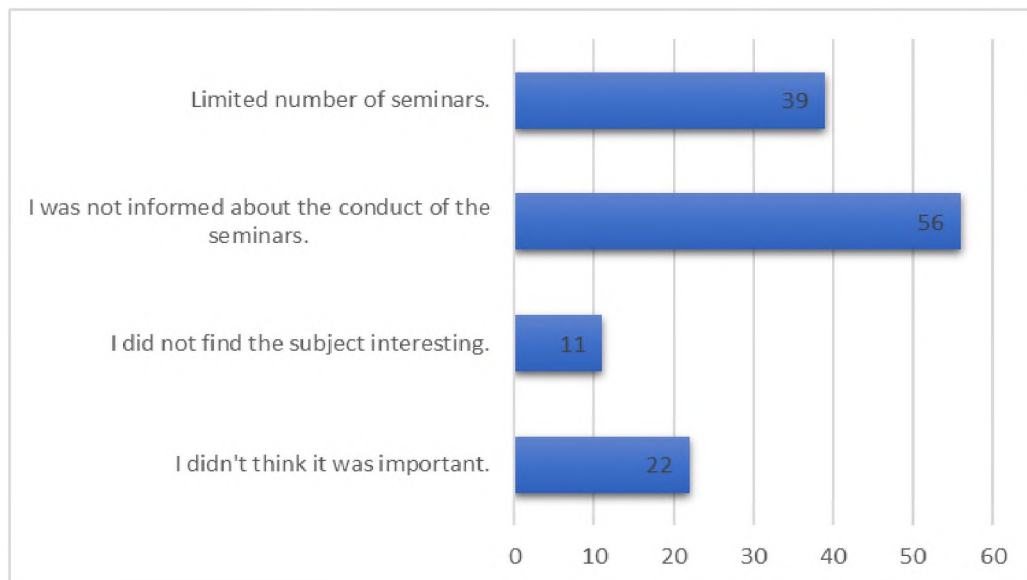


Figure 12: Reasons for not participating

From the answers of the participants, it seems that the main reason they did not attend any seminar (56 people / 43.8%) was because they had no relevant information. This is not the case for the remaining 72 who knew but chose not to participate for various reasons. According to their responses, 39 of the participants (30.5%) attributed their non-participation to the "limited number of seminars", 22 (17.2%) stated that they "did not consider it important" and 11 (8.6%) stated that "they did not find the topic of the seminars interesting.

Regarding gender, 82 (64.1%) are women and 46 are men (35.9%) (Table 43), Regarding age, 56 people (43.8%) belong to the age group 41-50 years, 55 persons (43%) to the group 51-60, 13 persons (percentage 10.2%) to the group 30-40 and four persons (percentage 3.1%) to the group over 60 years (Table 44).

Table 43: Gender of sample that did not participate in the seminars

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	46	35,9	35,9	35,9
	Female	82	64,1	64,1	100,0
	Total	128	100,0	100,0	

Table 44: Age of the sample that did not participate in the seminars

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30-40	13	10,2	10,2	10,2
	41-50	56	43,8	43,8	53,9
	51-60	55	43,0	43,0	96,9
	Over 60	4	3,1	3,1	100,0
	Total	128	100,0	100,0	

In terms of education, 60 individuals (or 46.9% of the total) have a university degree, 50 individuals (or 39.1%) have a master's degree, nine individuals (or 7% of the total) have a doctorate degree, and nine individuals (or 7% of the total) merely have a high school certificate (Table 45).

Table 45: What is the highest level of education I have received.

Educational background		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	9	7,0	7,0	7,0
	University	60	46,9	46,9	53,9
	Postgraduate	50	39,1	39,1	93,0
	PhD	9	7,0	7,0	100,0
	Total	128	100,0	100,0	

When asked how long it had been since they finished their studies, most respondents (60 persons, or 46.9% of the sample) said it had been at least 20 years.

Additionally, 25 respondents (19.5%) said that they had finished their studies within the last five years (5 years), 22 respondents (17.2%) said that they had finished their studies sixteen to twenty years prior, 13 respondents (10.2%) said that they had spent eleven to fifteen years prior, and eight respondents (6.3%) said that they had finished their studies six to ten years prior (Table 46).

Table 46: How many years ago I completed my education

Completion of studies		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5 years	25	19,5	19,5	19,5
	6-10 years	8	6,3	6,3	25,8
	11-15 years	13	10,2	10,2	35,9
	16-20 years	22	17,2	17,2	53,1
	Over 20 years	60	46,9	46,9	100,0
	Total	128	100,0	100,0	

When asked what role they play in the Greek public administration, 106 participants (or 82.8%) said they are supervisors, while 22 participants (or 17.2%) said they are managers (Table 47).

Table 47: What position I have in my service

Job position	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Supervisor	106	82,8	82,8	82,8
Manager	22	17,2	17,2	100,0
Total	128	100,0	100,0	

Regarding the length of time spent in this role, 107 respondents (83.6%) said they had held the position of Director or Supervisor for the previous ten years; sixteen respondents (12.5%) said they had worked in a particular position for the previous eleven to twenty years; three respondents (2.3%) said they had been in the current position for the previous twenty to thirty years; and two (2) respondents (1.6%) said they had held the position for the previous thirty to forty years (Table 48).

Table 48: How many years I have held this position

Years of service	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0 - 10 years	107	83,6	83,6	83,6
11 - 20 years	16	12,5	12,5	96,1
21 - 30 years	3	2,3	2,3	98,4
31 - 40 years	2	1,6	1,6	100,0
Total	128	100,0	100,0	

6.6. Managers and Supervisors who acquire knowledge about the use of psychological factors in the exercise of human resources management

The first goal was to ascertain what proportion of Greek State directors and managers attended training sessions on the application of psychological elements in human resource management.

The data provided by the participants indicates that a significant proportion of Directors and Supervisors (75.3% overall) have attended relevant seminars. Specifically, 59% (307 people) have attended seminars in the last five years, 9.6% (50 people) have attended seminars in the last ten years, and 6.7% (35 people) have attended seminars more than eleven years ago (Table 10).

6.7. The role of 'gender', 'age' and 'educational background' in the intention to acquire knowledge

The second goal was to ascertain the proportion of each factor—gender, age, and educational level—that influenced the desire to receive training on the subject of "use of psychological factors in human resource management."

To address this goal, SPSS was used to develop a new variable. More precisely, two categories—the "YES" category and the "NO" category—were formed by collapsing the responses provided to the first question on the number of seminars they had attended. Those who said "none" belong in the first category, and people who said they attended seminars regardless of the date they were held fall into the second (Table 49).

Table 49: Participation in seminars

Participation in seminars		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	128	24,6	24,6	24,6
	Yes	392	75,4	75,4	100,0
	Total	520	100,0	100,0	

Using Pearson's Chi-Square test of independence, the new variable was associated with the parameters "gender," "age," and "educational background." There were two theories produced for every factor. The null hypothesis asserts that there is no relationship between seminar attendance and gender, age, or educational background (independence), while the alternative hypothesis argues that participation in seminars is connected to gender, age, and educational background.

In reference to the gender component, the first analysis revealed that 334 of the 520 survey respondents were female and 186 were male. There were 82 women and 46 men among those who did not attend the seminars; in contrast, there were 252 women and 140 men among those who did (Figure 13).

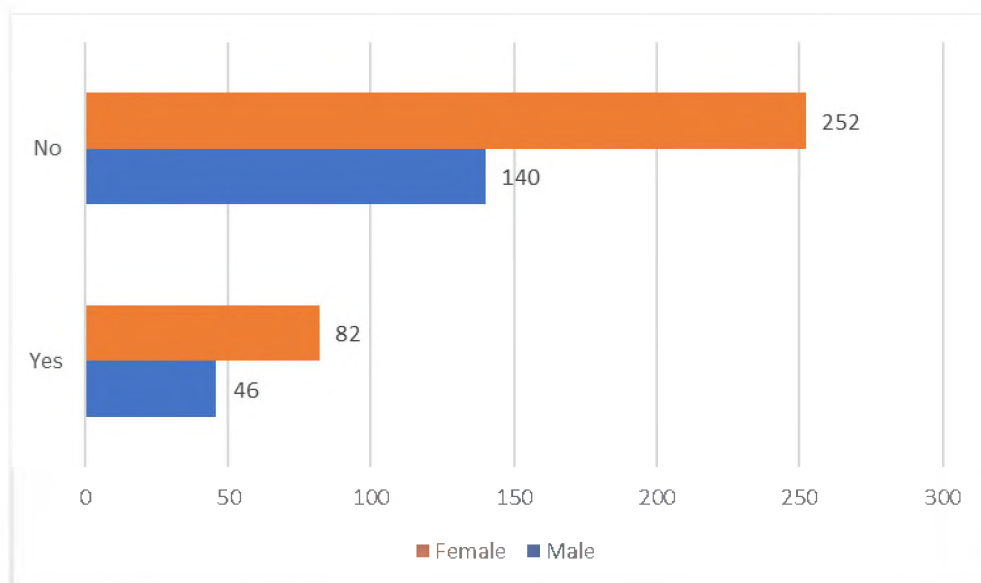


Figure 13: Contingency figure gender attendance

Based on the value given by the Pearson Chi-Square index with $p(0.964) > 0.05$, the null hypothesis is not rejected and attending a training seminar is not related to gender (Table 50).

Table 50: Chi-Squared Tests for the factor "gender"

Gender	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	0,002 ^a	1	0,964		
Continuity Correction ^b	0,000	1	1,000		
Likelihood Ratio	0,002	1	0,964		
Fisher's Exact Test				1,000	0,522
Linear-by-Linear Association	0,002	1	0,964		
N of Valid Cases	520				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 45,78

b. Computed only for a 2x2 table

About the factor "age," the findings revealed that out of the 392 people who replied "YES" to attending the seminars, 207 are between the ages of 51 and 60, 131 are between the ages of 41 and 50, 29 are over 60, and 25 are between the ages of 30 and 40. Comparably, out of the 128 people who did not attend seminars, 56 are in the 41–50 age range, 55 are in the 51–60 age range, 13 are in the 30–40 age range, and four are older than 60 (Figure 14).

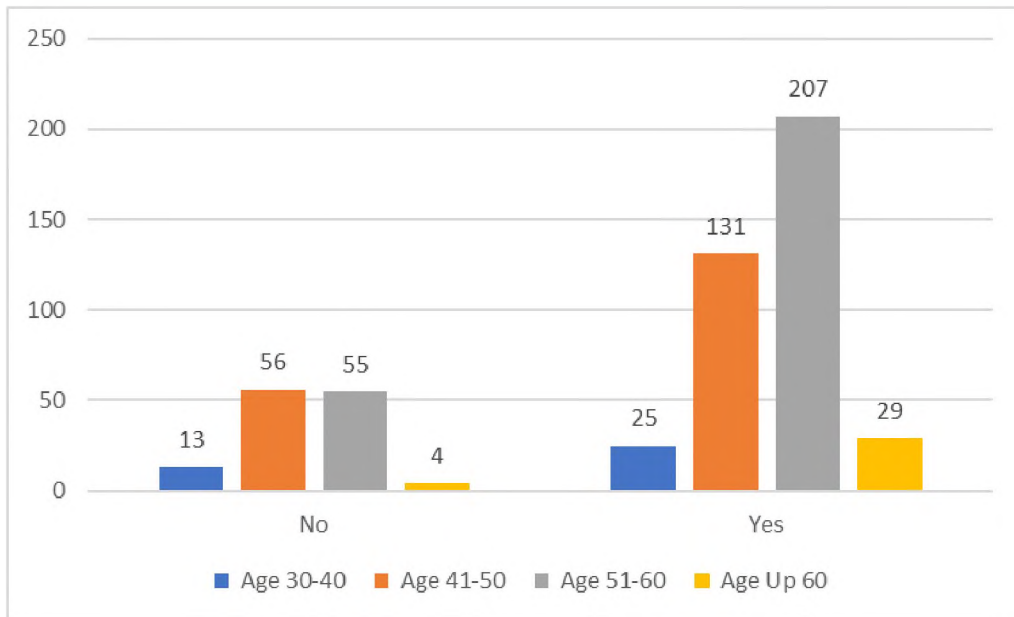


Figure 14: Contingency figure age-attendance

The alternative hypothesis in this instance suggests that attending training seminars is associated with age, while the null hypothesis suggests that attending training seminars is unrelated to age. The null hypothesis is rejected since the Pearson Chi-Squared test value of $p(0.025) < 0.05$ indicates a relationship between participant age and seminar attendance and participation (Table 51).

Table 51: Chi-Squared Tests for the factor 'age'

Age	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Squared	9,379 ^a	3	0,025
Likelihood Ratio	9,639	3	0,022
Linear-by-Linear Association	9,101	1	0,003
N of Valid Cases	520		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 8,12.

Regarding the "educational background" component, out of the 392 individuals who attended seminars, 213 possess a master's degree, 136 have a bachelor's degree from a university, 27 have a high school certificate, and 16 have a doctorate. Out of the 128 individuals who abstained from training seminars, 60 possess a bachelor's degree from their respective universities, 50 hold a master's degree, nine hold a doctorate, and nine more just possess a high school certificate (Figure 15).

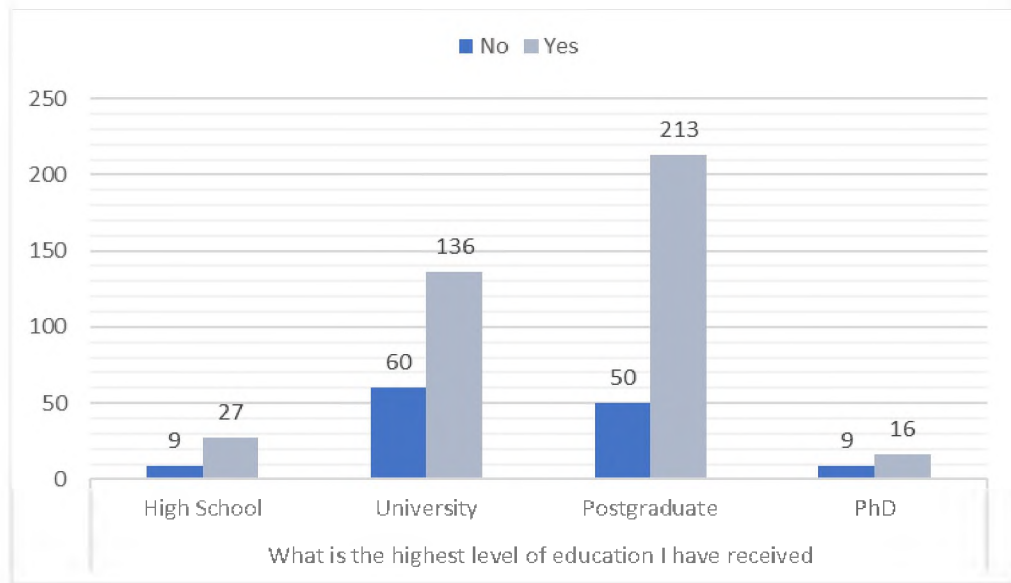


Figure 15: Contingency figure educational background-attendance

In this instance, the null hypothesis asserts that attendance at seminars is independent, while the alternative hypothesis claims that educational background is connected. The null hypothesis is rejected since there appears to be a relationship between the factor "educational background" and attendance in training seminars, as indicated by the Pearson Chi-Square index value with $p(0.019) < 0.05$ (Table 52).

Table 52: Chi-Square Tests for the factor "educational background"

Educational level	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,999 ^a	3	0,019
Likelihood Ratio	9,936	3	0,019
Linear-by-Linear Association	1,804	1	0,179
N of Valid Cases	520		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 6,15.

In summary, regarding the second objective of this paper, on the intention of training on the topic "use of psychological factors in human resource management", it is not equally distributed according to educational background and age, but it is independent with gender.

6.8. Percentage of trainee managers and supervisors who use psychological factors in their HR management training

Finding out what proportion of managers and supervisors integrated work psychology concepts into human resource management following training was the third goal. In the penultimate section of the questionnaire, all responses provided by the 392 attendees of the seminars on directors and supervisors were correlated for verification purposes.

Regarding monetary rewards, the majority of supervisors, who constitute the majority of the sample (266 people), seem to make use of this factor, as positive statements ("agree" and "strongly agree") gather 47.3% (106 people).

The percentage of Directors is also quite high, but lower than that of Supervisors, as 41.3% (52 people) of the 126 who participated in the survey expressed positive

statements. Out of the total (Directors and Supervisors) there is a significant percentage of 45.4% (178 people) who express themselves positively.

However, it cannot be overlooked that a respectable percentage 20.3% (54 persons) of Supervisors and 23.8% (30 persons) of Managers are unable to express either a positive or negative statement (Table 53).

It is important to remember, though, that this might have something to do with the fact that the public system does not always offer monetary rewards.

Table 53: Crosstabulation for profitability and monetary rewards

Financial reward		Statement: The efficiency of my subordinates is increased by monetary rewards					Total	
		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree		
Workplace	Supervisor	27	59	54	98	28	266	
		10,2%	22,2%	20,3%	36,8%	10,5%	100,0%	
	Director	20	24	30	38	14	126	
		15,9%	19,0%	23,8%	30,2%	11,1%	100,0%	
	Total		47	83	84	136	42	392
			12,0%	21,2%	21,4%	34,7%	10,7%	100,0%

Fair treatment is another psychological factor that seems to be widely used, as 74.8% of Supervisors (199 persons) and 75.4% (95 persons) of Managers, state their disagreement to the statement "*The performance of my subordinates is not affected by fair treatment*" (Table 54).

Table 54: Crosstabulation for efficiency and fair treatment

Fair treatment		Statement: The performance of my subordinates is not affected by fair treatment					Total
	Answers	I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	100	99	20	30	17	266
		37,6%	37,2%	7,5%	11,3%	6,4%	100,0%
	Director	48	47	8	16	7	126
		38,1%	37,3%	6,3%	12,7%	5,6%	100,0%
Total		148	146	28	46	24	392
		37,8%	37,2%	7,1%	11,7%	6,1%	100,0%

Also praise at work seems to be a psychological tool widely used by heads of services as positive responses ("I agree" and "strongly agree") to the statement "*My subordinates' efficiency increases when I praise their work*" were recorded by 92.1% (245 persons) of the Supervisors and 91.3% (115 persons) of the Managers (Table 55).

Table 55: Crosstabulation for efficiency and praise

Praise		Statement: The efficiency of my subordinates increases when I praise their work					Total
	Answers	I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	1	5	15	161	84	266
		0,4%	1,9%	5,6%	60,5%	31,6%	100,0%
	Director	0	2	9	69	46	126
		0,0%	1,6%	7,1%	54,8%	36,5%	100,0%
Total		1	7	24	230	130	392
		0,3%	1,8%	6,1%	58,7%	33,2%	100,0%

High percentages are also recorded in the relation of efficiency with the provision of leave, as positive responses are recorded by 77.1% (205 persons) of the Supervisors and 68.2% (86 persons) of the Managers (Table 56).

Table 56: Crosstabulation for efficiency and days of leave

Days of leave		Statement: My subordinates work better when they take some days off					Total
	Answers	I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	4	7	50	137	68	266
		1,5%	2,6%	18,8%	51,5%	25,6%	100,0%
	Director	0	10	30	61	25	126
		0,0%	7,9%	23,8%	48,4%	19,8%	100,0%
	Total		4	17	80	198	93
		1,0%	4,3%	20,4%	50,5%	23,7%	100,0%

Leaders also use fringe benefits as a means of improving worker performance. The proportion of 266 supervisors who responded to the survey that chose "strongly disagree" or "disagree" in response to the statement "*The efficiency of my subordinates is not affected by fringe benefits*" appears to be high (69.9%/186 persons), indicating the significance of this factor. 62.7% (79 individuals) of the Directors voice similar disagreements (using the "strongly disagree" and "disagree" options) (Table 57).

Table 57: Crosstabulation for profitability and fringe benefits

Additional benefits		Statement: The performance of my subordinates is not affected by fringe benefits					Total
	Answers	I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	66	120	43	25	12	266
		24,8%	45,1%	16,2%	9,4%	4,5%	100,0%
	Director	25	54	27	16	4	126
		19,8%	42,9%	21,4%	12,7%	3,2%	100,0%
Total		91	174	70	41	16	392
		23,2%	44,4%	17,9%	10,5%	4,1%	100,0%

Regarding the correlation between efficiency and seminar attendance, high levels of agreement are also noted (based on the selection of "agree" and "strongly agree" statements). The use of this factor was supported by 76.9% (97 people) of Managers and 77.8% (207 people) of Supervisors (Table 58).

Table 58: Crosstabulation for efficiency and seminar attendance

Attendance of seminars		Statement: My subordinates are more efficient when they attend seminars related to their job					Total
	Answers	I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	4	8	47	144	63	266
		1,5%	3,0%	17,7%	54,1%	23,7%	100,0%
	Director	0	6	23	72	25	126
		0,0%	4,8%	18,3%	57,1%	19,8%	100,0%
Total		4	14	70	216	88	392
		1,0%	3,6%	17,9%	55,1%	22,4%	100,0%

The majority of participants who indicate that they "agree" or "strongly agree" with the statement "The efficiency of my subordinates is increased by fair appraisal" acknowledge the role that fair appraisal plays in boosting efficiency.

To be more specific, Table 59 shows that a considerably higher number of managers (80.1%; 101 people) and supervisors (89.5%; 238 people) acknowledge the substantial impact that fair treatment has on worker performance.

Table 59: Crosstabulation for efficiency and fair evaluation

Fair evaluation		Statement: The efficiency of my subordinates is increased by their fair appraisal					Total	
Answers		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree		
Workplace	Supervisor	2	3	23	135	103	266	
		0,8%	1,1%	8,6%	50,8%	38,7%	100,0%	
	Director	3	4	18	58	43	126	
		2,4%	3,2%	14,3%	46,0%	34,1%	100,0%	
	Total		5	7	41	193	146	392
			1,3%	1,8%	10,5%	49,2%	37,2%	100,0%

Good working climate is a key parameter in employee performance as 84.5% (225 people) of Supervisors and 83.3% (105 people) of Managers stated "I agree" or "I agree a lot" (Table 60).

Table 60: Crosstabulation for efficiency and work climate

Working conditions		Statement: My subordinates are less efficient when working conditions get worse					Total
Answers		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	8	12	21	131	94	266
		3,0%	4,5%	7,9%	49,2%	35,3%	100,0%
	Director	3	7	11	64	41	126
		2,4%	5,6%	8,7%	50,8%	32,5%	100,0%
		Total	11	19	32	195	135
			2,8%	4,8%	8,2%	49,7%	34,4%

In the statement "*The efficiency of my subordinates is not affected by comments - suggestions (feedback) about their work,*" 64.7% (172 persons) of the Heads and 70.6% (89 persons) of the Directors expressed "disagree" or "strongly disagree," while 19.4% (76 people) of both groups of leaders expressed no opinion, maintaining a neutral stance (Table 61).

It appears that both the Managers and Supervisors of the services that participated in the study disagree with the idea that the factor "feedback" does not affect the efficiency of employees.

Table 61: Crosstabulation for efficiency and feedback

Feedback		Statement: The efficiency of my subordinates is not affected by comments - suggestions (feedback) about their work					Total
Answers		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	50	122	56	30	8	266
		18,8%	45,9%	21,1%	11,3%	3,0%	100,0%
	Director	25	64	20	15	2	126
		19,8%	50,8%	15,9%	11,9%	1,6%	100,0%
	Total		75	186	76	45	10
		19,1%	47,4%	19,4%	11,5%	2,6%	100,0%

Furthermore, positive responses ("agree" and "strongly agree") are recorded by 95.1% (253 persons) of Supervisors and 96.8% (122 persons) of Managers, suggesting that Managers and Supervisors seem to take into consideration the factor "good collegial relations" as it has a positive impact on employee performance and is widely used (Table 62).

Table 62: Crosstabulation for efficiency and collegiality

Collegial relationships		Statement: My subordinates' work is more efficient when they create good relations with each other as colleagues					Total	
		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree		
Workplace	Supervisor	1	1	11	124	129	266	
		0,4%	0,4%	4,1%	46,6%	48,5%	100,0%	
	Director	0	0	4	62	60	126	
		0,0%	0,0%	3,2%	49,2%	47,6%	100,0%	
	Total		1	1	15	186	189	392
			0,3%	0,3%	3,8%	47,4%	48,2%	100,0%

Giving workers the chance to take the initiative is another element that appears to be utilized frequently because it is seen to be highly effective in inspiring workers to become more productive.

The majority of managers and supervisors who selected the responses "strongly disagree" and "disagree" to the statement "My subordinates' efficiency is not affected by encouraging them to take initiatives" acknowledge the need for applying this aspect.

In particular, 66.7% (84 people) of the Directors and 69.9% (186 people) of the Supervisors disapprove or just disagree with the aforementioned statement (Table 63).

Table 63: Crosstabulation for efficiency and initiative

Taking initiatives		Statement: the efficiency of my subordinates is not affected by encouraging them to take initiatives					Total
Answers		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	66	120	39	34	7	266
		24,8%	45,1%	14,7%	12,8%	2,6%	100,0%
	Director	29	55	23	14	5	126
		23,0%	43,7%	18,3%	11,1%	4,0%	100,0%
Total		95	175	62	48	12	392
		24,2%	44,6%	15,8%	12,2%	3,1%	100,0%

Possibilities for moving up the service hierarchy are a psychological component that is frequently used in the management of human resources in services and organizations as a whole because they provide favourable effects on employee performance. In table 64, it is indicated that 74.5% (198 individuals) of the Supervisors and 80.9% (102 individuals) of the Managers concur.

Table 64: Crosstabulation for efficiency and promotion in the hierarchy of the service

Rise in the hierarchy		Statement: My subordinates' work is more efficient when they are given the opportunity to move up the hierarchy of the service					Total
		Answers	I totally disagree	Disagree	Neutral opinion	Agree	
Workplace	Supervisor	3	13	52	135	63	266
		1,1%	4,9%	19,5%	50,8%	23,7%	100,0%
	Director	1	9	14	76	26	126
		0,8%	7,1%	11,1%	60,3%	20,6%	100,0%
	Total	4	22	66	211	89	392
		1,0%	5,6%	16,8%	53,8%	22,7%	100,0%

The favorable replies ("agree" and "strongly agree") correspond to 92.5% (246 persons) of the Supervisors and 91.7% (113 persons) of the Managers, suggesting that the factor "encouragement at work" is applied widely (Table 65).

In summary, the utilization of psychological agents was found to be high, indicating that the third purpose was accomplished. It appears that most participants acknowledge the advantages of psychological agents and make extensive use of them.

Table 65: Crosstabulation for efficiency and encouragement in the workplace

Encouragement		Statement: my subordinates are more efficient when I encourage them in their work.					Total
Answers		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Supervisor	4	1	15	142	104	266
		1,5%	0,4%	5,6%	53,4%	39,1%	100,0%
	Director	0	3	10	68	45	126
		0,0%	2,4%	7,9%	54,0%	35,7%	100,0%
	Total						
4		4	25	210	149	392	
		1,0%	1,0%	6,4%	53,6%	38,0%	100,0%

Based on the overall positive response rates from the participating Managers and Heads of Services, the managers prioritized the following psychological variables in the HRM:

1. Good collegial relations (95.6% positive response rate)
2. Praise at work (positive response rate 91.9%)
3. Encouragement to work (positive response rate 91.6%)
4. Fair evaluation (positive response rate 86.4%)
5. Good working conditions (84.1% positive response rate)
6. Motivation to attend seminars on the subject of the job (77.5% positive response rate)
7. Opportunities to progress in the hierarchy of the service (positive response rate 76.5%)
8. Fair treatment (75% positive response rate)
9. Days of leave (positive response rate 74.2%)
10. Motivation to take initiatives (68.8% positive response rate)
11. Additional benefits (67.6% positive response rate)
12. Financial reward (positive response rate 45.4%)

6.9. The role of 'gender', 'age' and 'educational level' in the application of new knowledge

The fourth objective was to determine the influence of the factors "gender", "age" and educational background" on the application of the new knowledge gained on the topic "use of psychological factors in human resource management".

To address this purpose, a new variable was developed in SPSS using replies from people who participated in training programs to the statement "My subordinates strive for the highest possible performance." This phrase was chosen because it demonstrates the effective application of newly acquired knowledge. After all, the ultimate purpose of integrating psychological elements in human resource management is to improve performance, which aids in increasing employee efficiency.

Gender, age, and educational background were all connected with the new variable. As a result, two hypotheses were developed for each of the components. The alternative hypothesis claims that seminar participation is connected to gender, age, and educational background, whereas the null hypothesis states that seminar attendance is independent of gender, age, and educational background.

Regarding the factor "gender," it appears that a respectable percentage (55.7%/78 persons) of male Managers and Supervisors state "agree" and "strongly agree," while the percentage of agreement on both statements is significantly higher among women (66.7%/168 persons) based on the responses of the 392 Managers and Supervisors who participated in the seminars. The choice of the "neutral opinion" statement, which receives a total of 29.6% (116 persons), is grounds for concern (Table 66).

Table 66: Crosstabulation for the factor "gender"

Gender		Statement: My subordinates try for the highest possible performance.					Total
		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Male	0	15	47	65	13	140
		0,0%	10,7%	33,6%	46,4%	9,3%	100,0%
	Female	4	11	69	141	27	252
		1,6%	4,4%	27,4%	56,0%	10,7%	100,0%
	Total		4	26	116	206	40
		1,0%	6,6%	29,6%	52,6%	10,2%	100,0%

Taking into account the Fisher's Exact Test value of $p(0.034) < 0.05$, the data do not appear to be evenly distributed by "gender," and hence the null hypothesis is rejected (Table 67).

Table 67: Chi-Square Tests for the factor "gender"

Gender				Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				99% Confidence Interval			99% Confidence Interval		
Indicators	Value	df	Asymp. Sig. (2-sided)	Sig.	Lower Bound	Upper Bound	Sig.	Lower Bound	Upper Bound
Pearson Chi-Square	10,591 ^a	4	0,032	0,029 ^b	0,025	0,034			
Likelihood Ratio	11,628	4	0,020	0,025 ^b	0,021	0,029			
Fisher's Exact Test	9,919			0,034 ^b	0,030	0,039			
Linear-by-Linear Association	3,461 ^c	1	0,063	0,073 ^b	0,066	0,079	0,040 ^b	0,035	0,045
N of Valid Cases	392								

a. 2 cells (20,0%) have expected count less than 5. The minimum expected count is 1,43.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is 1,860.

A comparison of the age factor with the variable designed to test hypotheses shows that the 51-60 age group (56.5%/117 people) had the most positive views of the statement "My subordinates strive for the highest possible performance" (Table 68).

Table 68: Crosstabulation for the factor «age»

Age		Statement: My subordinates strive for the highest possible performance					Total
Team		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
30-40	Frequency	1	3	9	9	3	25
	Percent	4,0%	12,0%	36,0%	36,0%	12,0%	100,0%
41-50	Frequency	2	11	35	68	15	131
	Percent	1,5%	8,4%	26,7%	51,9%	11,5%	100,0%
51-60	Frequency	1	12	59	117	18	207
	Percent	0,5%	5,8%	28,5%	56,5%	8,7%	100,0%
Up 60	Frequency	0	0	13	12	4	29
	Percent	0,0%	0,0%	44,8%	41,4%	13,8%	100,0%
Total	Frequency	4	26	116	206	40	392
	Percent	1,0%	6,6%	29,6%	52,6%	10,2%	100,0%

Nonetheless, the null hypothesis is not rejected because the Fisher's Exact Test value with $p(0.205) > 0.05$ shows that the application of new knowledge is independent of age (Table 69).

Table 69: Chi-Square Tests for «age»

Age				Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				99% Confidence Interval			99% Confidence Interval		
Indicators	Value	df	Asymp. Sig. (2-sided)	Sig.	Lower Bound	Upper Bound	Sig.	Lower Bound	Upper Bound
Pearson Chi-Square	14,028 ^a	12	0,299	0,281 ^b	0,270	0,293			
Likelihood Ratio	15,020	12	0,240	0,279 ^b	0,267	0,290			
Fisher's Exact Test	14,572			0,205 ^b	0,194	0,215			
Linear-by-Linear Association	1,712 ^c	1	0,191	0,198 ^b	0,187	0,208	0,103 ^b	0,095	0,111
N of Valid Cases	392								

a. 8 cells (40,0%) have expected count less than 5. The minimum expected count is 0,26.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is 1,308.

Finally, with the exception of individuals with a PhD, all levels of agreement on the factor "educational level" are high. Only 37.5% of respondents (six persons) agreed with the statement "My subordinates strive for the highest possible performance." High school graduates, on the other hand, receive the most positive responses, with 63% (17 people) selecting the sentence "I agree" and 11.1% (three people) selecting "I agree a lot."

This statement likewise received a significant number of indifferent responses, with PhD holders receiving the greatest percentage (75%/12 persons) (Table 70).

Table 70: Crosstabulation for the factor 'educational level'

Educational background		Statement: My subordinates strive for the highest possible performance					Total
		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
High School	Frequency	1	1	5	17	3	27
	Percent	3,7%	3,7%	18,5%	63,0%	11,1%	100,0%
University	Frequency	0	5	42	71	18	136
	Percent	0,0%	3,7%	30,9%	52,2%	13,2%	100,0%
Postgraduate	Frequency	2	17	63	112	19	213
	Percent	0,9%	8,0%	29,6%	52,6%	8,9%	100,0%
PhD	Frequency	1	3	6	6	0	16
	Percent	6,3%	18,8%	37,5%	37,5%	0,0%	100,0%
Total	Frequency	4	26	116	206	40	392
	Percent	1,0%	6,6%	29,6%	52,6%	10,2%	100,0%

Despite the disparities seen, the Fisher's Exact Test with $p(0.066b) > 0.05$ suggests that there is no association between education level and application of new knowledge acquired through seminar attendance, and thus the null hypothesis is not rejected (Table 71).

Table 71: Chi-Square Tests for the factor "educational level"

Educational background				Monte Carlo Sig. (2-sided)			Monte Carlo Sig. (1-sided)		
				99% Confidence Interval			99% Confidence Interval		
Indicators	Value	df	Asymp. Sig. (2-sided)	Sig.	Lower Bound	Upper Bound	Sig.	Lower Bound	Upper Bound
Pearson Chi-Square	19,869 ^a	12	0,070	0,075 ^b	0,068	0,082			
Likelihood Ratio	19,070	12	0,087	0,096 ^b	0,089	0,104			
Fisher's Exact Test	18,282			0,066 ^b	0,060	0,073			
Linear-by-Linear Association	7,386 ^c	1	0,007	0,007 ^b	0,004	0,009	0,003 ^b	0,002	0,005
N of Valid Cases	392								

a. 9 cells (45,0%) have expected count less than 5. The minimum expected count is 0,16.

b. Based on 10000 sampled tables with starting seed 2000000.

c. The standardized statistic is -2,718.

In conclusion, research appears that the application of knowledge acquired by Managers and Supervisors who participated in training programs on the use of psychological aspects in human resource management is not connected to age or educational level. However, it is not distributed evenly based on the factor "gender."

6.10. Efficacy of services led by trained managers and supervisors in HRM

The final purpose was to measure the proportion of efficacy of services led by trained managers and supervisors who apply human resource management principles using psychological elements.

Based on the data gathered from the responses provided to the three questions that made up the last section of the questionnaire, inferential statistics were employed to test this goal. The questions that best reflected the impact of implementing the work psychology principles that managers were taught in on the organization were chosen.

The statement questions that assessed an employee's performance, commitment to work goals, and level of job satisfaction were chosen as the most representative.

Managers (46.9%/59 people) and Supervisors (50%/133 people) selected the options "agree" and "strongly agree," indicating that they are both satisfied with their jobs. Nonetheless, a sizable fraction, representing 39% (153 individuals) of all participants, express a "neutral opinion" (Table 72).

Table 72: Crosstabulation for the job object

Subject of work		Question: are my subordinates happy with their job objects?					Total
		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Supervisor	Frequency	2	26	105	114	19	266
	Percent	0,8%	9,8%	39,5%	42,9%	7,1%	100,0%
Manager	Frequency	1	18	48	52	7	126
	Percent	0,8%	14,3%	38,1%	41,3%	5,6%	100,0%
Total	Frequency	3	44	153	166	26	392
	Percent	0,8%	11,2%	39,0%	42,3%	6,6%	100,0%

Both a high percentage of agreement and a high percentage of neutral opinion are noted regarding the employees' dedication to their job goals.

The participants were specifically asked to indicate whether they agreed or disagreed with the statement, "My subordinates do not feel committed to the goals that

have been set." Table 73 shows that 33.9% of the total stated neutrality, while 52.4% (66 persons) of Directors and 47.4% (126 people) of Supervisors disagreed with this assertion, selecting "disagree" or "strongly disagree."

Table 73: Crosstabulation for commitment to work goals

Commitment to goals		Statement: My subordinates do not feel committed to the goals that have been set					Total
Workplace		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Supervisor	Frequency	21	105	93	44	3	266
	Percent	7,9%	39,5%	35,0%	16,5%	1,1%	100,0%
Manager	Frequency	13	53	40	20	0	126
	Percent	10,3%	42,1%	31,7%	15,9%	0,0%	100,0%
Total	Frequency	34	158	133	64	3	392
	Percent	8,7%	40,3%	33,9%	16,3%	0,8%	100,0%

In conclusion, when it comes to worker performance, supervisors (66.6%/177) and managers (54.7%/69) both fully or partially agree that their employees strive to perform to the best of their abilities (Table 74).

Table 74: Crosstabulation for employee performance

Performance at work		Statement: My subordinates strive for the highest possible performance					Total
		I totally disagree	Disagree	Neutral opinion	Agree	I totally agree	
Workplace	Frequency	4	18	67	150	27	266
	Percent	1,5%	6,8%	25,2%	56,4%	10,2%	100,0%
Supervisor	Frequency	0	8	49	56	13	126
	Percent	0,0%	6,3%	38,9%	44,4%	10,3%	100,0%
Manager	Frequency	4	26	116	206	40	392
	Percent	1,0%	6,6%	29,6%	52,6%	10,2%	100,0%

Based on the findings, it seems that managers and supervisors who received training in applying the concepts of human resource management through psychological variables have high rates of effectiveness. However, many of the questions showed similarly high levels of neutrality. This is an intriguing discovery that warrants the need for more research.

6.11. Summary of results

Summarizing the results, it is found that:

- ✓ The percentage of Managers and Supervisors who participated in Human Resources Management seminars and were trained in the use of psychological factors is high, as it reaches 75.3% (392 people) of the participants in the present study
- ✓ Of the 128 people who stated that they did not participate in any seminar, the majority (percentage 43.8%/56 people) attributed their non-participation to a lack of information about the conduct of the seminars

- ✓ The majority of the sample that participated in the seminars stated that through them they gained important knowledge and improved their social and professional skills
- ✓ The sample members who participated in the seminars use the knowledge gained to improve the performance of their subordinates, motivate them and maintain their commitment to work goals
- ✓ The majority of participants state that they make use of all psychological factors emphasizing praise and encouragement at work as well as the creation of a good working climate
- ✓ The majority of Managers and Supervisors (rate 62.8%/246 people) consider that by making use of the knowledge they acquired, the performance of their subordinates and their efficiency increased.

Chapter 7

Discussion - conclusions - proposals

7.1. Discussion

Numerous research studies have demonstrated the value of leadership competence, in matters pertaining to employee motivation; yet, there is a dearth of studies that are exclusively concerned with psychological motivation, its application, and its effects on employee productivity and organizational efficacy. The current study might be considered innovative and outstanding within the Greek public sector in this regard.

The majority of managers and supervisors in the public sector desire to be trained in human resource management, according to the study's findings. Research by Kotou (2021) and Zacharis et al. (2020) revealed similar findings, indicating that administrative staff members' personal and professional growth, as well as the success of the services they oversee, are the driving forces behind their desire to learn about work psychology's tenets.

Furthermore, based on the data gathered here, it appears that the application of psychological factors really helps to boost staff productivity and service effectiveness, as indicated by the majority of participants who expressed their conviction, that the improvements they saw in the services they oversee, were the result of fresh information acquired by seminars they had attended and put to use. While there aren't many comparable studies examining the connection between psychological factor training and service effectiveness, previous research has demonstrated that effectiveness is linked to the leadership model that managers and supervisors choose and employ. The transformative leadership model -which employs many psychological markers for motivation- emerged as the most popular one, given that it boosts worker productivity (Despoteris, 2021; Dimopoulos & Iordanidis 2019; Halatsi, 2021; Stefou, 2020; Zacharias, 2017).

Rouli's (2017) study was the only one to examine psychological elements and the efficacy of the public sector in Greece. It found that both the application of these factors and the effectiveness of the services were low. These outcomes run counter to the present research findings. The fact that Rouli's (2017) only included 87 participants in his research sample could account for this discrepancy.

Finally, it was discovered that the only factor influencing managers' adoption of occupational psychology principles in human resource management is gender, based on the control of data that assessed the relationship between the factors "gender," "age," and "educational background" with the intention of managers receiving training, and subsequently adopting these principles. In line with this, it seems that "age" and "educational background" had an impact on the intention to study.

Similar findings about the "gender" factor were found in the research conducted by An and Meier (2021), Litsa (2021), and Williams (2019). These studies correlated the "gender" factor with the leadership model, and found that women are more likely to adopt democratic leadership models, like transformative leadership, which use a variety of psychological factors.

In regards to the function of the variables "age" and "educational attainment," Kotou's research from 2021 shows results that are comparable to the current ones, namely that they positively connect with the intention to train in human resource management.

7.2. Conclusions

The study's main goal was to examine the percentage of Managers and Supervisors in the Greek Public Sector who participated in training courses on the use of psychological factors in human resources management, and incorporated this knowledge into the management of their agencies' staff.

Sub-objectives included determining how much training managers and supervisors in the public sector have received, evaluating how they apply newly acquired or prior knowledge, assessing the efficacy and efficiency of the services they oversee, and investigating the impact of variables like "gender," "age," and "educational background" on psychological training and application in human resource management.

The information used in this study was obtained from 520 executives (managers and supervisors of departments) in the Greek public administration who answered a questionnaire that the researcher specifically created.

Given that the majority of participants (75.3%) have attended or are currently attending pertinent seminars, an analysis of participant responses reveals a clear acknowledgement, among managers and supervisors of Greek public services, regarding the importance of training in human resources management and its contribution to increasing employee efficiency and service effectiveness.

Also, the findings revealed that the knowledge gained through participation in training programs was a valuable asset in their effort to upgrade the quality of services provided to citizens, and at the same time to increase employee productivity.

This demonstrates that a leader's ability to effectively manage human resources, regardless of their charisma, may be greatly enhanced by their training in new techniques, as well as by their personal traits, experience, and chosen leadership style. In fact, the majority of participants believe that using new knowledge gained in people management and motivation through the use of psychological elements, is closely related to boosting the effectiveness of their services.

Regarding the psychological strategies managers and supervisors use to inspire workers, boost productivity, and improve service quality, it appears that creating a happy workplace, putting in place incentive systems, supporting the development of new skills, and giving praise are all crucial.

In terms of the study's goals, the analysis of the sample responses revealed that the first goal was accomplished because, as table 10 of the preceding chapter demonstrates, 75,3% of the participants took part in training courses that taught them how to manage their subordinates psychologically. As evidenced by their responses in table 12 of the previous chapter, a far higher proportion (81,9% - 66,1% responded "I agree" and 15,8% responded "I strongly agree") of the 392 managers and supervisors who participated in training programs said they were happy with the calibre of the instruction they had received.

As can be seen in figure 12 of the previous chapter, the primary reason given by those who chose not to participate in these educational programs was ignorance about the implementation of the programs. This indicates that there is a communication and information dissemination issue amongst various public sector agencies.

The sample answers indicate that only "age" and "educational background" have an influence on the intention to receive education on the topic of "use of psychological

factors in human resources management." This is in reference to the second objective, which was to ascertain the percentage of influence of the factors "gender," "age," and "educational background " on that intention.

More precisely, as figure 13 and table 50 of Chapter 6 illustrate, "gender" does not significantly influence the inclination to engage in human resource management training programs, that include the use of psychological factors. Age and educational background surfaced as characteristics that had some degree of influence, as was previously mentioned.

Finding out what percentage of managers and supervisors employ psychological factors in human resources management was the third goal. Given that the cross-checks in the preceding chapter (tables 53–65) revealed high rates of psychological factors application, the sample replies demonstrate that the third purpose was accomplished.

In fact, based on the sample's responses, it was discovered that the psychological factors that are most frequently used are the establishment of positive working places and a supportive work environment, recognition and encouragement, impartial assessment and treatment, chances for employees to grow in their careers, and additional benefits. These findings demonstrate that most participants are aware of the advantages of psychological elements, and make extensive use of them in management.

The fourth goal was determining the rate of influence of the variables "gender," "age," and "education level" on the application of the newly acquired knowledge on the subject of "use of psychological factors in human resource management".

The findings demonstrated that age or educational attainment had no bearing on the Managers' and Supervisors' ability to use the knowledge they acquired from training programs on the application of psychological aspects in human resource management. Tables 67, 69, and 71 show that there is, however, a statistical link with the factor "gender".

The fifth and final purpose was to calculate the effectiveness percentage of agencies, which are under the direction of managers and supervisors who are trained in human resource management through psychological aspects, and apply this training on their subordinates.

Tables 72, 73, and 74 in Chapter 6 present the results, which indicate that managers and supervisors who have received training and use the concepts of human resource management through psychological aspects have high rates of success.

Drawing from the aforementioned data, it is apparent that a considerable proportion of managers and supervisors operating within Greece's public sector services have undergone human resource management training, that takes psychological elements into account. Furthermore, it has been demonstrated that taking part in relevant training programs and applying the acquired knowledge, increases the effectiveness of public sector services.

7.3. Limitations of the research

The present survey had 520 participants who were managers and supervisors from different services of the Greek public sector. The opinions and assessments presented in the results are solely those of the participants. It is important to note that participants took the survey voluntarily, so it is impossible to determine whether non-participants would have responded differently.

To accurately depict the true picture, it would be beneficial to include not only executives but also employees. This could be achieved by assessing levels of job satisfaction, self-efficacy, and psychological factors that may motivate them to increase productivity. Additionally, it would be helpful to gather feedback from citizens who use these services, to evaluate their satisfaction and assess the effectiveness of the service. This could be a topic for future research.

7.4. Suggestions for future research

Upon further investigation of the issues within the public sector in Greece, it has been identified that there are various problems and omissions that need to be addressed. For instance, a significant number of managers and supervisors who did not attend training programs on the use of psychological factors in human resource management claimed that their absence from these programs was not due to their own reluctance,

but due to a lack of information. This finding suggests that there is a problem with the dissemination of information and it needs to be investigated.

In addition, it may be worth exploring whether the sense of efficiency improvement expressed by managers and supervisors, aligns with the perception of efficiency that citizens have when dealing with public services.

Furthermore, it has been observed that many participants chose to remain neutral when answering the statements/questions. This attitude warrants further investigation to identify the underlying causes

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Annex I Questionnaire

A.	Demographic Data				
1.1) Gender	Male <input type="checkbox"/>			Female <input type="checkbox"/>	
1.2) Age	30-40 <input type="checkbox"/>	41-50 <input type="checkbox"/>	51-60 <input type="checkbox"/>	60+ <input type="checkbox"/>	
1.3) What is the highest level of education I have received.	High School <input type="checkbox"/>	University <input type="checkbox"/>	Postgraduate <input type="checkbox"/>	Ph.D <input type="checkbox"/>	
1.4) How many years ago I completed my education.	01-05 <input type="checkbox"/>	06-10 <input type="checkbox"/>	11-15 <input type="checkbox"/>	16-20 <input type="checkbox"/>	20+ <input type="checkbox"/>
1.5) In which area of Public Administration I work.					
1.6) What position I hold in my agency.	Manager <input type="checkbox"/>			Supervisor <input type="checkbox"/>	
1.7) How many years I hold this position.	0 - 10 years <input type="checkbox"/>	11 - 20 years <input type="checkbox"/>	21 - 30 years <input type="checkbox"/>	31 - 40 years <input type="checkbox"/>	

Goal 1	Training of Human Resources			
2.1) How many human resources management seminars you attended.	None <input type="checkbox"/>	1-5 <input type="checkbox"/>	6-10 <input type="checkbox"/>	11+ <input type="checkbox"/>
2.1.1.) What was the reason that you did not attend human resources management seminars.	<input type="checkbox"/> I did not think it was important.	<input type="checkbox"/> I did not find the subject interesting.	<input type="checkbox"/> I was not informed about the seminars being conducted.	<input type="checkbox"/> Limited number of seminars.

2.2) How many years have passed since my last seminar.	It was conducted this year <input type="checkbox"/>	1-2 years <input type="checkbox"/>	3-4 years <input type="checkbox"/>	5+ years <input type="checkbox"/>
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2.3.) Satisfaction with the seminar	1 Totally disagree	2 Disagree	3 Neutral opinion	4 Agree	5 Totally agree
2.3.1) The training method was satisfactory.					
2.3.2) The training duration was not satisfactory.					
2.3.3) The instructors did not satisfy me.					

2.4.) Needs covered	1 Totally disagree	2 Disagree	3 Neutral opinion	4 Agree	5 Totally agree
2.4.1) This training covered my work needs.					
2.4.2) This training covered my personal interests.					

2.5.) Help provided by the seminar	1 Totally disagree	2 Disagree	3 Neutral opinion	4 Agree	5 Totally agree
2.5.1) This training helped me gain knowledge to understand the psychological factors that affect the efficiency of my subordinates.					
2.5.2) This training helped me improve my managements and social skills.					

Goal 2	Application of psychological factors to their work				
3.1) Application of training	1 Totally disagree	2 Disagree	3 Neutral opinion	4 Agree	5 Totally agree
3.1.1) I use the knowledge and skills I received from this training to apply psychological factors to improve the performance of my subordinates.					
3.1.2) This training helped me to motivate my subordinates.					
3.1.3) This training helped me keep my subordinates engaged in their work.					
3.1.4) This training did not help me improve the efficiency of my subordinates.					
3.1.5) This training helped me apply practical approaches that improve the efficiency of my subordinates.					

Psychological factors used.	1 Totally disagree	2 Disagree	3 Neutral opinion	4 Agree	5 Totally agree
3.2.1) The efficiency of my subordinates increases with monetary rewards.					
3.2.2) The efficiency of my subordinates is not affected by fair treatment.					
3.2.3) The efficiency of my subordinates increases when I praise their work.					

3.2.4) My subordinates work better when they take some days off.					
3.2.5) The efficiency of my subordinates is not affected by additional benefits.					
3.2.6) My subordinates are more efficient when they attend seminars related to the subject of their work.					
3.2.7) The efficiency of my subordinates is increased by their fair assessment.					
3.2.8) My subordinates are less efficient when the working conditions deteriorate.					
3.2.9) The efficiency of my subordinates is not affected by comments - suggestions (feedback) about their work.					
3.2.10) The work of my subordinates is more efficient when they establish good relations with each other as colleagues.					
3.2.11) The efficiency of my subordinates is not affected by their encouragement to take initiatives.					
3.2.12) The work of my subordinates is more efficient when they are given the opportunity to move up the agency hierarchy.					
3.2.13) My subordinates are more efficient when I encourage them in their work.					

Goal 3	Level of efficiency when applying psychological factors				
4.1) Impact on subordinates by the application of psychological factors	1 Totally disagree	2 Disagree	3 Neutral opinion	4 Agree	5 Totally agree
4.1.1) My subordinates are happy with the objects of their work.					
4.1.2) My subordinates do not feel committed to the goals that have been set.					
4.1.3) My subordinates try for the highest possible performance.					
4.1.4) My subordinates take initiatives.					
4.1.5) My subordinates cooperate with their colleagues.					
4.1.6) My subordinates show interest in the immediate service of the citizens.					
4.1.7) My subordinates are dedicated to their assigned tasks.					
4.1.8) My subordinates are willing to attend training programs.					