UNIVERSITY AMMAR THELIDJI - LAGHOUAT
Department Management Sciences
Business Administration

A Master's Dissertation in Management Sciences , With a specialization fi Business Administration

Titled:

Artificial intelligence as a mediator between organizational agility and professor performance

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Dedication

To the one whose brow was covered in
sweat, and who taught me that success only
comes through patience and perseverance,
to the light that illuminated my path...
to the one who gave so much, so I derived
my strength and self-esteem from him...

To my father..

To the one whom God placed heaven under her feet and
who spent sleepless nights praying for my comfort...
To my soul mate and my shining lamp...
To the great human being whose eyes I have always
longed to be the delight of...

To my mother..

2025

To my firm rib, and the security of my days.
To those who strengthened my arm and were my refuge
and shelter in life..
To my sisters

To my dear friends and companions, to everyone who
has been a help and support on this path, to my
second home and second family, my esteemed teachers,
each by name and position... I dedicate this
achievement and the fruit of my success to you...
and praise be to God always and forever.

And their final supplication is: Praise be to God,
Lord of the worlds.

DALAL

Dedication

To the one whose brow was covered in
sweat, and who taught me that success only
comes through patience and perseverance,
to the light that illuminated my path...
to the one who gave so much, so I derived
my strength and self-esteem from him...

To my father..

To the one whom God placed heaven under her feet and
who spent sleepless nights praying for my comfort...
To my soul mate and my shining lamp...
To the great human being whose eyes I have always
longed to be the delight of...

To my mother..

2025

To my firm rib, and the security of my days.
To those who strengthened my arm and were my refuge
and shelter in life..
To my sisters Fatima and Ikram..

The heart cannot forget the pieces of itself that
were once buried under the soil. To the birds of
paradise and their past joy, to the darkness of loss
and separation...

To you, my sisters, Amina and Malak, and my
brothers, Sami and Wassim, may God have mercy on
you.

To my dear friends and companions, to everyone who
has been a help and support on this path, to my
second home and second family, my esteemed teachers,
each by name and position... I dedicate this
achievement and the fruit of my success to you...
and praise be to God always and forever.

And their final supplication is: Praise be to God,
Lord of the worlds.

AFAF

Acknowledgment and Appreciation

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After much effort and dedication in completing this research, we can only extend our deepest words of thanks and appreciation to our supervisor, **Dr. Baadj Hachmi**, who spared no effort in guiding and assisting us.

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To all of you, we offer our heartfelt thanks.

INTRODUCTION

Introduction

In light of rapid technological developments and the growing challenges facing educational institutions, including universities, these institutions are increasingly required to adopt modern approaches characterized by flexibility and adaptability. This is commonly referred to as *organizational agility*, which means the institution's ability to quickly adapt to changes and respond effectively to opportunities and challenges in order to keep pace with developments and ensure the quality of academic and educational performance.

In this context, artificial intelligence (AI) plays a vital role in enhancing organizational agility and improving faculty performance. AI is considered a revolutionary technology capable of transforming many aspects of life. It can assist in analyzing data, providing tailored recommendations, and enhancing decision-making processes. In education specifically, AI can contribute to improving faculty performance by offering advanced teaching tools, analyzing student performance, and delivering accurate and immediate feedback.

Organizational agility, in turn, is closely linked to faculty performance, as it can help improve a professor's ability to adapt to changes, enhance teaching quality, and increase student satisfaction. It also enables professors to respond swiftly to challenges and opportunities while continuously improving their performance.

Research Problem

Through this study, we have chosen to examine AI as a mediating factor between organizational agility and faculty performance. AI provides tools and techniques that enable professors to enhance their performance, analyze data, and receive customized recommendations. It is also an innovative means that combines flexible management with continuous learning, contributing to improving organizational agility in educational institutions, and thereby enhancing faculty performance.

Accordingly, the research problem can be formulated as follows:

To what extent do the dimensions of organizational agility affect the performance of university professors through the mediation of artificial intelligence at the Faculty of Economic, Commercial and Management Sciences?

Sub-Questions

- Is there a statistically significant relationship between flexibility and the performance of university professors?
- Is there a statistically significant relationship between continuous learning and the performance of university professors?
- Is there a statistically significant relationship between innovation and the performance of university professors?
- Is there a statistically significant relationship between flexibility and artificial intelligence?
- Is there a statistically significant relationship between continuous learning and artificial intelligence?
- Is there a statistically significant relationship between innovation and artificial intelligence?
- Is there a statistically significant relationship between artificial intelligence and the performance of university professors?

Research Hypotheses

Based on the sub-questions, the following hypotheses are proposed:

- There is a statistically significant relationship between flexibility and the performance of university professors at the Faculty of Economic, Commercial and Management Sciences, Laghouat.
- There is a statistically significant relationship between continuous learning and the performance of university professors at the Faculty of Economic, Commercial and Management Sciences, Laghouat.
- There is a statistically significant relationship between innovation and the performance of university professors at the Faculty of Economic, Commercial and Management Sciences, Laghouat.
- There is a statistically significant relationship between flexibility and artificial intelligence at the Faculty of Economic, Commercial and Management Sciences, Laghouat.
- There is a statistically significant relationship between continuous learning and artificial intelligence at the Faculty of Economic, Commercial and Management Sciences, Laghouat.
- There is a statistically significant relationship between innovation and artificial intelligence at the Faculty of Economic, Commercial and Management Sciences, Laghouat.

- There is a statistically significant relationship between artificial intelligence and the performance of university professors at the Faculty of Economic, Commercial and Management Sciences, Laghouat.

Reasons for Choosing the Topic

The choice of a research topic is a crucial initial step, as a well-chosen subject helps achieve valuable results that can be relied upon in the future. Our choice of this topic is based on both personal and objective reasons:

Personal reasons:

- Our personal interest in this particular subject and our desire to study it and explore its outcomes.
- Its close connection with our field of specialization, along with our modest knowledge in this area and the proximity of the research setting, which facilitates the study process.
- Our interest in exploring and expanding our knowledge of AI and organizational agility, as well as our ambition to contribute to academic improvement, particularly within the university context.

Objective reasons:

- The scarcity of studies addressing the mediating role of AI between organizational agility and faculty performance.
- The growing importance of AI worldwide and the necessity of responding rapidly to changes in order to enhance academic performance and gain a competitive advantage.
- This study serves as a continuation of previous research efforts.

Significance of the Study

- Faculty performance plays a critical role in universities, as professors are directly responsible for producing the skills needed in society.
- This study aims to highlight how AI can be used to improve faculty performance, enrich professors' knowledge, and provide better learning experiences for students.
- It also seeks to examine the relationship between organizational agility and faculty performance, and how organizational agility can contribute to improving teaching outcomes.

- Additionally, the research explores how AI can act as a mediator between organizational agility and faculty performance, supporting professors in adapting more effectively.
- Understanding these relationships can guide constructive decision-making and contribute to institutional development.

Objectives of the Study

- Emphasizing the importance of AI and rapid responsiveness to changes as a necessity for performance improvement.
- Identifying the concept and dimensions of organizational agility: flexibility, continuous learning, and innovation.
- Exploring the role of flexible approaches and technological developments in improving the performance of university professors at the Faculty of Economic, Commercial and Management Sciences.
- Shedding light on faculty tasks at the college and identifying significant differences that may influence future decisions.
- Understanding the impact and importance of AI in enhancing the performance of professors at the Faculty of Economic Sciences, Laghouat.

Scope of the Study

- **Time scope:** From March 10 to the end of May 2025.
- **Place scope:** Faculty of Economic, Commercial and Management Sciences, Laghouat, selected for its relevance to the research topic.
- **Human scope:** A sample of 57 professors out of a total of 130 faculty members.

Research Challenges

- Limited availability of references in nearby libraries.
- The saturation of many research topics, making it difficult to find a fresh subject relevant to the institution's context.
- Time constraints and professors' academic commitments.

Research Methodology

To address the research problem, this study employed both the descriptive and analytical approaches. The descriptive method was used to clarify the general concepts of the topic, while the analytical method was applied to process and interpret the collected information.

Contents

CHAPTER I: ORGANIZATIONAL AGILITY

Definition of Organizational Agility

Organizational agility refers to the ability of an organization to rapidly and effectively adapt to changes in both its internal and external environments. Internally, this includes adjusting organizational structures, processes, and cultures. Externally, it involves responding to changes such as shifts in market conditions, technological advancements, regulatory changes, and evolving customer demands. Agility is crucial for organizations that operate in dynamic environments, allowing them to stay competitive, resilient, and responsive to emerging challenges and opportunities (Teece, 2007).

Agility is not just about responding to changes quickly but also about proactively anticipating them, enabling organizations to remain innovative and efficient. The key aspects of organizational agility include flexibility, decentralization, rapid decision-making, and a culture that supports continuous learning and adaptation (Denning, 2018).

How Organizational Agility Enhances Innovation, Change, and Goal Achievement

Organizational agility significantly contributes to a company's ability to innovate, manage change, and achieve its goals in a constantly evolving business environment. Below is a detailed breakdown of how agility contributes to each of these factors:

1. Enhancing Innovation

Agile organizations foster innovation by creating an environment that encourages creativity, experimentation, and iterative development. They can quickly shift focus and resources to pursue new ideas, test them, and implement changes based on real-time feedback.

Table (I-1): Key Benefits of Agility for Innovation:

Factor	Contribution
Flexibility in resources	Allows quick allocation of resources to emerging ideas and projects.
Rapid prototyping and feedback	Facilitates faster development and testing of new products or services.
Continuous learning culture	Encourages employees to innovate and experiment with new approaches.

Illustration:
Agility allows organizations to test prototypes, such as new digital products, and gather user feedback to refine the product rapidly. This leads to faster time-to-market and helps organizations stay competitive (Rigby, Sutherland, & Takeuchi, 2016).

2. Facilitating Change

Organizational agility allows businesses to manage and embrace change effectively. Whether driven by external factors like regulatory changes or technological advancements, agile organizations are well-equipped to pivot or adapt without significant disruptions.

Table (I-2)Key Benefits of Agility for Managing Change:

Factor	Contribution
Decentralized decision-making	Empowers teams to make quick decisions without waiting for hierarchical approvals.
Rapid restructuring	Facilitates quick reorganization or adjustment of operations to adapt to new realities.
Resilience and adaptability	Enables organizations to bounce back from setbacks and continue on their strategic path.

3. Achieving Organizational Goals in a Changing Business Environment

Agility enhances the ability to achieve long-term goals by allowing an organization to continuously adapt its strategies and processes in line with changing conditions, ensuring that it remains aligned with its mission while being responsive to the market.

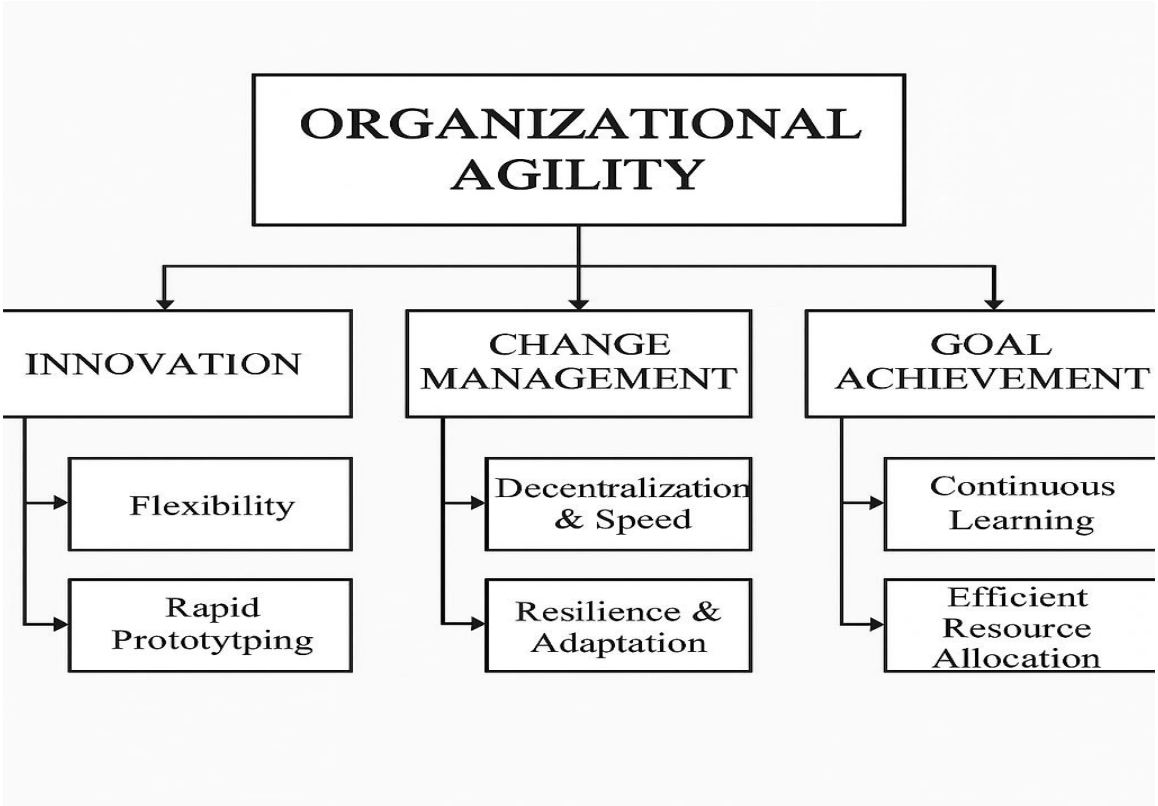
Table (I-3)Key Benefits of Agility for Achieving Goals:

Factor	Contribution
Alignment with external changes	Ensures that the organization's strategy remains aligned with evolving market trends.
Iterative goal-setting	Allows for frequent reassessment and adjustment of goals based on real-time data.
Efficient resource allocation	Supports the optimal allocation of resources toward high-priority objectives.

Summary Diagram: Organizational Agility Framework

The following diagram illustrates how the three key benefits of organizational agility — innovation, change management, and goal achievement — are interconnected and supported by agility factors such as flexibility, decentralized decision-making, and continuous learning.

Figure (I-1) Organizational Agility Framework



2.Importance of Organizational Agility

Organizational agility is a critical factor in enabling businesses to thrive in a rapidly changing and competitive environment. It allows companies to respond to changes effectively, foster innovation, and sustain growth while maintaining a competitive edge. Below, we explore the key importance of organizational agility, focusing on its ability to help organizations adapt to change, promote innovation, and improve competitiveness.

1. Adaptation to Change

Organizational agility plays a vital role in helping companies adapt to fast-paced changes in market conditions, technological advancements, and customer preferences. In an agile organization, the ability to quickly modify strategies,

processes, and operations allows for smoother transitions during periods of disruption.

Table (I-4)How Agility Helps with Adapting to Change:

Key Factor	Contribution to Adaptation
Flexibility in Strategy	Allows organizations to adjust their strategic direction quickly in response to market changes.
Decentralized Decision-Making	Empowers teams to make decisions quickly, reducing delays in reacting to changes.
Continuous Learning and Feedback	Supports the continuous learning culture that helps organizations quickly identify necessary changes.

2. Innovation and Growth

Organizational agility fosters innovation by providing a flexible environment where new ideas can be quickly tested, implemented, and refined. This continuous cycle of innovation allows companies to stay ahead of competitors, leading to sustainable growth.

Table (I-5)How Agility Drives Innovation and Growth:

Key Factor	Contribution to Innovation and Growth
Quick Idea Implementation	Facilitates the rapid execution of new ideas, reducing the time between conception and launch.
Collaborative Culture	Encourages collaboration across departments, leading to creative solutions and innovation.
Adaptive Resource Allocation	Allows the organization to allocate resources quickly to promising new projects or ideas.

3. Achieving Competitive Advantage

In today’s fast-paced market, maintaining a competitive advantage requires organizations to be not only fast but also effective in responding to opportunities and threats. Organizational agility enhances a company's ability to leverage its strengths and mitigate its weaknesses, providing a clear competitive advantage.

Table (I-6)How Agility Provides Competitive Advantage:

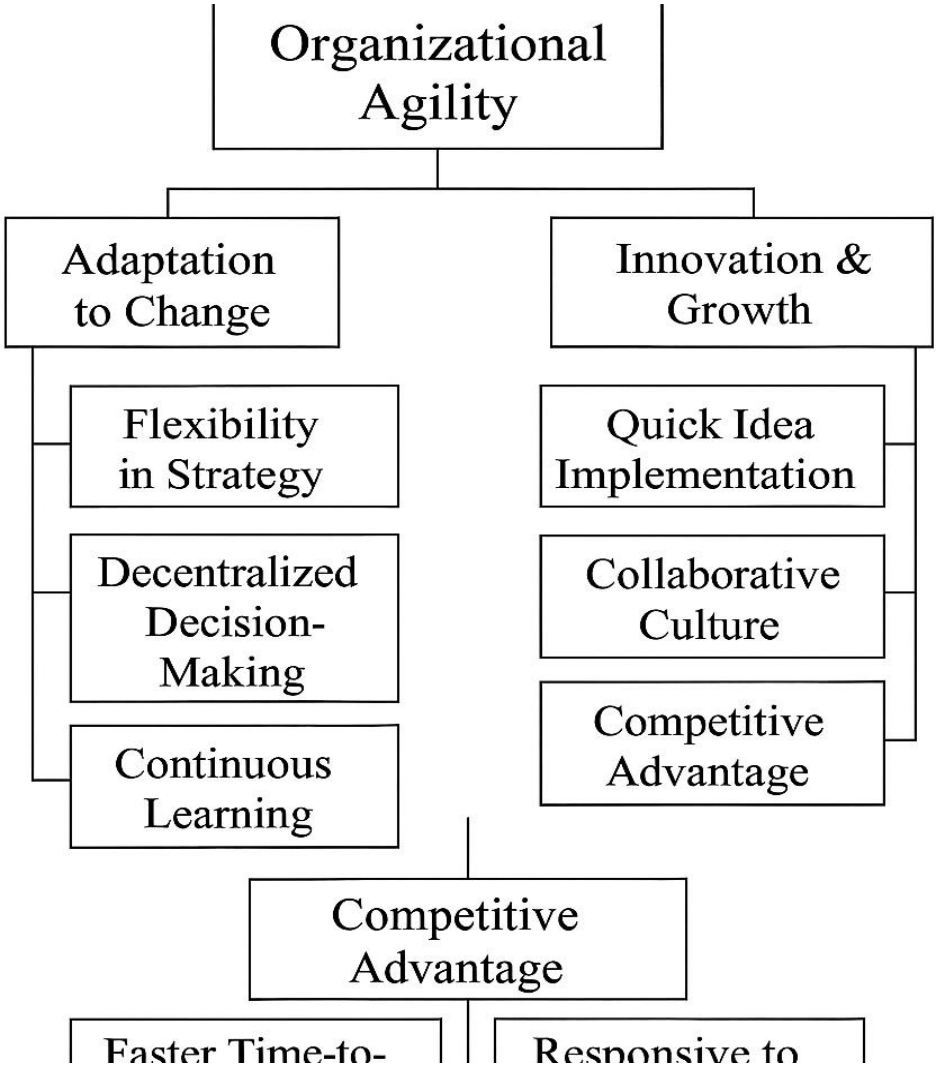
Key Factor	Contribution to Competitive Advantage
Faster Time-to-Market	Allows products and services to be introduced to the market more quickly than competitors.

Key Factor	Contribution to Competitive Advantage
Responsive to Customer Needs	Agility enables companies to adapt to customer demands and preferences faster than less agile competitors.
Cost Efficiency	Enables organizations to optimize their operations and reduce waste, leading to better cost management.

Summary Diagram: Organizational Agility in Practice

The following diagram illustrates how organizational agility contributes to the three major areas of adaptation to change, fostering innovation, and achieving a competitive advantage.

Figure (I-2) Organizational Agility in Practice



.3 Components of Organizational Agility

Organizational agility is composed of various elements that collectively enable an organization to be flexible, responsive, and adaptive in the face of change. Below are the key components of organizational agility, including structural flexibility, quick decision-making, effective collaboration, and the use of technology and systems.

1. Flexible Organizational Structure

A flexible organizational structure is designed to enhance the organization's ability to respond quickly to changes in the business environment. It enables quick decision-making, smooth communication, and effective resource allocation across various departments and functions.

Table (I-7)Key Features of a Flexible Organizational Structure:

Feature	Contribution to Organizational Agility
Decentralized Hierarchy	Allows for quicker decision-making by empowering lower-level managers and teams.
Flat Organizational Layers	Reduces bureaucracy, enabling faster response times and fewer approval layers.
Cross-functional Teams	Facilitates flexibility by allowing teams with diverse skills to work together on projects.
Modular Design	Enables the organization to reorganize its units or teams quickly in response to changes.

2. Speed in Decision-Making

The ability to make quick decisions is vital for organizational agility. In a rapidly changing environment, delays in decision-making can lead to missed opportunities or extended periods of inefficiency. Therefore, the organization must foster a culture that promotes rapid, informed decision-making.

Table (I-8)How Speed in Decision-Making Contributes to Agility:

Factor	Contribution to Agility
Empowered Employees	Employees at all levels are encouraged to make decisions, reducing the dependency on senior management.
Clear Decision-Making Processes	Streamlined processes and protocols that speed up decision-making without compromising quality.
Real-time Data	Decision-makers have access to up-to-date information, ensuring decisions are based on current realities.
Decentralized Leadership	Leadership encourages autonomy and trust within teams, enabling quicker resolutions.

3. Collaboration and Effective Communication

Collaboration and communication across teams and departments are essential for ensuring that the organization can respond swiftly to change. By fostering a collaborative environment, organizations can bring together diverse expertise to address complex challenges and seize new opportunities.

Table (I-9)How Collaboration Enhances Organizational Agility:

Factor	Contribution to Agility
Cross-functional Collaboration	Encourages diverse teams to work together, solving problems and innovating more efficiently.
Open Communication Channels	Ensures information flows freely between departments, enabling quicker decision-making and action.
Teamwork Culture	Promotes a sense of shared responsibility, ensuring that teams can quickly adapt and respond to change.
Knowledge Sharing	Facilitates the exchange of ideas and solutions across different levels and functions.

4. Technology and Systems

Technology plays a critical role in supporting organizational agility. Digital systems and tools help streamline processes, enhance communication, and enable faster decision-making, all of which contribute to an organization’s ability to adapt and respond to external changes.

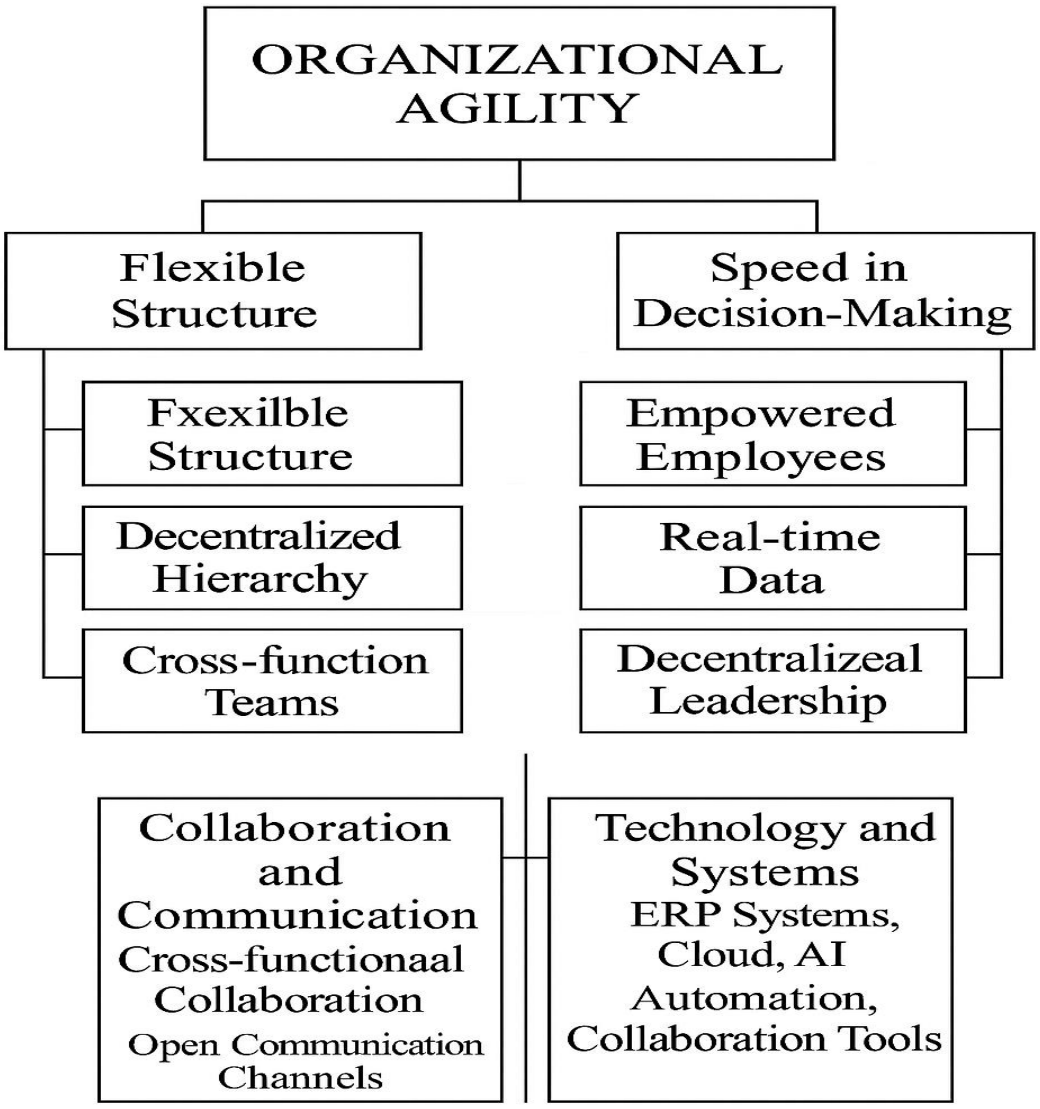
Table (I-10)How Technology Enhances Organizational Agility:

Technology	Contribution to Agility
Enterprise Resource Planning (ERP) Systems	Integrates all departments and functions into a single system, ensuring efficient coordination and resource management.
Cloud Computing	Provides the flexibility to scale resources up or down quickly in response to business needs.
Automation and AI	Reduces manual work, speeds up processes, and enhances decision-making with predictive analytics.
Collaboration Tools	Tools such as Slack or Microsoft Teams enable rapid communication and project management, ensuring that teams stay aligned.

Summary Diagram: Components of Organizational Agility

The following diagram illustrates how the four key components — flexible structure, speed in decision-making, collaboration, and technology — work together to enable organizational agility.

Figure (I-4) Components of Organizational Agility



.4Types of Organizational Agility

Organizational agility is a multi-dimensional concept that involves different types of agility within an organization, such as structural agility, cultural agility, and process agility. These types of agility work together to enable organizations to respond to changes quickly and effectively in a dynamic business environment. Below, we explore each of these types and how they contribute to organizational agility.

1. Structural Agility

Structural agility refers to the design of an organization's structure in a way that enables fast decision-making, effective coordination, and the ability to adapt to changes in the business environment. A flexible organizational structure is key to enabling organizations to respond quickly to market demands, technological advancements, or shifts in customer preferences.

Table (I-11)Key Features of Structural Agility:

Feature	Contribution to Agility
Decentralized Decision-Making	Reduces hierarchy levels, allowing teams to make decisions quickly without waiting for upper management.
Flat Organizational Design	Minimizes bureaucracy, enhancing the speed of communication and decision-making.
Flexible Reporting Lines	Allows teams and individuals to shift roles or responsibilities quickly when needed.
Cross-functional Teams	Encourages collaboration across departments, allowing for faster problem-solving and decision-making.

2. Cultural Agility

Cultural agility refers to the attitudes, values, and behaviors within an organization that support flexibility, adaptability, and continuous learning. Organizational culture plays a crucial role in encouraging agility by promoting openness to change, collaboration, and shared goals across teams and departments.

Table (I-12)How Organizational Culture Enhances Agility:

Factor	Contribution to Agility
Learning Mindset	Promotes a culture where employees are encouraged to learn from experiences, adapt, and improve continuously.
Collaboration	Fosters a collaborative environment that encourages teamwork, knowledge sharing, and faster decision-making.
Open Communication	Encourages transparent and effective communication, ensuring that all team members are aligned and informed.
Risk-Taking	Supports innovation by allowing employees to experiment with new ideas and solutions, without fear of failure.

3. Process Agility

Process agility involves the optimization of internal processes to make them more flexible, efficient, and responsive to change. By adopting lean, adaptive, and streamlined processes, organizations can improve their speed of operation and reduce the time it takes to respond to market shifts, customer needs, or internal challenges.

Table (I-13)Key Aspects of Process Agility:

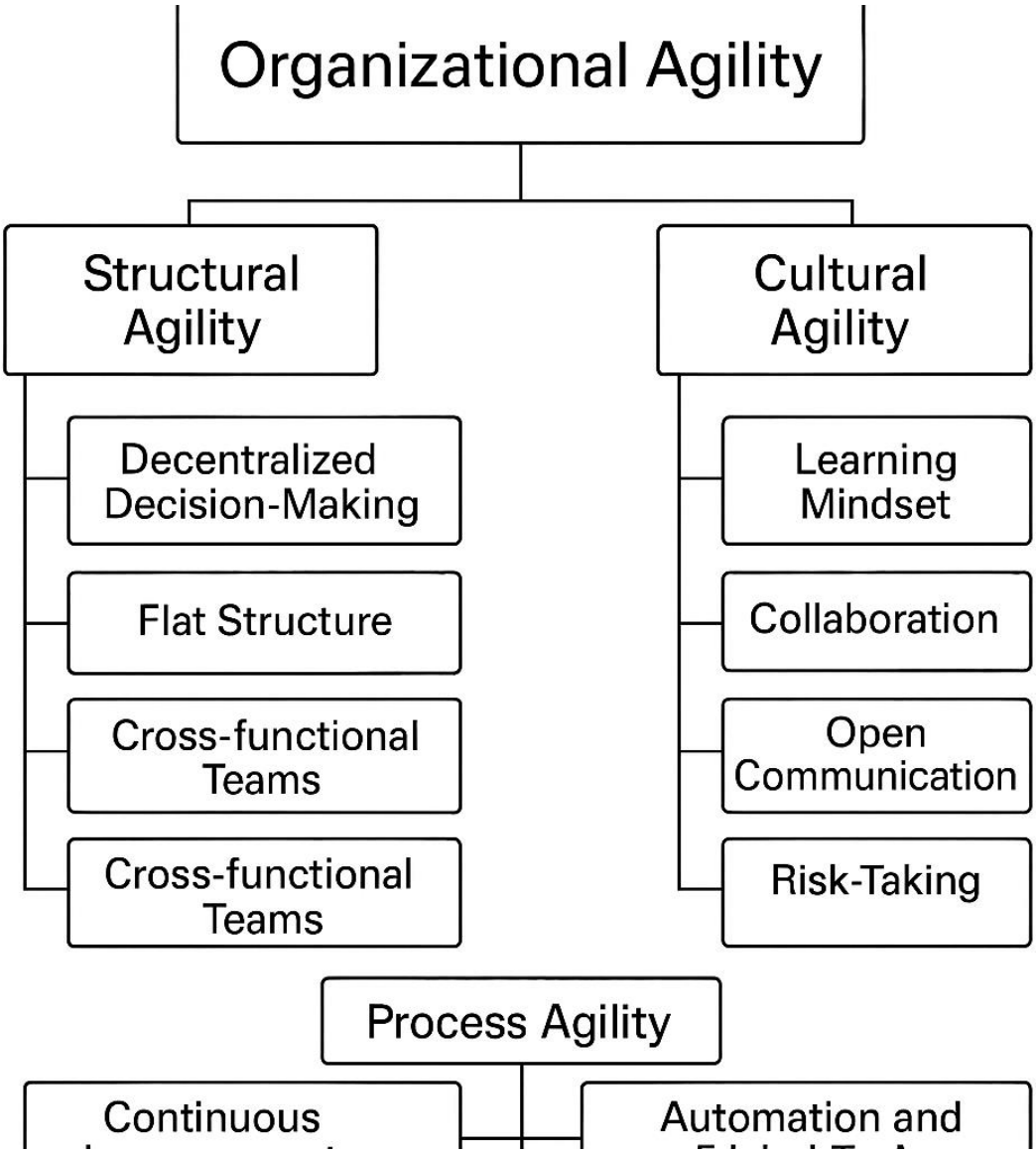
Process Feature	Contribution to Agility
Continuous Improvement	Involves ongoing optimization of processes to ensure they are always adaptable and efficient.
Lean Processes	Minimizes waste by focusing on the most value-added activities, ensuring faster response times.
Automation and Digital Tools	Implements technologies that speed up workflows, decision-making, and reduce human error.
Flexible Workflows	Allows workflows to be adjusted quickly based on changing priorities or market conditions.

Summary Diagram: Types of Organizational Agility

The following diagram visually represents how the three types of organizational agility — structural, cultural, and process — work together to enhance overall organizational agility.

Organizational Agility – Structural, Cultural, and Process Dimensions

Figure (I-4) Types of Organizational Agility



5. Factors Enhancing Organizational Agility

Organizational agility is crucial for businesses striving to remain competitive in dynamic environments. The ability to adapt quickly and effectively to changes in both internal and external environments requires various enablers. These include leadership, human resources, and the right strategies and systems. Below, we explore how each of these factors contributes to enhancing organizational agility.

1. Leadership: The Role of Leadership in Creating an Agile Environment

Leadership plays a pivotal role in fostering organizational agility. Good leadership sets the tone for a culture of continuous improvement and adaptability, encouraging the organization to embrace change. Effective leaders promote agility by fostering an open communication environment, empowering employees, and ensuring alignment with the organization's strategic goals.

Table (I-14)Key Aspects of Leadership That Promote Agility:

Leadership Factor	Contribution to Organizational Agility
Visionary Leadership	Leaders provide a clear vision that aligns the organization towards agile practices and continuous improvement.
Empowerment and Autonomy	Leaders empower teams to make decisions and act autonomously, enabling quick responses to change.
Change Management	Leaders manage and guide employees through change, helping them overcome resistance and embrace new ways of working.
Support for Innovation	Encourages experimentation and the development of new ideas, fostering a culture of innovation.

2. Human Resources: The Role of Competencies and Skills in Enhancing Agility

Human resources (HR) play a crucial role in enhancing organizational agility by ensuring that employees possess the necessary skills and competencies to adapt to evolving business needs. HR practices such as training, employee development, and talent management are essential to maintaining a workforce that is capable of responding quickly and effectively to change.

Table (I-15)Key HR Practices That Enhance Agility:

HR Practice	Contribution to Organizational Agility
Training and Development	Provides employees with the skills required to adapt to new tools, technologies, and processes.
Continuous Learning	Encourages employees to continually update their knowledge and skills, ensuring they remain relevant in an agile environment.
Talent Acquisition	Attracts and retains individuals with the capabilities necessary to thrive in agile environments.
Performance Management	Regular feedback and assessments ensure alignment with organizational goals and promote personal growth.

3. Supporting Strategies and Systems: Flexible Strategies and Systems That Support Agility

To foster agility, organizations need to implement flexible strategies and systems that enable them to respond quickly to internal and external changes. This involves having strategies that can be adjusted as needed and the tools and systems that allow for quick decision-making and efficient resource allocation.

Table (I-16)Key Strategies and Systems Supporting Agility:

Strategy/System	Contribution to Organizational Agility
Agile Strategy Development	Focuses on creating strategies that are flexible and adaptable, allowing for real-time adjustments based on changing circumstances.
Decentralized Governance Systems	Ensures quick decision-making by reducing hierarchical barriers and empowering teams.
Technology and Digital Tools	Implements digital tools and systems (e.g., ERP, CRM) that streamline processes and support rapid decision-making.
Continuous Improvement Systems	Supports ongoing evaluation and refinement of strategies, processes, and structures to stay responsive to changes.

6.Challenges Facing Organizational Agility

Organizational agility offers numerous advantages, including improved responsiveness, innovation, and competitiveness. However, organizations face several challenges when implementing and sustaining agile practices. These challenges can include resistance to change, limited resources, and cultural barriers that may impede the transition toward a more agile approach. Below, we discuss these challenges in detail and explore potential solutions for overcoming them.

1. Resistance to Change

One of the most common challenges to organizational agility is resistance to change. Employees may feel threatened by new processes, technologies, or

structures, leading to reluctance or even active resistance. Overcoming this resistance is critical for successful transformation.

Table (I-17)How to Manage Resistance to Change:

Challenge	Solution
Fear of the Unknown	Communicate the reasons for change clearly, focusing on the benefits for both the organization and employees.
Lack of Trust in Leadership	Build trust by involving employees in the change process, ensuring transparency and open communication.
Loss of Control	Empower employees by giving them a role in shaping the change and allowing autonomy in decision-making.
Cultural Inertia	Implement small, incremental changes and celebrate early successes to build momentum for larger changes.

2. Limited Resources

Another significant challenge to organizational agility is the limitation of resources, whether human, financial, or technological. Without the necessary resources, it is difficult to implement agile practices effectively. Limited budgets, outdated technology, or a lack of skilled employees can hinder the ability to respond quickly and effectively to changes.

Table (I-18)Challenges Related to Limited Resources:

Resource Limitation	Impact on Agility	Solution
Financial Constraints	Limited budgets can prevent investment in tools, training, or systems necessary for agility.	Prioritize investments in key agile practices, and seek cost-effective alternatives for tools and training.
Outdated Technology	Old systems may not support the speed or flexibility needed for agile workflows.	Invest in scalable, cloud-based tools or software solutions that can be easily integrated into current systems.
Skill Shortages	A lack of trained personnel can slow down agile adoption and hinder effective implementation.	Implement continuous learning programs and collaborate with external experts or consultants.

3. Cultural Challenges

The existing organizational culture plays a pivotal role in either supporting or hindering the adoption of agile practices. In many organizations, traditional cultures that emphasize hierarchy, control, and rigid processes may conflict with the values of agility, which focus on flexibility, collaboration, and autonomy.

Table (I-19)Cultural Barriers to Agility:

Cultural Challenge	Impact on Agility	Solution
Hierarchical Structure	A top-down approach may limit decision-making speed and hinder team autonomy.	Move towards a flatter organizational structure where teams are empowered to make decisions independently.
Risk Aversion	A fear of failure may prevent employees from experimenting or adopting new approaches.	Cultivate a "fail-fast" culture where employees are encouraged to take calculated risks and learn from their mistakes.
Siloed Departments	Departments working in isolation may slow down communication and collaboration.	Encourage cross-functional teams and foster open communication channels between departments.
Resistance to Collaborative Practices	Teams may resist sharing information or collaborating openly due to traditional competitive mindsets.	Promote collaboration through incentives and team-building activities that foster trust and shared goals.

Summary Table (I-20): Challenges to Organizational Agility

The table below summarizes the key challenges facing organizations when implementing agility, as well as potential solutions.

Challenge	Impact on Agility	Potential Solution
Resistance to Change	Employees may resist new ways of working, hindering adoption of agile practices.	Engage employees through clear communication, training, and involvement in the change process.
Limited	Financial, technological, and	Prioritize key investments, use cost-

Challenge	Impact on Agility	Potential Solution
Resources	human resource constraints can limit agile adoption.	effective tools, and upskill employees.
Cultural Challenges	A traditional organizational culture may conflict with the values of agility.	Shift to a more collaborative, decentralized approach with a focus on learning and experimentation.

.7 Strategies for Achieving Organizational Agility

Organizational agility is essential for businesses to remain competitive and responsive in today's fast-paced environment. Achieving agility involves implementing strategies that allow for quick adaptation to changes in both the internal and external environments. Below are key strategies that can help organizations enhance their agility: flexible strategic planning, continuous training and development, and the use of modern technology.

1. Flexible Strategic Planning

One of the core strategies for achieving organizational agility is the development of flexible strategic plans. These plans should be designed to adapt to changes in the business environment, ensuring the organization can pivot quickly in response to new opportunities or threats. Flexible strategic planning allows organizations to revise their goals, processes, and resource allocations in real-time.

Table (I-21)Key Elements of Flexible Strategic Planning:

Strategic Element	Contribution to Organizational Agility
Dynamic Goal Setting	Helps organizations redefine objectives based on new market conditions or shifts in consumer behavior.
Scenario Planning	Allows for the preparation of multiple scenarios, ensuring that the organization can respond to different future outcomes.
Frequent Review and Adjustment	Regularly reviewing and adjusting strategies helps organizations remain responsive to new opportunities and threats.
Decentralized Decision-Making	Enables decisions to be made at lower levels, allowing for faster adjustments to changing circumstances.

2. Continuous Training and Development

To maintain organizational agility, it is crucial to invest in continuous training and development programs for employees and teams. These programs ensure that employees possess the necessary skills to adapt to new challenges, technologies, and processes. Continuous learning helps employees stay competitive in their roles, enhances their ability to innovate, and ensures that the workforce remains adaptable.

Table (I-22)Key Practices for Continuous Training and Development:

HR Practice	Contribution to Organizational Agility
Ongoing Skill Development	Ensures employees are equipped with the latest knowledge and skills to deal with evolving business needs.
Cross-Functional Training	Encourages employees to develop expertise in multiple areas, enhancing their ability to adapt to different roles and tasks.
Leadership Development	Prepares future leaders to manage teams and projects with agility and adaptability in mind.
Knowledge Sharing Platforms	Promotes the exchange of ideas and solutions across the organization, ensuring quick implementation of best practices.

3. Leveraging Modern Technology

The use of modern technology is a crucial enabler of organizational agility. Technologies like artificial intelligence (AI), data analytics, and cloud computing provide organizations with the tools they need to make fast, data-driven decisions. By integrating these technologies, companies can improve decision-making speed, streamline processes, and effectively implement changes across their operations.

Table (I-23)Technologies Supporting Agility:

Technology	Contribution to Organizational Agility
Artificial Intelligence (AI)	Enables predictive analytics, automating decision-making, and improving operational efficiency.
Data Analytics	Provides real-time insights that inform decision-making and enable faster responses to market shifts.

Technology	Contribution to Organizational Agility
Cloud Computing	Offers scalable infrastructure that supports agile workflows, remote collaboration, and rapid deployment of solutions.
Automation Tools	Reduces the time spent on repetitive tasks, allowing teams to focus on innovation and adaptation.

.8Tools for Measuring Organizational Agility

Measuring organizational agility is essential for understanding how well a company is adapting to change, innovating, and maintaining competitiveness in a dynamic business environment. Two of the most important tools for assessing agility are Key Performance Indicators (KPIs) and continuous performance analysis. These tools allow organizations to track their progress, identify areas for improvement, and ensure that they are responsive to changing market conditions.

1. Key Performance Indicators (KPIs)

Key Performance Indicators (KPIs) are measurable values that help organizations assess the effectiveness of their strategies and operations. In the context of organizational agility, KPIs are used to measure how well an organization is adapting to change, improving its processes, and meeting customer needs. KPIs provide a clear, quantitative way to evaluate progress and identify areas that require attention.

Table (I-24)How to Use KPIs to Measure Organizational Agility:

KPI	Purpose in Measuring Organizational Agility
Time-to-Market	Measures how quickly the organization can develop and launch new products or services in response to market demand.
Customer Satisfaction	Gauges how well the organization meets customer expectations, which reflects its ability to adapt to consumer preferences.
Employee Engagement	Indicates how motivated and involved employees are, which can be linked to a culture of agility and responsiveness.
Innovation Rate	Tracks the number of new products, services, or processes introduced, providing insight into the organization's capacity for innovation.
Operational Efficiency	Measures how efficiently the organization operates, indicating its ability to streamline processes and respond to changes.

2. Continuous Performance Analysis

Continuous performance analysis involves regularly assessing the performance of organizational processes, systems, and structures to determine whether the company can adapt to changes in the business environment. This ongoing evaluation helps identify potential bottlenecks, inefficiencies, or areas where agility can be improved. By continuously monitoring performance, organizations can stay ahead of trends and ensure that they are always prepared to pivot when necessary.

Table (I-25)Importance of Continuous Performance Analysis:

Performance Analysis Factor	Impact on Measuring Agility
Real-time Data Collection	Provides up-to-date insights into how the organization is performing and how it is responding to changes.
Regular Performance Reviews	Helps evaluate the organization's ability to adapt by reviewing the outcomes of recent changes or innovations.
Benchmarking Against Industry Standards	Allows organizations to compare their agility and performance with industry leaders to identify areas for improvement.
Feedback Loops	Ensures that insights from employees, customers, and stakeholders are continuously incorporated into decision-making and process improvements.

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Conclusion

To measure and improve organizational agility, companies should utilize both **Key Performance Indicators (KPIs)** and **Continuous Performance Analysis**. KPIs provide measurable metrics that assess various aspects of organizational agility, such as time-to-market, customer satisfaction, and innovation. Continuous performance analysis ensures that organizations can make real-time adjustments to their processes, systems, and strategies, enabling them to remain adaptable to changes in the business environment. By employing these tools, organizations can ensure they are on the path to sustained agility and innovation (Denning, 2018; Teece, 2007).

CHAPTER II: PROFESSOR'S PERFORMANCE

Search I: General concepts of job performance

Professional performance is an essential component of an organization's success. It is through the competence of employees that we can judge the sustainability and robustness of an organization. In their section, we explored explore the different aspects of job performance.

1. Defining job performance:

Before addressing the concept of job performance, it is worth mentioning the concept of performance:

- It is a process of evaluating what an individual accomplishes over a period regarding the quantity and quality of the work provided by the individual. (Hamdawi Wassila, 2004).

Job performance is:

- An activity that enables an employee to successfully accomplish assigned tasks or goals,

while making rational use of available resources. **(Khaled Ahmed Al-Sarayriyah, 2011).**

- Obtaining facts or data can help in analyzing, understanding, and evaluating worker

performance and behavior over a period. Their allows us to assess their technical, operational and scientific effectiveness, in order to fulfill the responsibilities and obligations related to their work, whether in the present or the future. (Fayez Abdulrahman Al-Faroukh, 2010).

From the previous definitions, we can conclude that the professional performance of a university professor is determined by his their ability to perform the academic and administrative tasks entrusted to him them in accordance with the regulations and instructions in force within the university in which they work , in an efficient and competent manner.

2. Dimensions of job performance:

These dimensions include the following: (Abdelhak Ali Ibrathem , 2015).

2. 1. The organizational dimension of performance: organizational effectiveness

refers to the methods and techniques that an organization adopts to improve its operations in order to achieve its goals. Therefore, the organization must identify criteria that enable it to assess the effectiveness of the procedures it implements and their impact on overall performance. It is worth noting that their assessment focuses directly on organizational structures, not on the expected social and economic outcomes.

2. 2. The social dimension of performance: the social dimension of performance refers

to the degree of satisfaction of individuals at any level. In fact, employee satisfaction is a key indicator of employee loyalty to the organization. The importance of this their aspect lies in the fact that a company's overall performance may be negatively affected in the long run if it focuses only on the economic aspect, while neglecting the social dimension .

2. 3. The economic dimension of performance: Thanks to their , the company meets the

expectations of its shareholders, customers and suppliers, and gains their trust. Their performance is measured using financial statements.

2. 4. The environmental dimension of performance: It is based on the company's

active contribution to the development and improvement of its environment. This their is done through various activities aimed at preventing or minimizing environmental and social damage caused by its operations, in production and service activities . These initiatives include improving working conditions and preventing occupational accidents.

3. Job performance standards

The goal of setting performance standards is to continuously monitor performance to detect any fluctuations or changes in its level. The goal is to intervene in time to avoid performance deterioration and address weaknesses and deficiencies. The key performance criteria are as follows: **(Abdelmajid Onis, 2022)**

3. 1. Quality: A criterion used to evaluate the performance in terms of regarding accuracy and

quality of either the service or the product. Hence, it is essential that the level of quality is commensurate with the available resources. Their requires the establishment of a benchmark that superiors and subordinates can refer to when needed. In addition, it is important to agree on the level of quality expected in the execution of tasks, taking into account previous concepts of objectives and expectations.

3. 2. Quantity : The amount of work done based on people's abilities and Capabilities, never exceeding them. However, it is also important not to underestimate these capabilities, as their may lead to a slowdown in performance. Their may lead to a lack of motivation and interest among employees, which may create difficulties in the future in increasing performance levels. It is best to agree on the volume and amount of work to be done, which will serve as a motivation to achieve a rate of acceptance commensurate with the progress in performance, commensurate with the experience, training, and potential of each individual.Time:

3. 3. Time: is a non-renewable, non-reimbursable resource that is a capital, not an

income, which makes it important to optimize every moment, because it is constantly dwindling and disappearing.

3. 4. Procedures: These are presented as a series of organized stages for the practical

implementation of the required skills. It is then necessary to agree on the permissible methods and techniques to achieve the objectives. Although the procedures and steps to be followed to accomplish work are generally expected and documented in the organization's literature, in accordance with applicable rules, laws and directives, it is advisable to create consensus between superiors and subordinates on the methods to be followed, whether to execute, receive or hand over tasks. Their will ensure a clear understanding for all parties involved and maintain performance in the absence of the worker

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Search II: Evaluating the job performance of a university professor

The topic of university professors' performance is of great interest to many researchers, given its direct impact on achieving the goals of higher education. This imposes an urgent need to work on improving and raising the level of their performance.

1. Definition of a University Professor:

- Anyone who works and holds the position of assistant professor or professor in a recognized university or the equivalent of these titles in universities that use different titles. **(Laith Hamoudi Ibrahim, 2011).**
- A university professor is a teacher, researcher, thinker, and supervisor of student research, an active member of community service, and a mentor and teacher of students. **(Basma Ben Saleh, 2017).**
- He is a faculty member at the university who engages in teaching students regardless of his scientific rank (Professor, Associate Professor, Assistant Professor, Lecturer, and Teaching Assistant). **(Hashim bin Saeed Al-Sheikhi, 2015).**

Accordingly, a university professor is a faculty member who holds a recognized scientific degree (master's or doctorate...) who works as a permanent or hourly lecturer, and is considered an effective element of the university with several tasks, including the transfer of knowledge and information to university students of all levels and specializations, and is the basis for the success of higher education.

2. Characteristics of a University Professor:

The characteristics of a university professor can be categorized into several types: **(Basma Ben Saleh, 2017).**

Academic characteristics: A set of characteristics related to his mastery of the scientific material, reliance on the scientific method in conveying his ideas, and following up on new scientific developments in his field of specialization.

Professional characteristics: Are a set of characteristics related to the faculty member's mastery of the skills of planning and implementing the teaching process,

taking care of the preparation of lessons and using pedagogical methods that help develop the self-learning skills of his students.

Personal characteristics: It is related to the faculty member's ability to enjoy seriousness and sincerity in performing his work, and to be a good example to his students in what he says and does within the university.

Social characteristics: It relates to the faculty member's ability to learn about the culture of his/her community, to behave well with his/her students in difficult situations, and to be able to establish social and human relations with his/her students and colleagues.

3. Duties of a University Professor:

The duties of a university professor are to: **(Laith Hamoudi Ibrahim, 2011)**

Teaching at the university: includes student education, university education for students and the accompanying exams, counseling and guiding students academically, socially and educationally, and participating in academic and administrative committees and councils that lead to serving the student and qualifying him to adapt and work in life in a better way.

Scientific research: This includes conducting theoretical, procedural, and applied scientific research, supervising the studies and research of graduate students, and directing scientific research to benefit society, increase the efficiency of its sectors, and facilitate the solution of its issues. Society, increasing the efficiency of its sectors and facilitating the solution of its various issues. ....

Community service: The extent to which higher education is able to serve the issues and needs of society, participate in training programs to serve the community in all its institutions and sectors, provide consultations in various fields, and disseminate knowledge through lectures, seminars and conferences. ....

Academic administration: In this area, it is necessary to distinguish between faculty members who hold administrative positions and others. It is normal for department heads, center directors and deans to participate in the university administration, and this may be in exchange for a reduction in their teaching load, or in exchange for a financial reward in the form of an administrative allowance. **(Abdullah bin Mashib Al-Ahmari, 2018).**

4. Developing the job performance of University Professors :

A university professor's job performance consists of specific elements and skills, so he works hard to improve his performance and raise his professional and scientific status.

4. 1. Elements of a university professor's job performance:

Many researchers point out that the job performance of a university professor is divided into several elements: **(Abouab Redouane, 2015)**

- **Knowledge of job requirements:** This includes technical skills and knowledge about the nature of the job and related areas. This requires the ability to turn students' negatives into positives and mistakes into opportunities for learning and development. In addition, this knowledge requires an ongoing commitment to the practice of scientific research, writing books, and publishing scholarly articles.
- **The amount of work done:** This refers to the amount of work that an employee is able to accomplish under normal circumstances, as well as the speed at which this work is accomplished. The results showed that the amount of work performed by the professor in the LMD system is much higher than in the classical system.
- **Perseverance and confidence:** This includes seriousness and dedication to work, as well as the ability to take responsibility and complete tasks on time. The needs of the employee and guidance from supervisors also play an important role in evaluating the results of the work they do.

4. 2. Performance Skills of a University Professor:

A university professor must possess several skills that enable him to perform his job efficiently, namely: **(Nadia Madoudi, 2018)**

4. 2.1. Teaching planning skills: They include:

- **Planning course objectives:** The course design is based on a wide range of objectives that

are of interest to students and take into account their levels and abilities.

- **Planning teaching strategies:** It includes planning the teaching of the course and selecting

the teaching strategies that the professor intends to use.

- **Planning course requirements and assessment methods:** The professor determines the

types of assessment: oral, written, individual, group... The professor determines the aspects of evaluation in addition to assigning marks for the course.

- **Planning the course outline:** The course outline includes objectives, assessment methods,

references, and test dates. ....

4. 2.2. Implementation skills for university teaching:

It relates to the ability of the university professor to carry out university teaching, organize and manage the lecture efficiently, such as varying teaching methods from lecturing to asking questions to dialogue. ....

4. 2.3. Skills to assess student learning and provide feedback:

It includes the professor's ability to use a variety of methods to assess student learning, such as tests and individual readings, and to provide immediate feedback after the assessment process, by marking test papers or writing comments on worksheets. ....

4. 2.4. Communication and networking skills:

A university professor must be able to speak clearly and vary in speech styles in a way that attracts listeners, have a strong and understandable voice, whether with students, administrators or employees. .... Use appropriate words to direct others, maintain eye contact with others, use gestures and facial expressions to deliver messages to students, recognize and memorize the names of students and all those who deal with them and call them by their names.

5. Ways to Improve the Job Performance of a University Professor:

Some of the ways to improve the performance of a university professor include :**(Abouab Redouane, 2015)**

- Minimising as much as possible the chances of assigning the teaching staff with administrative and pedagogical tasks that burden the professor.

- Communicate and learn about the latest teaching and evaluation methods and attend special courses.
- Attend international and national forums and seminars related to the subject of his specialisation.
- Engage in research laboratories and research teams in order to continue to conduct research and not interrupt it and write, which will positively affect the level of the professor.
- Expand the circle of participation of professors from decision-making and avoid bureaucratic unilateralism;
- Supporting the continuous training of higher education professors, so that their training is in line with the objectives of the curriculum, which must combine theory and practice.
- Providing a favourable climate for the training of the professor in parallel with theoretical and practical training that allows him to achieve the necessary competencies;
- Providing university education requirements such as offices, equipment and modern scientific techniques, and providing modern scientific periodicals and journals, and everything that would develop the process.

6. Evaluating the Job Performance of a University Professor:

The process of evaluating the performance of a university professor by specific and selected methods aims to preserve the prestige of the university institution, and the evaluation process is carried out according to specific criteria and methods.

6.1. Objectives of the Professor's Performance Evaluation:

The process of evaluating the performance of a university professor achieves a number of objectives, the most important of which are: **(Abdullah bin Mashib Al-Ahmari, 2018)**

- Evaluating the level of performance of the academic staff member and following up on the level of progress;

- Detecting the strengths of the performance to enhance and benefit from them, and the possibility of transferring them to others through multiple

means, identifying weaknesses to avoid them, and developing solutions to achieve this;
- Praising the outstanding performance of the academic staff member and investing this in multiple aspects to serve the community through scientific research and various scientific activities;
- The evaluation process helps in providing indicators and data on the level of achievement and lack thereof in many aspects that the university seeks to achieve
- It helps in providing a database on the programmes of the university.

6.2. Criteria for Evaluating the Professor's Performance:

The performance evaluation criteria are as follows: **(Leila Rizkan, 2013)**

Teaching process and course delivery: This includes the ability of the university professor to transfer scientific knowledge to their students. It also includes their ability to complete the syllabus within the specified period, while being able to answer students' questions and help them learn.

Scientific research: This relates to the number of scientific articles published in various academic journals, the number of books written and published, as well as the number of published translations. This also includes the number of theses and dissertations supervised, as well as participation in scientific conferences.

Educational counselling and relationship with students: This is the ability of a university professor to positively influence his students and gain their trust, love and respect. This also includes the ability to understand their problems and contribute to solving them.

Administrative responsibilities and relationship with management: When participating in administrative tasks, it is essential to adhere to the University's regulations and guidelines in order to effectively facilitate and carry out the tasks and responsibilities of administration.

Social activity and relationships with colleagues: Includes participation in social events such as meetings, trips and social clubs, respect for higher academic grades, as well as promoting collaborative practices.

6.3. Methods of Evaluating the Professor's Performance:

There are many ways to evaluate the performance of a university professor, the most important of which are:

6. 3.1. Teacher self-evaluation:

Education urgently needs a class of teachers who take the initiative to constantly renew their approach. These teachers must demonstrate creative thinking and cannot be confined to the same rigid and standardised teaching style for all (**Rachid Bennani, 1991**). Courses should not be limited to a fixed narrative, which deprives them of possible modifications, improvements and innovations. It is essential that the teacher really puts himself in the place of the student who often distinguishes between superficial knowledge and enriching knowledge, between old information and new and important data, between an attractive and engaging teaching style and a monotonous approach that numbs the mind, etc.

Perhaps the most important methods of self-criticism are the periodic review of the lessons and lectures delivered year after year with the aim of enriching them and modifying them or modifying some of their ideas based on:

* Modern and contemporary references available to us.
* Lessons and lectures given by experts, teachers and researchers in the subjects they supervise are of great value. It is often surprising to see how a teacher, regardless of his or her ego and vanity, can critically read his or her own knowledge and the way he or she communicates it. This reveals many shortcomings, both epistemological and methodological.

To prevent teachers from falling into stagnation, isolation or limiting themselves to a very narrow specialization, it is essential that they diversify the subjects they teach after a certain period. However, these subjects should remain close to or closely related to their area of expertise.

6. 3.2. Teacher evaluation by other teachers:

Some may balk at this kind of evaluation, asking: Who has the right to judge? However, the primary objective is to encourage structured teamwork. This arrangement allows teachers to rely on each other, thus allowing the novice teacher

to benefit from the experience of those with long careers and learn from experts as well as non-experts. Research that focuses on improving the performance of teachers and students, as well as on raising their cognitive and pedagogical performance, is similar to any research in various fields of knowledge. This goal can only be achieved if the individual effort is transformed into an organized collective effort.

This type of evaluation can be carried out through periodic educational meetings during which teachers responsible for teaching the common subject present their reports. These reports include monthly, quarterly, semi-annual, annual or annual critical analyses of the study programme. They represent training stages for teachers, allowing them to identify issues, propose solutions, share experiences and coordinate among themselves. This will undoubtedly contribute to a deeper understanding of the subject, highlighting its importance, role and educational objectives, thus promoting the continued development of language and literature programmes.

6. 3.3. Department Head Evaluation:

Heads of departments in different faculties play an important role in evaluating the teaching performance of a university professor by virtue of their responsibilities and administrative positions, and by virtue of their direct access to the teaching load in the department, course descriptions, numbers of students in the divisions, and informal conversations among faculty members.

6. 3.4. Evaluation of the professor by the administration or the qualified scientific committee:

It is legitimate to ask how a teacher can best be evaluated by the administration or committee. Of course, this evaluation will not be done through exams, tests or inspections. However, an organization that pays a teacher for a specific task has the right to require certain qualifications necessary to carry out that task. (**Rachid Bennani, 1991**)

The responsibility here is administrative and scientific, and includes some form of supervision or monitoring, whatever you want to call it. Thus, after the completion of each course or subject of the programmer, it is the responsibility of

the teacher to present his lessons in the form of structured and printed lectures, which will be discussed by a competent scientific committee. After being analysed and enriched, the teacher is responsible for editing and revising them again. These works can then be published in book form, benefiting the teacher financially and morally, and enriching the library as well.

6. 3.5. The student's evaluation of the professor:

It is true that the evaluation of a teacher by a colleague is often seen as unacceptable by many teachers. What about student evaluation? This type of evaluation is common in Western universities, with very positive results for both students and teachers. Although the linguistic, cognitive and methodological level of university students can be criticised, some of them have the intuition to distinguish between superficial knowledge and enriching knowledge, between outdated information and modern and original content, between an engaging learning style and a restrictive method that stifles the mind and undermines the intellect.

This type of evaluation is usually conducted at the end of the semester or academic year using a form provided by the administration or the subject teacher. This form contains various information related to scientific, methodological, pedagogical and psychological aspects. The student is then asked to select numerical ratings or qualitative comments regarding the teachers' teaching skills. **(Jassim Mohammed Al-Salami, 2003)** For example, let's take the case of teacher (X) who teaches subject (A).

Table No. (1) Students' evaluation of the university professor.

Competent note	**A**	**B**	**C**	**D**	**E**
	Very good	**good**	**Medium**	**Below average**	**Weak**
Linguistic competence of the professor		+			
Scientific	+				

competence (control of knowledge)					
Methodological competence		+			
Pedagogical competence		+			
Knowledge Delivery Mechanisms	+				
His competencies in blending theory and practice			+		
Competencies in dealing with students				+	

This type of evaluation will lead to the professor discovering himself through the observations of his students, and let's not forget that the spectator is, always, a good player.

7. Steps to evaluate the performance of a university professor:

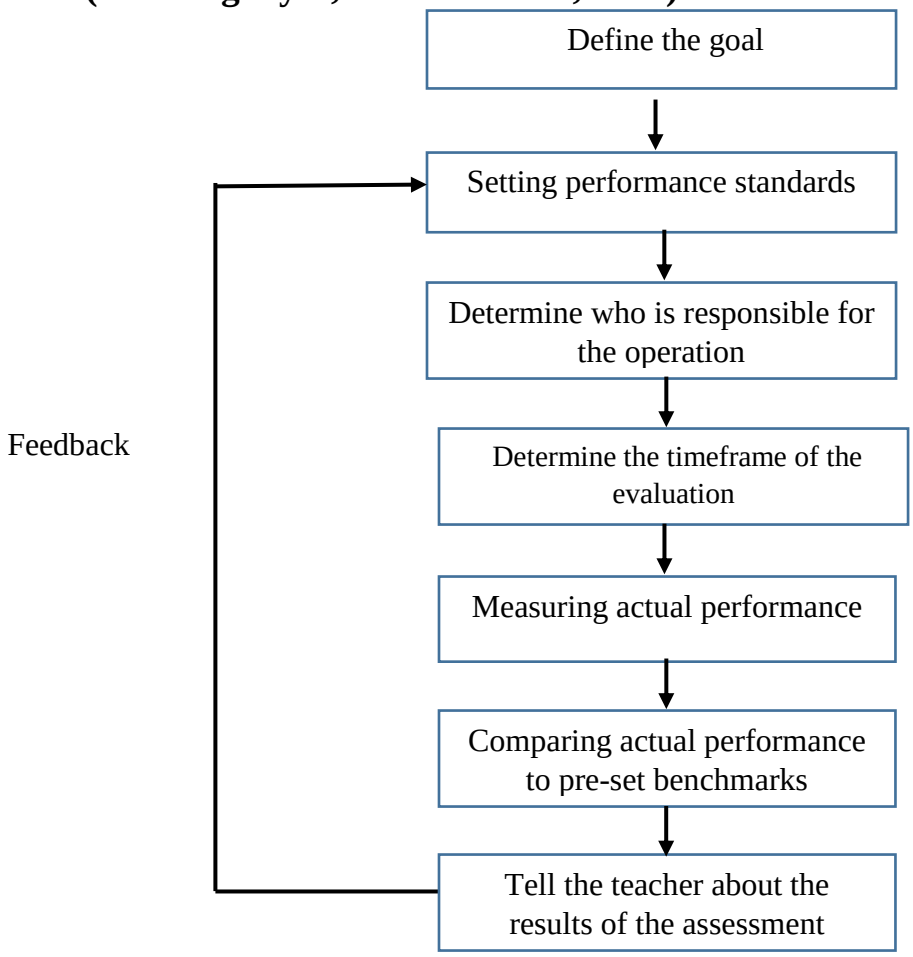
Steps for evaluating performance can be laid out as follows:

- Determine the goal that the university administration seeks from the evaluation process of its professors by following up on the information related to the students' programme of lectures and directed work.
- Determine the performance criteria that must be met by the professor to be able to perform his work at the required level, including communication skills such as the skill of writing scientific reports, participation in conferences and seminars related to his specialisation, possessing the skill of influencing his students....
- Identify the evaluators, which can be the supervisor, the evaluation committee, co-workers, self-assessment;
- Identify the time frame for evaluation, which may be triennial, hexagonal or annual....

- Clear, accurate, precise and objective feedback and information is needed to measure performance;
- compare actual performance to pre-established standards;
- inform teachers of evaluation results;
- feedback is essential as it helps the individual to know how they will perform in the future.

The figure below illustrates these steps:

Figure No. (1) Steps for evaluating the job performance of a university professor. **(Sara Saghayer, Huda Bouafia, 2022)**



Search III: Academic Production and the University Professor

1. Definition of the Academic Output of a Professor:

Enter all the scientific work produced by the professor that serves the objectives of the university and society in general through the activation of conferences, scientific seminars, and academic research that benefit the student to develop his scientific capabilities and then help the promotions and scientific degrees of the university professor so that he combines his goals with the objectives of the university within the framework of serving science and knowledge.

2. The specificity of the Algerian university under the LMD system:

Developed countries have constantly focused their efforts on reviewing their educational systems on a regular basis with the aim of improving and developing them. This prompted them to adopt quality standards and quality management principles in theory and practice. They have set standards and foundations to assess the quality of educational outcomes and ensure the effectiveness of academic programmes in acquiring the knowledge, skills and abilities needed for progress. This approach also aims to encourage their effective contribution to the development of their countries, achieving sustainable and effective development, while ensuring their economic, social and security stability.

When studying the higher education system adopted by the university environment in 2004, we find that it appears at first glance to be a dynamic and modern university education, harmonised with its economic and social environment. However, the success of any reform depends on the favourable conditions surrounding it. Herein lies the weaknesses of the LMD system, which has not benefited from a favourable climate, whether on the material or human level. There is a lack of educational infrastructure such as laboratories, reading rooms and specialised libraries, as well as a lack of supervision for both teachers and students, especially in the technical field. Moreover, it is important to note that this system faces great difficulties in implementation, as it does not only concern universities, but also the economic sector, which must immerse itself in a new experience of privatisation and entrepreneurship. Added to this is the lack of willingness and commitment on the part of the university community, especially

among school leaders and teachers, to meet the challenges posed by this new framework. **(Sonia Achouri, 2018)**.

Since the Algerian University has adopted this approach of moving from traditional teaching to a modern LMD-based system, which requires close cooperation with social and economic partners, it has become necessary to prepare professors by providing them with all the necessary technologies and educational resources. This will enable them to optimally perform their work in a context where the knowledge economy relies on modern digitalisation and distance education.

3. Definition of Distance Education:

This type of distance education is used for a number of reasons, including:

- This type of distance education is resorted to for several reasons, including the withdrawal of the student from the academic body responsible for guiding him due to other commitments, such as work, which hinders the student from attending classes;
- The student's health conditions that prevent him or her from attending the training sessions;
- Various crises that oblige all parties to restrict the distance education process, such as what has been experienced in the recent period of the pandemic (Coronavirus).

Distance education relies primarily on the use of communication technologies to transfer knowledge to learners who may not have had the opportunity to benefit from traditional education. This approach began with the adoption of communication tools that have evolved through different technological eras to meet the requirements of modern times. Apps such as Zoom and Google Meet are perfect examples of this. It is important to note that there is a close connection between distance education and e-learning. In fact, eLearning represents a wide range of applications and processes, facilitating the exchange of files and providing a structured framework for addressing learning challenges.

Although this type of education emerged in Algeria in the 1980s, with the use of compact discs and then moving to the Internet to disseminate educational content such as e-books, its development remains slow. Despite its scientific and economic importance, the Algerian experience in the field of educational technologies is still in its infancy, progressing slowly and not yet reaching the desired levels of ambition. **(Khadim Rabeh, 2020)**.

4. The Academic Production of the University Professor and Its Obstacles in the Light of Distance Education:

There are many obstacles that weaken the continuity of the distance education process and reduce the possibility of scientific production for the university professor, including the following:

4. 1. The physical cost:

The development of educational content by a university professor is a process that requires a significant financial investment. In addition, once the content is developed and ready for distribution to students, significant additional costs have to be allocated for its distribution.

4. 2. Difficult to train:

There is a gap between the teacher and the learner in their interaction with digital technology, often due to technical issues with sound or image, as well as partial understanding of the subject matter.

4. 3. Sufficient skills:

The move towards distance learning requires learners and teachers to possess sufficient skills to take advantage of this mode of teaching and meet the requirements of this process. Therefore, it is necessary to professionally train and motivate both parties to use the Internet in general and then introduce them to programmes specific to the self-learning process. This requires a great and continuous effort.

4. 4. Insecurity and confidentiality:

In some cases of distance learning, especially when delivered online, it is important to emphasise that digital learning relies on the use of online technology and software. This exposes the academic content of university professors to the risk of hacking, which is commonly referred to as hacking.

5. Barriers related to scientific research and work environment:

Among the obstacles facing the professor, you can often find poor communication with research centres and the difficulty of obtaining results related to his research, as well as the difficulty of publishing in foreign journals and Arabic periodicals and the lack of references, sources and previous studies.
As for the obstacles related to the work environment, we summarise them as follows **(Allal Nazeeha, 2021).**

- Lack of teams of researchers;
- Lack of incentives to encourage work;
- The interference of influential people in the state, including leaders and administrators, and imposing their opinion on the researcher;
- Obstacles and difficulties that limit the researcher from attending scientific conferences and seminars that would help him to strengthen his knowledge and the quality of his research.

6. Negative perception of the professor:

There is a negative perception towards the intellectual and scientific work of university professors, as a result of their reliance on distance education. This method is often judged by some as incapable and ineffective in preparing students.

As a result, the value of teachers' work is often overlooked, whether through the promotion system or through material working conditions, not to mention the criteria for salary increases in their careers. Sometimes, seniority and merit are confused, making the results unpredictable. So it seems that the system no longer recognises the evaluation of teachers. **(Delaminat 1989)**.

7. Difficulty in providing technological capabilities:

These difficulties are manifested through the following:

- The financial inability to provide the technological infrastructure of means and equipment, which is beyond the scope of the university professor **(Ould Khalifa, et *al,* 1989);**
- There are also physiological obstacles that lie in the lack of feedback from the professor's mental abilities and his distance from real-life councils in order to better exchange information;
- The professor's lack of conviction about the importance of using technological means in the teaching process;
- Lack of full control over student groups in the usual way in practical classes and close lectures;
- The occurrence of educational isolation between the university professor, the student and even the community due to the distance of the scientific-academic dialogue;
- Communication and network problems and their impact on the professor's output in a direct way, such as constant interruptions and fluctuations in the communication process between the two parties communicating electronically;
- Lack of connection between the university and international academic scientific institutions due to the electronic distance, which hinders the process of knowledge exchange and the advancement of scientific research in the future and the inability to keep abreast of new knowledge developments, especially with regard to the exchange of experiences and expertise;
- Exposure of the professor's scientific material to the risk of hacking at any time due to electronic piracy;
- The professor's effort in preparing the scientific material, publishing it electronically, and interacting with students remotely. **(Adel Ghazali, 2017)**.

8. Curricular constraints:

* Such as the nature of the structure of some courses that are not suitable for the distance teaching system.
* The academic guide for the university professor does not include guiding models that explain how to teach content through educational platforms, and it is necessary to remedy this.

- The dominance of the indoctrination approach in e-meetings through the digital platform.
- The lack of immediate feedback between the professor and the recipient.
- The lack of professional development of the university professor in light of the digital control and the repeated routine about his scientific performance.**(Al-Arifi Yousef Al-Rifi, 2003).**

If a university - any university - does not review and adapt its programmes and curricula to make them functional and meet the real needs of society, while ensuring that students are equipped with the necessary skills and abilities for their future careers, it risks sending its graduates into a world of unemployment. Such a university does not deserve the name of a university; it should disappear, like the dinosaurs, and be consigned to oblivion by the society that welcomes it. **(Khatib Ahmed, 2006).**

The issue of growth in the number of students has been strongly raised in recent years, and this issue can be linked to a number of factors, the most important of which are **(Nabil, Bousid, 2002);**

- Factors associated with the principle of equal access to higher education.
- The demographic growth witnessed by Algeria in recent years, which has had a major impact on the number of university enrolments.

The above-mentioned problems, along with others, raise an alarm about the extent of deterioration in the university education system. They emphasised the importance of increasing investment in higher education. However, this does not mean that the university should be transformed into a commercial organisation concerned with financial profit, which may take it away from its primary objectives, which is to raise an educated, knowledge-rich generation capable of participating in the reconstruction and emergence of the knowledge society. Moreover, if destruction continues to infiltrate our higher education institutions, it will widen the gap that separates us from the requirements of modernity and contemporary knowledge. It is therefore crucial to produce generations of highly qualified graduates in all fields of knowledge.

9. Suggested Solutions to the Obstacles Facing the Academic Production of the University Professor:

It is important to emphasise that a professor's academic output cannot progress without an improvement in his/her teaching practices. To modernise the traditional lecture method, the following methods of distance learning or e-learning can be adopted **(Allal Nazeeha, 2021).**

9.1. Lecture recording style:

Recording lectures helps to solve the issue of individual differences between students. In addition, it will save time for teachers by making them available on the e-library, thus making the resources available to all students.

9.2. Interactive lecture style:

This text highlights the importance of transferring new scientific knowledge to students by utilising the teacher's previous knowledge and experience. The latter designs an initial introduction with the aim of increasing student engagement in the learning process and making the content memorable. The aim is to stimulate students' thinking, with the teacher playing the role of facilitator and mentor, by engaging as many students as possible in a dynamic communicative interaction.

9.3. E-lecture:

The lecture can be held synchronously or asynchronously. When we say ‘synchronised’ we mean real-time, live interaction between teacher and learner over the network. In contrast, in an asynchronous approach, courses can be streamed online and sent to learners via email. These contents can also be archived and viewed later online. In addition, lectures can be held via video conferencing, and video-based online courses can be recorded and made available on the web, allowing easy access for students.

9.4. Use multimedia in the lecture:

Examples include publications, videos, slides, audio recordings, computers, films of various types, and illustrations, whether through audio or visual means. In order to solve the obstacles facing the academic production of university professors, the following elements must be taken into consideration:

- ✓ Endeavouring to strike a balance between virtual and in-person education.

- ✓ Resorting to strategic thinking that contributes to reducing the obstacles to the scientific production of the university professor by using optimal methods of digital control and technological media that facilitate the interactive process between the professor and students.
- ✓ Organising special in-person scientific courses and meetings to deliver information in a smooth and flexible manner away from work pressures.
- ✓ Raising social awareness of the importance of the scientific role of the university professor to meet the goals of society and the university, and endeavouring to provide the necessary conditions for the professor's work, especially the work environment, which must be suitable in the knowledge society or what is known as the networked society that requires it.

National and Foreign Studies Related to the Performance of University Professors:

1) A study (Bouzidi and Boudil 2017): entitled the quality of the university professor's performance from the point of view of the students of the Department of Psychology and Educational Sciences at the Faculty of Humanities and Social Sciences at the University of Ouargla, Algeria, Facts Journal of Psychological and Social Studies, Issue IX (JA).

This study aimed to:

- To identify the students' assessment of the quality of the professor's performance in the department.

This study concluded with several results, the most important of which are:

- A good assessment of the level of the professor's performance from the students' point of view.
- Giving a set of factors that the students assessed as improving the performance of the university professor according to each dimension of the performance scale, which were arranged as follows: The professor's relationship with students, research activity, and educational activity, which is the same as the students' assessment of the importance of the dimensions.

2) Entitled (Mesbah, 2017): The extent of the university professor's commitment to the code of ethics of scientific research in the Algerian university, a field study on a sample of professors at the University of Messila, Department of Psychology, Mohamed Boudiaf University of Messila.

This study aimed to:

- To identify the extent of the university professor's commitment to scientific research ethics in the field of teaching.
- Identify the extent of the university professor's commitment to scientific research ethics in the field of supervising scientific theses.
- Identify the extent of the university professor's commitment to scientific ethics in the field of research and scientific production.

This study concluded with several results, the most important of which are :

- The university professor is committed to scientific research ethics in the field of teaching to a high degree.
- The university professor is committed to scientific research ethics in the field of research principles and scientific production to a high degree.
- The university professor adheres to scientific research ethics in the field of research and scientific production to a high degree.

3) **A study (Zaroukhi, 2019) entitled the impact of organisational citizenship**

behaviours on the performance of the university professor, a field study at the Faculty of Economic and Commercial Sciences and Management Sciences at the University of Bordj Bouaririg, Academy of Social and Humanitarian Studies, Vol. 12, No. 01

This study aimed to:

- To highlight the impact of the practice of organisational citizenship behaviours with its dimensions represented in altruism, civility, sportsmanship, conscientiousness, and civilised behaviour on the level of teaching and research performance of the university professor.
- To identify the reality of the teaching and research performance of the professors of the Faculty of Economics, Business and Management Sciences at the University of Bourj Bouarreg.
- To determine the nature and strength of the correlation between the professor's practice of organisational citizenship behaviours and its reflection on the level of his teaching and research performance.

This study concluded with several findings, the most important of which are:

- The level of the respondents' practice of organisational citizenship behaviours is high and their evaluation of their teaching and research performance is also high.
- There is a positive and significant relationship between the two variables of the study, where the practice of organisational citizenship behaviours contributes 20.1 per cent to improving the teaching performance of the respondents at the Faculty of Economics, Business and Management Sciences at the University of Bourj Bouarreg, while 15.5 per cent contributes to improving their research performance.

4) A study (Ben Meri Mustafa, Flaq Ali, 2020) The impact of information and communication technology on the pedagogical performance of university professors

The number	Phrase content	Arithmetic mean	Standard Deviation	Approved Bike	Ranking
01	ICT helps to improve the quality of performance	**4.47**	**0.674**	Strongly agree	**1**
02	Information and Communication Technology (ICT) facilitates the renewal of metrics hubs	**4.17**	**0.867**	OK	**3**
03	Digital systems and equipment help professors to carry out their scientific and pedagogical tasks	**4.33**	**0.703**	Strongly agree	**2**
04	The university equips scientific and pedagogical facilities with the latest digital systems and technologies to develop work methods	**2.91**	**0.967**	Neutral	**6**
05	The university allocates financial resources to acquire digital equipment that assists the professor in obtaining, publishing and accessing scientific documents	**3.16**	**1.180**	Neutral	**5**
06	The university incentivises and encourages faculty members to use modern presentation tools and software in teaching	**2.87**	**1.134**	Neutral	**7**
07	The university works to develop the capabilities of the teaching staff through training courses to improve their efficiency in the use of modern means of presentation and software provided by modern	**2.31**	**1.013**	Disagree	**8**

	technology				
08	ICT helps professors to revamp lesson plans	**4.07**	**0.632**	ok	**6**
The overall average	The impact of information and communication technology on the performance of university professors in the pedagogical aspect	**3.59**	**0.89**	ok	

It is clear from the previous table that the majority of the respondents' attitude towards the impact of ICT on the performance of the university professor in the pedagogical aspect was in favour, as reflected by the overall weighted arithmetic mean of this dimension, which reached 3.53 with a standard deviation of 0.89, indicating that the professors agree that ICT improves their pedagogical performance. The order of the statements of this dimension was as follows:

Statement 1 ranked first in terms of the degree of agreement, with an arithmetic mean of 4.47 and a standard deviation of 0.67. Therefore, this statement falls within the domain of the strongly agree trend, meaning that most respondents agree that ICT helps to improve the quality of performance, as evidenced by the professors' responses that ranged between agree and strongly agree.

Statement No. 3 ranks second with an arithmetic mean of 4.33 and a standard deviation of 0.7030. This statement falls within the ‘strongly agree’ category according to the five-point Likert scale, indicating that the majority of the respondents believe that the digital systems and equipment provided by the university help teachers in performing their teaching tasks. Furthermore, the standard deviation indicates that there is no significant difference in the participants' responses regarding this statement.

Statement No. 2 came in third place with an arithmetic mean of 4.17 and a standard deviation of 0.864, indicating that it is part of a positive trend. Indeed, the majority of the respondents believe that the digital systems and devices provided by the university facilitate the process of updating the measurement axes. This finding is explained by the fact that the majority of teachers use these digital tools to update the content.

Statement No. 8 ranked fourth with a mean of 4.07 and a standard deviation of 0.632. This statement received a satisfaction rating, as it falls within the third category on the five-point Likert scale. This indicates that the majority of the respondents agree that digital systems and equipment help teachers in determining the curriculum. In fact, most teachers rely on these digital systems and equipment to revamp their teaching programmes.

Statement 5 ranked fifth with an arithmetic mean of 3.16 and a standard deviation of 1.180. These values indicate that there is a large variation in the respondents' opinions regarding this statement, which takes a neutral direction. In fact, the respondents were neutral regarding the university's allocation of financial resources to acquire digital systems and equipment that would assist teachers in obtaining, publishing and accessing scientific documents.

Statement No. 4 ranked sixth with a weighted mean of 2.91 and a standard deviation of 0.967. Therefore, this statement falls into the category of neutrality, indicating that the sample members have different opinions about the university's efforts to equip educational and scientific facilities with the latest digital technologies to improve work methods. The justification for this sixth position lies in the observation of the lack, not the absence, of equipping the various educational and scientific infrastructures with modern communication technologies.

Statement 6 came in seventh place, with an estimated arithmetic mean of 2.87 and a standard deviation of 1.134. This statement received a neutral rating because respondents were ambivalent about the university's ability to motivate and encourage teachers to use modern presentation tools and software in teaching. This means that there is a convergence between the levels of agreement and disagreement about the content of the statement. This discrepancy can be explained by the fact that there is some form of motivation and encouragement, but not at the expected level.

Statement 7 ranked eighth, with a weighted mean of 2.31 and a standard deviation of 1.013. This statement was in an area with an unfavourable trend. The statement focused on the university's efforts in developing the skills of faculty members through training aimed at improving their effectiveness in using modern presentation tools and programmes.

5) A study (Priyanka Pandey, Komilla Thapa, 2018) Role of the Teacher's in Academic Performance of Students

Table No.1 Correlation between Role of the Teacher and Academic Performance.

Variable	Marks Of High School	Marks Of HighSchool In Math's	Marks Of Half Yearly	Marks Of Half Yearly Math's
Role Of The Teacher	.050	158	251**	127
Teaching Styles	.091	209	281**	172
Teacher's Motivation	-.029	021	259**	060
Teacher Encouragement	.146	199*	170	136
Classroom Management	-.059	056	115	92
Teacher Student Interaction	0.022	0.123	.119	.003

Note ***p<.001, **p<.01, *p<.05

Table shows that correlation between academic performance and role of the teacher scale. For
academic performance of students correlation between their marks of high schools in maths,
and Marks of half yearly was found to be significant.

Tables No.2 School wise Mean and SD of role of the teacher's scale and its dimensions.

	Gender		
Variable	**Government Mean SD**	**Semi government Mean SD**	**t**
Role Of The Teacher	111.83 11.87	107.57 13.50	1.85ns
Teaching Styles	27.54 2,97	25.39 4,05	3,32***
Teacher's Motivation	27.53 3.78	26.70 3,38	1,26ns
Teacher Encouragement	22,35 3.45	21.37 3.50	1.75ns

Classroom Management	19.82 2.86	19.25 3.20	.668ns
Teacher-Student Interaction	14.77 2.58	14.94 2.201	.401ns

Note ***p<.001, **p<.01, *p<.05

There was no significant difference found on the role of the teacher scale but teaching styles
significantly show differences in schools.

Table No.3 Gender wise Mean scores on the role of the teacher and its dimension.

Variable	**Gender**		**T**
	Boys	**Girls**	
	Mean SD	**Mean SD**	
Role Of The Teacher	105.97 13.13	113.48 11.22	3.41***
Teaching styles	25.47 4.21	27.45 2.8041	3.03**
Teacher's Motivation	26.80 3.75	27.45 3.45	.963ns
Teacher encouragement	20.80 3.52	22.84 3.17	3.35***
Classroom Management	18.61 3.17	20.28 2.67	3.15**
Teacher-student interaction	14.24 2.30	15.47 2.34	3.41**

Note ***p<.001, **p<.01, *p<.05

Following this gender differences were examined and are given in this table no.2 Specifically
this result indicates that girls scores higher on the teaching styles dimensions of the role of the teacher scale. There was a significant difference found on role of the teacher scale. On the whole, girls revealed higher on this scale than boys, and differences were also significant. On the whole minor differences were observed in case or dimension of teacher's motivation.

The findings of the present study and researches done will form the basis for discussion. This discussion will focus on the principal findings and attempt to explicate the objectives of the study. Main finding of the present study listed that:

first finding is that role of the teacher was positively correlated to actual academic performance (obtained from school records). Positive correlations were found between academic performance and role of teacher scale and its dimension. There are found to be significant gender differences in the perception of the teacher role. Vis-à-vis boys, girls obtained higher scores on both scales and perceived role of the teacher in a positive manner. Next finding is that no significant school differences were found. One hypothesis of the present study is not proved that students of different school will show significant differences in their scores and role of teacher scale.

In the case of role of the teacher scale the difference was found to be significant across theschools. Across the schools, student's perception of the teacher was found to be moderate.This indicates girl's students of DP & GGIC had moderate scores on roll of the teacher ascompared to boys' student. Scores of DP Girls College are highest on class roommanagement teacher encouragement and teacher student interaction which suggest that they perceived their teacher as been friendly and offering guidance and support and acceptance.

School wise analysis on the role of the teacher and its dimension (Table 2) found to be nonsignificant differences, but it specifically considered dimension then result showed that government and semi government, showed significant differences on the teaching styles dimension. Students of Government College they scored greater teaching styles as compare to semi government school. For decades, researches have found that the public school students receive higher grades in college than do private school. Students **(Lathsop & Kieffer,1959; McArthur,1954, Seltzer,1948; Shuey, 1980)** students of public school they perceived their teacher greater positivel as compared to semi government school and therefore students of Government College perceived teaching styles positively.

A final correlation was obtained from the scale. Correlates for role of the teacher scale of means correlation between role of the teacher. Correlates for each scale was obtained and it was found that marks of half yearly by students was the one factor that correlated with many of the scale dimension teaching style and teacher's motivate correlated positively with the marks of half yearly which implies that these dimensions are facilitating them in their academic performance. Along with this correlation between teacher encouragement and marks of high

school in math's (student's academic performance) was obtained which was found to be significant. This indicates that teacher encouragement facilitating the academic performance of students.

In the case of parental influence scale the table show that academic performance of student marks of half yearly and marks of half yearly math's were positively correlated with the role of the teacher at mean there was to be positive relationship between academic performance and role of the teacher. For this finding reason behind it. At the last correlation between academic performance and the role of the teachers findings that they are significantly correlated each other it means a positive relation between the score obtained on the role of the teacher scale and actual academic performance of students. Underachievers show negative attitude towards teacher which is in line with the findings of Maitra, K. 1985 reflecting on indifferent attitude of underachievers towards the quality of teaching, type of teachers or teaching strategies. Teacher influences is important. Teacher with lack of understanding and acceptance after provides a psychological climate with precipitates negative attitudes.

Scientific Concept and Evolution of Artificial Intelligence

1. Definition of Artificial Intelligence: Technical and Managerial Perspectives

Artificial Intelligence (AI) refers to the development of computer systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, problem-solving, perception, and language understanding (Russell & Norvig, 2020). Technically, AI includes a wide range of subfields such as machine learning, natural language processing, computer vision, and robotics.

From a managerial perspective, AI is viewed as a strategic resource that enhances decision-making, optimizes business operations, and fosters innovation. In higher education, AI is increasingly used to support administrative efficiency, automate routine academic tasks, and personalize student learning experiences (Davenport & Ronanki, 2018).

2. Historical Overview: From Symbolic Programming to Deep Learning

The evolution of AI can be traced back to the 1950s, when pioneers like Alan Turing and John McCarthy laid the foundations of machine intelligence. Early AI systems were based on symbolic programming, using explicitly defined rules to simulate reasoning processes. These systems achieved success in structured environments but struggled with real-world complexity (McCorduck, 2004).

In the 1980s and 1990s, expert systems dominated the field. However, their limitations in scalability and adaptability led to a shift toward statistical methods and machine learning. The 2010s witnessed the rise of deep learning, characterized by neural networks with many layers that could process massive datasets. Breakthroughs in computational power, availability of big data, and advancements in algorithms drove this transformation (LeCun, Bengio & Hinton, 2015).

3. Narrow AI vs General AI

Narrow AI, also known as weak AI, refers to AI systems designed to perform specific tasks, such as image recognition, language translation, or recommendation generation. These systems operate within a limited context and cannot generalize beyond their training (Goertzel & Pennachin, 2007).

In contrast, General AI (strong AI) represents the theoretical goal of creating machines with human-level intelligence capable of understanding, learning, and applying knowledge across a wide range of domains. General AI remains largely hypothetical and poses significant technical, ethical, and philosophical challenges.

4. AI and Digital Transformation in Higher Education Institutions

AI plays a critical role in advancing digital transformation across academic institutions. Universities are integrating AI into learning management systems, administrative services, and research analytics to enhance agility, data-informed decision-making, and personalized education (Selwyn, 2019).

AI tools such as chatbots for student support, automated grading systems, and predictive analytics for student performance are reshaping the higher education landscape. These technologies support the development of agile, smart universities that respond quickly to technological and societal changes.

5. AI Technologies Used in Educational Institutions

AI technologies have been adopted in various areas of educational institutions to enhance learning, teaching, and administrative efficiency. In the classroom context, machine learning algorithms are used for adaptive learning platforms, which personalize educational content based on student behavior and progress. These platforms help address individual learning needs and support differentiated instruction (Holmes, Bialik & Fadel, 2019).

Chatbots and virtual assistants are deployed in student services to provide round-the-clock support for queries related to registration, course requirements, and

academic calendars. Additionally, learning analytics platforms analyze data from Learning Management Systems (LMS) to predict student success and provide actionable insights to instructors and advisors.

In terms of assessment, automated grading systems use natural language processing and machine learning to evaluate essays, quizzes, and even open-ended responses, thus saving instructors time and providing instant feedback to students. Facial recognition and proctoring tools have also been implemented for securing online examinations, though they raise ethical and privacy concerns.

Table 2: Common AI Tools in Educational Settings

AI Tool	Primary Function	Impact on Academic Practice
Adaptive Learning Platforms	Personalized instruction	Improves student engagement and retention
Chatbots	Student support automation	Enhances responsiveness and service quality
Automated Grading	AI-based assessment	Reduces workload and ensures timely feedback
Learning Analytics	Data-driven decision support	Identifies at-risk students and supports interventions

6. AI as a Mediator between Organizational Agility and Faculty Performance

Organizational agility refers to the ability of an institution to rapidly adapt to internal and external changes with speed and flexibility. AI serves as a mediator in this context by enabling agile structures, real-time feedback mechanisms, and data-informed decision-making (Bughin et al., 2018).

For university faculty, AI tools provide support in curriculum planning, workload management, and teaching innovation. Faculty members who use AI-driven dashboards can monitor student performance and tailor instruction accordingly, thus improving educational outcomes.

AI also facilitates agility by promoting asynchronous learning modes, enabling instructors to reach wider audiences and adapt pedagogical methods based on continuous feedback. Furthermore, through automation of repetitive tasks such as

grading, scheduling, and data entry, faculty can focus on high-value activities such as mentoring and research.

The mediating role of AI is particularly significant in crisis contexts, such as during the COVID-19 pandemic, when universities had to pivot rapidly to online education. Institutions with mature AI infrastructure were able to maintain continuity, monitor performance, and adjust strategies dynamically (Daniel, 2020).

Technically, AI refers not only to machine learning and automation but encompasses a broad interdisciplinary field including neuroscience, cognitive science, and logic-based systems. Subfields such as symbolic AI, statistical learning, and neural computation have historically competed and complemented one another, leading to a rich evolution of tools and methodologies.

From a managerial angle, the strategic deployment of AI reflects the shift toward knowledge-based economies where data becomes the new capital. Managers must balance technical feasibility, ethical considerations, and organizational readiness to adopt AI innovations. Decision-makers must also consider return on investment (ROI), operational risks, and the long-term adaptability of AI systems in complex institutional settings.

The history of AI can be divided into several waves or 'seasons' of optimism and disillusionment, often referred to as 'AI winters'. During the 1970s and late 1980s, funding and interest in AI research declined due to unmet expectations. However, new breakthroughs such as backpropagation in neural networks and Bayesian approaches in probabilistic reasoning revitalized interest in the 1990s.

Deep learning, driven by large-scale annotated datasets (e.g., ImageNet) and GPU acceleration, gained prominence due to its unprecedented performance in vision, speech, and natural language tasks. Frameworks such as TensorFlow and PyTorch further democratized access to deep learning, allowing academic institutions and private enterprises to scale AI projects significantly.

While narrow AI systems are widely deployed in commercial products like Google Translate and Amazon Alexa, general AI (AGI) remains theoretical. Research in AGI explores cognitive architectures, reinforcement learning in dynamic environments, and transfer learning where knowledge acquired in one domain can be applied to another.

The debate over AGI includes philosophical questions about consciousness, ethics, and autonomy. Experts warn about potential risks of developing AGI without proper safety and governance mechanisms. Initiatives like OpenAI and the Future of Life Institute advocate for aligned AI systems that uphold human values.

Digital transformation in academia entails more than adopting technology—it requires rethinking pedagogy, curriculum design, institutional culture, and governance. AI supports this shift by enabling micro-credentialing, competency-based education, and real-time performance tracking.

Universities increasingly rely on AI for institutional planning, using tools like predictive analytics for enrollment forecasting, space utilization, and financial modeling. These changes contribute to creating agile universities capable of continuous adaptation to technological, social, and economic pressures.

Intelligent tutoring systems (ITS) have shown promise in STEM fields by offering interactive problem-solving environments tailored to individual student levels. These systems not only assess student input but also provide hints and feedback, mimicking the behavior of human tutors.

Other technologies include automated content generation (e.g., quizzes, summaries), plagiarism detection using NLP techniques, and virtual reality (VR) simulations powered by AI. These innovations enhance experiential learning and reduce cognitive overload by adjusting content delivery formats dynamically.

Organizational agility requires decentralized decision-making, which AI can facilitate by delivering insights directly to faculty and administrative units. For example, AI-generated performance dashboards empower instructors to make evidence-based adjustments in real-time.

AI also mediates communication flows by integrating messaging systems, student feedback, and calendar tools, thereby reducing administrative friction. Through intelligent automation, faculty members are freed from repetitive tasks, allowing them to invest in creativity, mentorship, and interdisciplinary collaboration.

AI also encompasses a sociotechnical dimension, requiring alignment between humans, machines, and institutional structures. In management theory, this has given rise to the concept of 'augmented intelligence', which emphasizes the complementarity between human intuition and algorithmic analysis. Successful AI

adoption depends not only on computational capabilities but also on leadership, organizational culture, and stakeholder engagement.

Educational leaders are tasked with ensuring ethical deployment, managing technological change, and nurturing a digitally competent academic workforce. This means that AI is not just a tool but a driver of cultural transformation, redefining the roles of faculty, administrators, and students alike.

Modern AI owes its momentum to interdisciplinary efforts, where fields like linguistics, behavioral economics, and neuroscience have enriched AI algorithms. Cognitive architectures such as ACT-R and SOAR attempted to simulate how humans learn and reason, influencing early AI design. These efforts, though limited in scope, laid the groundwork for more flexible learning models.

From 2015 onward, breakthroughs in natural language processing—especially with transformer architectures like BERT and GPT—have dramatically increased the capabilities of machines to understand and generate human-like language. These advancements have opened new possibilities for educational content generation, language tutoring, and academic research support.

The development of general AI remains an ambitious goal, with research focusing on mechanisms like meta-learning, zero-shot learning, and continual learning. These approaches aim to mimic the human capacity to generalize knowledge across tasks and environments. However, significant challenges remain, including the integration of reasoning, perception, and memory into a single coherent system.

Scholars and policymakers are increasingly discussing 'AI alignment', ensuring that the goals and actions of intelligent systems are consistent with human values. Ethical dilemmas such as moral responsibility, accountability for machine decisions, and long-term existential risks continue to fuel academic and policy debate.

AI adoption in universities has prompted the redefinition of educational quality metrics. Instead of focusing solely on standardized test scores or course completion, AI allows institutions to track learning progression, skill acquisition, and student engagement in more granular and meaningful ways.

Faculty development programs now include AI literacy training, enabling instructors to integrate AI into course design, grading strategies, and research

workflows. Libraries, too, are being transformed through intelligent cataloging systems, automated reference tools, and data-driven collection management.

Another emerging area is emotion recognition technology, where AI algorithms detect student emotions via facial expressions or voice modulation. Such systems aim to provide real-time feedback to instructors about classroom engagement, although they also raise concerns regarding consent and surveillance.

Speech recognition and automated transcription tools assist in converting lectures into searchable text, aiding accessibility for students with disabilities and those studying in multilingual environments. Meanwhile, AI-supported research tools are helping students summarize articles, generate citations, and even suggest research questions.

The mediating role of AI also manifests through its support in crisis management and institutional continuity planning. For instance, AI-driven dashboards help university leadership monitor faculty workloads, student success indicators, and infrastructure usage, allowing for rapid reallocation of resources.

Moreover, AI fosters cross-departmental collaboration through shared digital platforms that integrate data across academic, financial, and operational units. This promotes a more cohesive institutional response to external challenges such as changing accreditation requirements, demographic shifts, or labor market demands.

SECTION TWO: CASE STUDY METHODOLOGY AND TESTING OF THE SCALE TOOL

Through this research, we aim to clarify the organizational aspect of the study by addressing the planning and design of the study tool. This involves identifying the data collection instrument and the key variables it covers, followed by outlining the statistical methods used to test the tool. Data were processed and analyzed using SPSS 26.0, Excel 2016, and SmartPLS.

The following statistical tools were employed:

- Percentages and frequencies to describe the sample

- Arithmetic mean, relative mean, and standard deviation

- Cronbach’s Alpha to test reliability

- Shapiro-Wilk test for normality

- Alpha Root for construct validity

- Chi-square test for independence

- Independent samples T-test for comparing two groups

- One-way ANOVA to assess differences between groups

SECTION ONE: Research Methodology and Design

Scientific research requires a clear methodology to identify and analyze the research problem. A scientific study is built upon foundational methods that guide the researcher through data collection and analysis. In this study, we adopted a descriptive approach, which allows for the accurate and systematic examination of a phenomenon in its real-world context.

Additionally, we relied on the statistical method to measure the phenomenon under investigation by analyzing the frequency distributions of responses and interpreting them statistically.

As defined by Al-Hamdani, the descriptive method is: "a method that seeks to describe current or contemporary events and phenomena. It represents an organized form of interpretation that provides data on specific characteristics requiring identification of the participants and the tools used to collect the data."

We relied on two main sources of data:

- Secondary Sources: Used for the theoretical framework, including books, articles, prior research, and internet resources related to the topic.

- Primary Sources: Used for the analytical part of the study, including the distribution of a questionnaire to employees at the Faculty of Economics in Laghouat. The data were analyzed using SPSS and SmartPLS to test the study's hypotheses.

The questionnaire is defined as a method for collecting information and can be used at either a broad or narrow scope. It varies in length and complexity, and great care must be taken in developing its items and ensuring clear and complete responses. It is essential that the study questions and hypotheses are well defined to construct a valid instrument.

SECTION TWO: Instrument Construction and Validity

We developed the questionnaire to examine 'Artificial Intelligence as a Mediator in the Role of Organizational Agility on Enhancing Teacher Performance in Universities – A Case Study of the Faculty of Economic, Management and Commercial Sciences in Laghouat.'

Steps in constructing the questionnaire:

1. Reviewing relevant literature and previous studies to inform item development.

2. Consulting the supervisor and faculty members to determine the main axes and items.

3. Defining the major axes and corresponding items.

4. Designing the initial version of the questionnaire (see Appendix 02).

5. Reviewing the draft with the study supervisor.

6. Presenting the questionnaire to a panel of experts (see Appendix 01).

7. Revising items based on expert feedback, resulting in a final version with 34 items (see Appendix 03).

Instrument Validity:

As defined by Al-Otaibi, instrument validity is "the extent to which the measurement tool or procedure accurately measures what it is intended to measure." In other words, if the tool successfully measures the intended construct, it is considered valid.

To ensure validity, the questionnaire was reviewed by a panel of five faculty experts to assess the clarity and relevance of each item. Based on their feedback, necessary revisions were made, and the final version of the questionnaire was approved for deployment (see Appendix 0).

Section Three: Presentation of the Population and Study Sample Characteristics

In this section, we present and analyze the characteristics of both the study population and the selected sample, in order to understand the general structure of the targeted group and to define the key dimensions that contribute to interpreting the research results.

1- Study Population:

The study population consists of faculty members from the Faculty of Economic Sciences at the University of Laghouat, from various academic ranks (Assistant Professor, Lecturer, Full Professor). This population was selected due to its direct relevance to the research topic and its active role in the academic and pedagogical environment of the faculty.

Table (II-1): Distribution of the Study Population by Directorate and Centers

Directorate / Center	***Number of Professors***	***Percentage (%)***
Directorate of Economic Sciences	XX	XX %
Directorate of Management Sciences	XX	XX %
Graduate Studies Center	XX	XX %
Total	XX	**100 %**

(Note: Actual figures to be filled based on collected data)

2- Study Sample:

The study sample was selected using a simple random sampling method from the population of professors at the Faculty of Economic Sciences at the University of Laghouat, with the aim of ensuring representation across different categories and academic ranks, and to maintain neutrality in data collection. The sample size was determined based on the study's requirements and field accessibility, ensuring that the results can be generalized to the target academic population.

Table (II-2): Distribution of the Study Sample by Directorate and Centers

Directorate / Center	**Number of Sample Members**	**Percentage (%)**
Directorate of Economic Sciences	**XX**	**XX %**
Directorate of Management Sciences	**XX**	**XX %**
Graduate Studies Center	**XX**	**XX %**
Total	**XX**	**100 %**

Source: Prepared by the two students based on RH

The Field Sample of the Study

To determine the appropriate and representative sample size for the study population, we relied on the well-known tool “The Survey System,” setting a confidence level of 95% and a margin of error of 2.5%. The population size was set at 126 individuals. The formula used is as follows:

$$n = \frac{tp\ 2 \times P(1 - P) \times N}{tp\ 2 \times P(1 - P) + (N-1) \times y2}$$

Where:

- N: population size, estimated at 126

- n: sample size (to be determined)

- P: the assumed proportion of the phenomenon in the population; Morgan & Krejcie suggest using 0.50

- y: margin of error, also suggested by Morgan & Krejcie as 0.05

- tp^2: the tabulated value of t^2 at one degree of freedom and the desired confidence level, which Morgan & Krejcie estimate at 3.841

By applying the above formula and values, the minimum required sample size was found to be 57 participants.

In early February 2025, we distributed 10 printed questionnaires, of which 8 were returned and one was rejected. The rest of the responses were collected through the electronic questionnaire. It is worth noting the high level of cooperation among the faculty, which allowed us to exceed the minimum required sample size, reaching 57 professors across various departments in the Faculty of Laghouat. This represents an acceptable response rate of 15.32% of the total population.

To further define the sample, we analyzed the first section of the questionnaire, which included personal information describing the characteristics of the study population.

Descriptive Study

1. Gender:

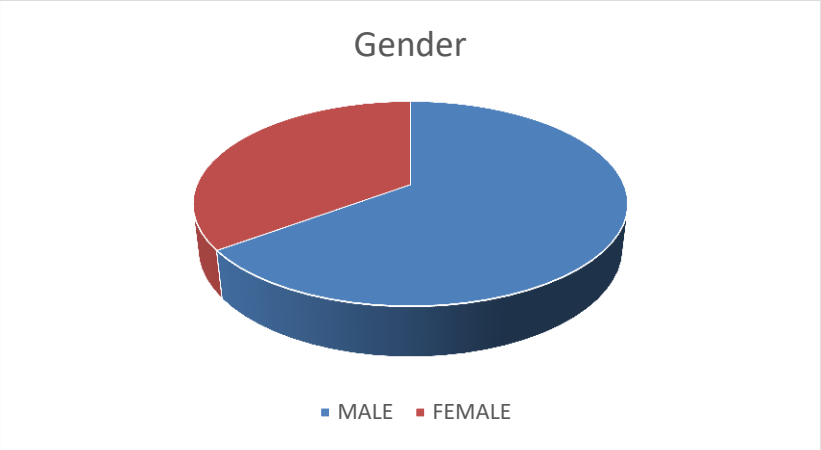
From a total of 56 processed questionnaires, the following table was obtained:

Table (II-3): Distribution of the Study Population by Gender

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	37	64,9	64,9	64,9
	FEMALE	20	35,1	35,1	100,0
	Total	57	100,0	100,0	

Source: Prepared by the two students based on SPSS 26.0 outputs.

Figure (II-1): Composition of the Study Population by Gender



Source: Prepared by the two students based on SPSS 26.0 outputs.

The data presented in the table refers to a sample of professors from the Faculty of Economic Sciences at the University of Laghouat. A total of 57 valid questionnaires were processed, distributed across two gender categories: male and female.
According to the results:
- 37 participants identified as male, representing 64.9% of the total sample.
- 20 participants identified as female, accounting for 35.1% of the sample.

These figures indicate a male-dominated academic environment, with men making up nearly two-thirds of the surveyed population. This gender imbalance may reflect the broader demographic distribution of academic staff in the faculty, or potentially in Algerian higher education institutions in general.

From a research perspective, this gender distribution is important, as it may influence perspectives, attitudes, and responses to various aspects of the study—particularly if the research addresses topics related to communication, leadership, or decision-making.

Furthermore, the cumulative percentage reaches 100%, confirming the integrity and completeness of the gender-related responses in the sample.

2. Educational Level

Based on a total of 56 processed questionnaires, the following results were obtained:

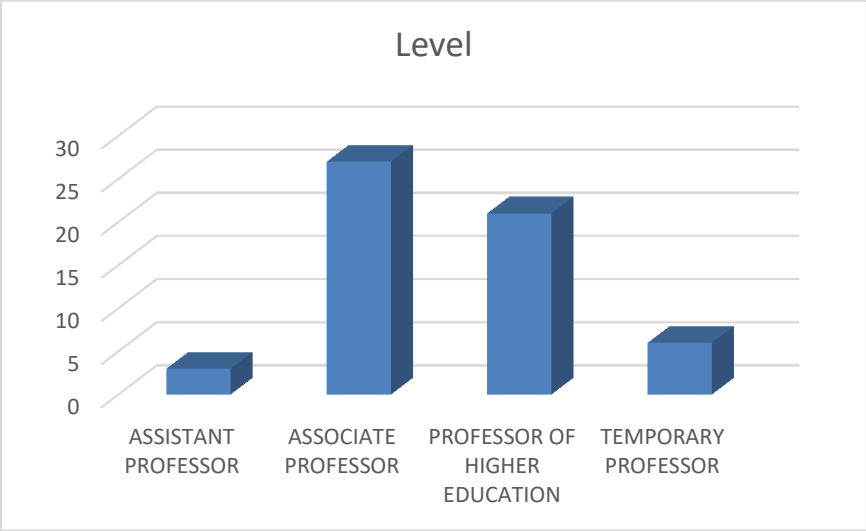
Table (II-4): Distribution of the Study Population by Educational Level

LEVEL					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ASSISTANT PROFESSOR	3	5,3	5,3	5,3
	ASSOCIATE PROFESSOR	27	47,4	47,4	52,6

	PROFESSOR OF HIGHER EDUCATION	21	36,8	36,8	89,5
	TEMPORARY PROFESSOR	6	10,5	10,5	100,0
	Total	57	100,0	100,0	

Source: Prepared by the two students based on SPSS 26.0 output

Figure (II-2): Composition of the Study Population by Educational Level



Source: Extracted from Excel 2016 based on questionnaire results.

Analysis of the Educational Level Variable

From the table and figure above, we observe that the highest proportion of participants hold the rank of Associate Professor (47.4%), followed by Professors of Higher Education (36.8%). Temporary Professors represent 10.5%, while Assistant Professors are the least represented at 5.3%.

This distribution reflects a strong presence of mid- to senior-level academic staff in the sample, which may enrich the quality of responses due to their professional and pedagogical experience. On the other hand, the lower proportion of Assistant Professors and temporary staff may highlight institutional dynamics regarding career development and academic integration within the Faculty of Economic Sciences.

3. Years of Service

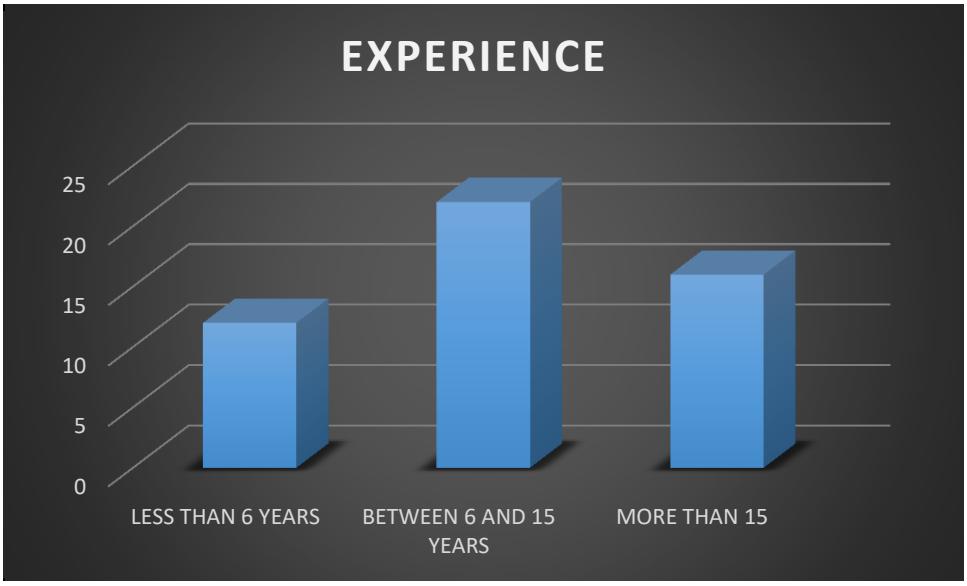
Based on a total of 56 processed questionnaires, the following results were obtained:

Table (II-5): Distribution of the Study Population by Years of Service

EXPERIENCE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	LESS THAN 6 YEARS	12	21,1	24,0	24,0
	BETWEEN 6 AND 15 YEARS	22	38,6	44,0	68,0
	MORE THAN 15	16	28,1	32,0	100,0
	Total	50	87,7	100,0	
Missing	System	7	12,3		
Total		57	100,0		

Source: Prepared by the two students based on SPSS 26.0 outputs.

Table (II-6): Composition of the Study Population by Years of Service



Source: Extracted from Excel 2016 based on questionnaire results.

Analysis of the Years of Service Variable

As shown in the table and figure above, the highest proportion of participants (44%) have between 6 and 15 years of service. This is followed by those with more than 15 years of experience (32%), while those with less than 6 years represent the smallest group (24%).

This distribution suggests that the study sample includes a substantial number of mid-career and experienced faculty members, which may enhance the credibility of the responses due to their prolonged exposure to academic and institutional dynamics. The presence of early-career professors, though lower, adds diversity and balance to the perspectives within the sample.

It is worth noting that 7 responses were missing from this variable, representing 12.3% of the total sample, which were recorded as system-missing.

4. Marital Status

Based on a total of 57 processed questionnaires, the following results were obtained:

Table (II-7): Distribution of the Study Sample by Marital Status

SITUATION					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SINGLE	16	28,1	28,1	28,1
	MARRIED	38	66,7	66,7	94,7
	OTHER	3	5,3	5,3	100,0
	Total	57	100,0	100,0	

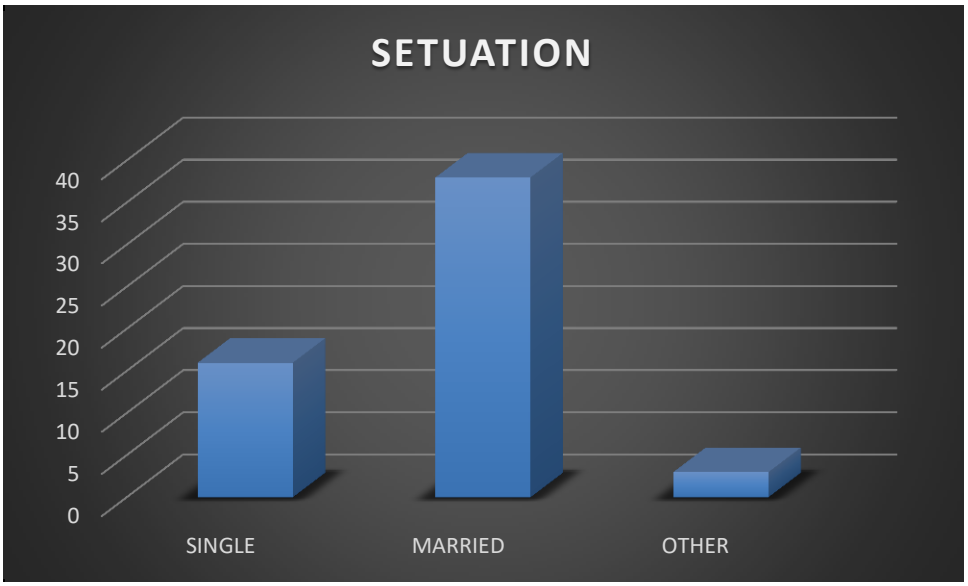


Figure (II-3): Distribution of the Study Sample by Marital Status

Source: Prepared by the two students based on SPSS 26.0 outputs

Analysis of the Marital Status Variable

The table shows that the majority of respondents (66.7%) are married, while 28.1% are single, and a small proportion (5.3%) reported their status as 'Other'.

This distribution highlights a predominance of married individuals within the academic staff surveyed. This could potentially influence aspects of professional stability, work-life balance, and perceptions of institutional responsibilities.

The presence of different marital statuses adds diversity to the sample and may allow the research to capture a broader range of attitudes and experiences within the academic environment.

Chapter Three: General Trends of the Questionnaire Dimensions

Section One: The Five-Point Likert Scale

The length of the intervals in the five-point Likert scale was determined by calculating the range between the values of the scale (5 - 1 = 4), and then dividing it by the number of categories, which is 5. This gives the interval length: 4 / 5 = 0.80. This interval value is then added to the lowest value in the scale to define the upper limit of each response category. Accordingly, the ranges of the Likert scale categories were established as shown in the following table:

Table (II-8): Mean Score Ranges Used to Define Response Trends

Degree of Agreement	Mean Score Range
From 1.00 to 1.80	NEVER
Above 1.80 to 2.60	RARELY
Above 2.60 to 3.40	SOMETIMES
Above 3.40 to 4.20	MOSTLY
Above 4.20 to 5.00	ALWAYS

Source: Prepared by the student based on the five-point Likert scale model.

To interpret the study results and assess the level of response, we relied on the ranking of mean scores at both the domain and item levels of the questionnaire. The general trend for each statement was determined based on the predefined intervals. The statistical tools used include arithmetic mean, standard deviation, percentages, and frequencies to assess the degree of agreement.

.1Analysis of the Trends of X Statements

1.1Analysis of the Trends for Dimension X1 Flexibility

Table (II-9): Respondents' Trends Toward Statements of the First Dimension (Flexibility)

Q	NEVER		RARELY		SOMETIMES		MOSTLY		ALWAYS		Mean	Std. Deviation	Direction
	F	%	F	%	F	%	F	%	F	%			
1	6	10.5	7	12.3	15	26.3	18	31.6	11	19.3	3,37	1,23	SOMETIMES
2	3	5.3	4	7	13	22.8	27	47.4	10	17.5	3,65	1,02	MOSTLY
3	4	7	5	8.8	9	15.8	29	50.9	10	17.5	3,63	1,09	MOSTLY
4	5	8.8	4	7	16	28.1	22	38.6	10	17.5	3,49	1,13	MOSTLY
5	4	7	8	14	10	17.5	23	40.4	12	21.1	3,54	1,18	MOSTLY
(Flexibility) Dimension											3,53	,99	MOSTLY

Source: Prepared by the student based on the five-point Likert scale model.

Interpretation of the First Dimension (Flexibility)

From the table above, it is evident that the average mean of the first dimension (Flexibility) is 3.53, which corresponds to the level of agreement 'MOSTLY'. Among the statements, Statement 2 shows the highest consistency (lowest standard deviation of 1.02), while Statement 1 shows the lowest consistency (highest standard deviation of 1.23). This indicates that respondents generally tend to agree with the statements related to flexibility, with slight variability in their evaluations.

1.2 Analysis of the Trends for Dimension X2

Table (II-10): Respondents' Trends Toward Statements of the Second Dimension (Continuous Learning)

Q	NEVER		RARELY		SOMETIMES		MOSTLY		ALWAYS		Mean	Std. Deviation	Direction
	F	%	F	%	F	%	F	%	F	%			
6	3	5.3	9	15.8	9	15.8	24	42.1	12	21.1	3,58	1,14	MOSTLY
7	2	3.5	6	10.5	8	14	26	45.6	15	26.3	3,81	1,06	MOSTLY
8	2	3.5	3	5.3	14	24.6	22	38.6	16	28.1	3,82	1,02	MOSTLY
9	2	3.5	4	7	13	22.8	23	40.4	15	26.3	3,79	1,03	MOSTLY
10	2	3.5	5	8.8	9	15.8	25	43.9	16	28.1	3,84	1,04	MOSTLY
Dimension Continuous Learning											3,76	,95	MOSTLY

Source: Prepared by the student based on SPSS 26.0 outputs.

Interpretation of the Second Dimension (Continuous Learning)

From the above table, it is evident that the highest consistency within dimension X2 is observed in Statement 8, which has a mean of 3.82 and a standard deviation of 1.02. On the other hand, Statement 6 shows the lowest consistency, with a standard deviation of 1.14. The overall average for this dimension is 3.76, indicating a general agreement level of 'MOSTLY'.

This reflects a strong inclination among faculty members toward continuous learning, with a generally consistent pattern of responses across the five statements that make up this dimension.

1.3 Analysis of the Trends for Dimension X3

Table (II-11): Respondents' Trends Toward Statements of the Third Dimension

Q	NEVER		RARELY		SOMETIMES		MOSTLY		ALWAYS		Mean	Std. Deviation	Direction
	F	%	F	%	F	%	F	%	F	%			
11	7	12.3	8	14	12	21.1	22	38.6	8	14	3,28	1,23	SOMETIMES
12	5	8.8	7	12.3	18	31.6	22	38.6	5	8.8	3,26	1,07	SOMETIMES
13	5	8.8	10	17.5	12	21.1	19	33.3	11	19.3	3,37	1,23	SOMETIMES
14	15	26.3	20	35.1	13	22.8	8	14	1	1.8	2,30	1,06	RARELY
15	26	45.6	15	26.3	12	21.1	4	7	0	0	1,89	,976	RARELY
Dimension X3											2,82	,82	SOMETIMES

Source: Prepared by the student based on SPSS 26.0 outputs.

Interpretation of the Third Dimension

The table above reveals that the overall average for the third dimension is 2.82, which corresponds to the agreement level 'SOMETIMES'. Among the five statements, Statement 13 shows the highest mean (3.37) and Statement 15 shows the lowest (1.89), indicating lower agreement.

Statements 11, 12, and 13 generally fall under the 'SOMETIMES' category with moderate variability, while Statements 14 and 15 received lower levels of agreement, falling into the 'RARELY' range. This indicates some divergence in participants' responses within this dimension, suggesting that perceptions regarding the themes covered by Dimension X3 are more varied and possibly less favorable compared to previous dimensions.

.4 Analysis of the Trends for Dimension X4 (AI as Mediator)

Q	NEVER		RARELY		SOMETIMES		MOSTLY		ALWAYS		Mean	Std. Deviation	Direction
	F	%	F	%	F	%	F	%	F	%			
16	2	3.5	13	22.8	16	28.1	21	36.8	5	8.8	3,25	1,02	SOMETIMES
17	5	8.8	7	12.3	15	26.3	23	. 40.4	7	12.3	3,35	1,12	SOMETIMES
18	6	10.5	4	7	21	36.8	16	28.1	10	17.5	3,35	1,17	SOMETIMES
19	4	7	9	15.8	18	31.6	17	29.8	9	15.8	3,32	1,13	SOMETIMES
20	4	7	7	12.3	16	28.1	20	35.1	10	17.5	3,44	1,13	MOSTLY
Dimension X4 (AI as Mediator)											3,25	,923	SOMETIMES

Source: Prepared by the student based on SPSS 26.0 outputs.

Interpretation of the Fourth Dimension (AI as Mediator)

According to the above table, the overall average for the fourth dimension (Artificial Intelligence as a Mediator) is 3.25, which corresponds to the level of agreement 'SOMETIMES'.

Statement 18 demonstrates the least consistency (highest standard deviation: 1.17), indicating greater variability in responses, while Statement 16 is the most consistent (lowest standard deviation: 1.02). This suggests that participants have mixed views on the role of AI as a mediator, with responses distributed across all agreement levels.

The general interpretation indicates moderate agreement with the statements of this dimension, which may reflect the transitional nature of AI adoption in the academic environment.

1.5 Analysis of the Trends for Dimension X5 (Teacher Performance)

Table (12-II): Respondents' Trends Toward Statements of the Fifth Dimension (Teacher Performance)

Q	NEVER		RARELY		SOMETIMES		MOSTLY		ALWAYS		Mean	Std. Deviation	Direction
	F	%	F	%	F	%	F	%	F	%			
22	1	1,8	9	15,8	23	40,4	16	28,1	8	1,4	3,37	0,97	SOMETIMES
23	1	1,8	8	14	17	29,8	22	38,6	9	15,8	3,53	0,98	MOSTLY
24	1	1,8	7	12,3	15	26,3	22	38,6	12	21,1	3,65	1	MOSTLY
25	0	0	3	5, 3	14	24,6	25	43,9	15	26,3	3,91	0,85	MOSTLY
26	2	3,5	8	14	17	29,8	21	36,8	9	15,8	3,47	1,03	MOSTLY
27	3	5,3	5	8,8	20	35,1	24	42,1	5	8,8	3,40	0,96	MOSTLY
28	1	1,8	8	14	18	31,6	24	42,1	6	10,5	3,46	0,92	MOSTLY
29	4	7	7	12,3	19	33,3	21	36,8	6	10,8	3,32	1,05	SOMETIMES
30	3	5,3	11	19,3	13	22,8	21	36,8	9	15,8	3,39	1,13	SOMETIMES
31	1	1,8	6	10,8	15	26,3	24	42,1	11	19,3	3,67	0,97	MOSTLY
32	6	10,5	3	5,3	18	31,6	20	35,1	10	17,5	3,44	1,16	MOSTLY
33	11	19,3	12	21,1	12	21,1	16	28,1	6	10,5	2,89	1,30	SOMETIMES
34	9	15,8	9	15,8	13	22,8	18	31,6	8	14	3,12	1,29	SOMETIMES
Dimension X5 (Teacher Performance)											3,12	1,297	SOMETIMES

Source: Prepared by the student based on SPSS 26.0 outputs

Interpretation of the Fifth Dimension (Teacher Performance)

According to the table above, the overall average for the fifth dimension (Teacher Performance) is 3.12, which corresponds to the level 'SOMETIMES'.

Among the statements, Statement 25 recorded the highest mean (3.91) and the lowest variability (standard deviation = 0.85), indicating strong agreement and consistency. On the other hand, Statement 33 received the lowest average (2.89) and highest standard deviation (1.30), suggesting more divergence in the responses.

This diversity in perception reflects a moderate evaluation of teacher performance, with certain aspects viewed more favorably than others. While the majority of statements lean toward 'MOSTLY', the overall average indicates that responses were not consistently strong across all items in this dimension.

2. Summary of the Overall Trends Across All Dimensions

Table (II-12): Summary of Trends Across All Dimensions

Dimension	Std. Deviation	Mean	Direction
X1	3,53	,99	MOSTLY
X2	3,76	,95	MOSTLY
X3	2,82	,82	SOMETIMES
M	3,25	,923	SOMETIMES
Y	3,12	1,297	SOMETIMES

Source: Prepared by the student based on SPSS 26.0 outputs.

Interpretation of Overall Dimension Trends

The table summarizes the trends across all key dimensions in the study. Dimensions X1 and X2, representing Flexibility and Continuous Learning respectively, showed the highest levels of agreement among respondents, both falling under the 'MOSTLY' category.

In contrast, dimensions X3 (representing a third thematic focus), M (AI as Mediator), and Y (Teacher Performance) scored in the 'SOMETIMES' range. This suggests a moderate overall perception in these areas, possibly indicating more diverse or less favorable experiences among the participants.

Dimension X2 achieved the highest average score (3.76), while dimension X3 recorded the lowest (2.82). This implies that respondents are generally more aligned with the principles of continuous learning than with other aspects assessed in the study.

Chapter Three: Study Results and Hypothesis Testing

After presenting the results of the statistical analysis regarding the mean values and general trends of the respondents' opinions, we now move on to testing the research hypotheses.

First: The Measurement Model

1. Confirmatory Factor Analysis (CFA)

1.1 Model Reliability Testing

To ensure the reliability of the model in Structural Equation Modeling (SEM), calculating Cronbach's Alpha alone is insufficient. Therefore, the following additional tests are used:

a. Factor Loadings (FL): This measures the coherence and consistency of the statements with each other. A factor loading value must exceed at least 70% to be considered acceptable for inclusion in the measurement model.

b. Composite Reliability (CR): This index, which must be greater than 0.7, evaluates the reliability of the construct as a whole, not just individual items as in the case of factor loadings. It reflects the internal consistency among the statements and the overall dimension, similar to Cronbach's Alpha but more advanced.

c. Average Variance Extracted (AVE): This index measures the average proportion of variance captured by the indicators associated with a construct. To demonstrate convergent validity, the AVE must exceed 0.5.

Table (II-13): Composite Reliability and Convergent Validity Indices

Construct Reliability and Validity						
	Dimension	**Q**	**FL**	**CR**	**AVE**	**Aph**
X	**X1**	**Q1**	0,822	**0,94**	**0,76**	**0,92**
		.Q2	0,883			
		Q3	0,905			
		Q4	0,855			
		Q5	0,904			
	X2	**Q6**	0,812	**0,95**	**0,81**	**0,94**
		Q7	0,932			
		Q8	0,932			
		Q9	0,925			
		Q10	0,907			
	X3	**Q11**	0,865	**0,87**	**0,63**	**0,80**
		Q12	0,765			
		Q13	0,848			
		Q14	0,694			
		Q15	**0,567**			
M		**Q16**	0,724	0,93	**0,74**	**0,91**
		Q17	0,878			
		Q18	0,867			
		Q19	0,885			
		Q20	0,942			
		Q21	**0,544**			
Y		**Q22**	0,763	**0,94**	**0,59**	**0,93**
		Q23	0,688			
		Q24	0,690			

	Q25	**0,522**			
	Q26	0,820			
	Q27	0,771			
	Q28	0,769			
	Q29	0,830			
	Q30	0,789			
	Q31	0,737			
	Q32	0,852			
	Q33	0,780			
	Q34	0,780			

Source: Prepared by the two students based on SmartPLS outputs.

To increase the values of Composite Reliability (CR) and Average Variance Extracted (AVE) above the recommended threshold levels, it is necessary to remove the items with outer loadings (Factor Loadings) lower than 0.70. In this case, the following items were excluded from the model: Q25, Q21, and Q15.

Interpretation of the Reliability and Convergent Validity Results

Based on the table and figure above, we observe that all items show Composite Reliability (CR) values above the threshold of 0.70, with the exception of a few items that are slightly below but still very close to the threshold. Therefore, it can be concluded that the measurement tool used in this study is reliable. Even if the analysis were repeated under the same conditions, similar results would be expected, supporting the reliability of the instrument.

Additionally, the AVE values for all dimensions in the model are greater than 0.50. This confirms that the second criterion—convergent validity—has been met, and thus the study model demonstrates good convergent validity.

2. Discriminant Validity

Discriminant validity refers to the assumption that a set of items measures a specific latent construct and not others. In other words, the correlations between items of different constructs should be low, indicating that each construct is distinct and captures its own dimension.

Discriminant validity is assessed through two main indicators:

2.1 Variable Correlation (VC):

This indicator measures the divergence or distance between constructs. The results are presented in the following table:

Table (II-14): Variable Correlation (VC) Matrix

	M	X1	X2	X3	Y
M	0,862				
X1	0,356	0,875			
X2	0,500	0,822	0,903		
X3	0,370	0,558	0,577	0,796	
Y	0,593	0,485	0,490	0,618	0,774

Source: Prepared by the two students based on SmartPLS outputs.

Interpretation of the Discriminant Validity (VC Matrix)

The VC indicator measures the degree to which variables are distinct from one another. The values along the diagonal represent the square root of the AVE for each construct. If the square root of the AVE (i.e., the diagonal value) for a variable is greater than its correlations with other variables, it indicates that the construct is

2.2 Cross Loadings (CL)

Cross Loadings provide a second method to confirm discriminant validity. This indicator measures the extent to which each item correlates more strongly with its own construct than with other constructs. The values in the table below illustrate how well each item is associated with its respective latent variable in comparison to others.

Table (II-15): Cross Loadings (CL) Matrix.

	M	X	X1	X2	X3	Y
Q1	0,225	0,728	0,822	0,670	0,484	0,346
Q10	0,450	0,849	0,743	0,907	0,538	0,426
Q11	0,207	0,635	0,489	0,517	0,865	0,454
Q12	0,270	0,522	0,358	0,382	0,765	0,436
Q13	0,292	0,675	0,536	0,544	0,848	0,558
Q14	0,430	0,537	0,370	0,370	0,694	0,518
Q16	0,724	0,408	0,229	0,448	0,119	0,486
Q17	0,878	0,410	0,200	0,349	0,148	0,372
Q18	0,867	0,543	0,339	0,415	0,350	0,441
Q19	0,885	0,563	0,315	0,408	0,456	0,640
Q2	0,263	0,797	0,883	0,783	0,461	0,402
Q20	0,942	0,644	0,408	0,516	0,420	0,558
Q22	0,563	0,571	0,419	0,452	0,582	0,763
Q23	0,464	0,616	0,458	0,492	0,678	0,688
Q24	0,422	0,525	0,424	0,430	0,498	0,690
Q26	0,324	0,370	0,315	0,251	0,384	0,820
Q27	0,285	0,345	0,273	0,249	0,374	0,771
Q28	0,442	0,329	0,196	0,226	0,343	0,769
Q29	0,627	0,500	0,297	0,415	0,460	0,830
Q3	0,374	0,816	0,905	0,701	0,531	0,436
Q30	0,394	0,508	0,469	0,393	0,426	0,789
Q31	0,377	0,473	0,435	0,364	0,417	0,737
Q32	0,500	0,547	0,414	0,487	0,446	0,852
Q33	0,477	0,439	0,344	0,266	0,484	0,780
Q34	0,459	0,477	0,360	0,347	0,496	0,780
Q4	0,383	0,777	0,855	0,707	0,441	0,445
Q5	0,307	0,815	0,904	0,733	0,523	0,487
Q6	0,532	0,801	0,767	0,812	0,408	0,543
Q7	0,443	0,851	0,744	0,932	0,530	0,424
Q8	0,383	0,841	0,708	0,932	0,579	0,418
Q9	0,455	0,859	0,748	0,925	0,544	0,404

Source: Prepared by the two students based on SmartPLS outputs.

Interpretation of the Cross Loadings

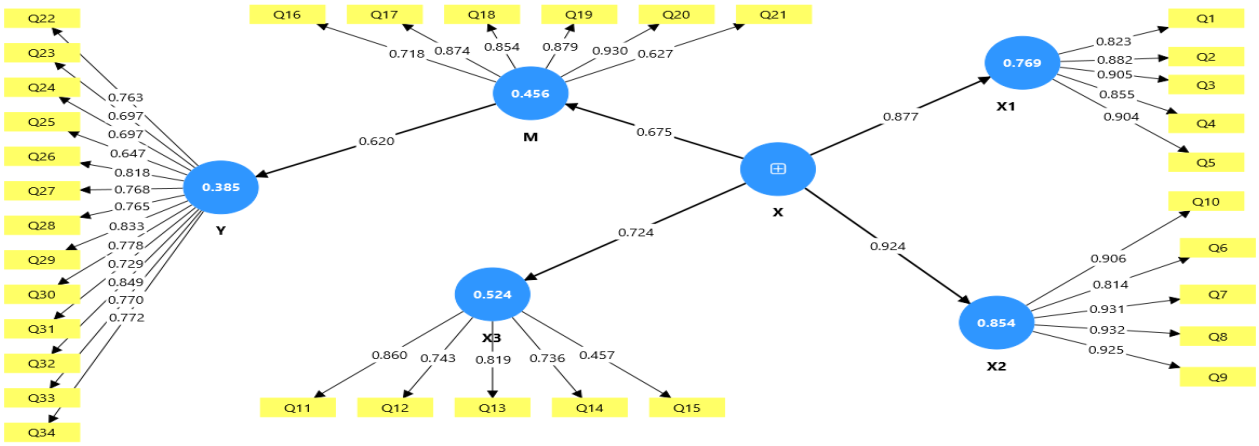
From the values presented in the above table, it is evident that each item shows a higher loading on its respective construct than on the other constructs. This demonstrates that each item is uniquely aligned with its intended dimension, supporting the discriminant validity of the model. These results reinforce the validity of the measurement model and confirm that each item measures a distinct aspect of the theoretical constructs involved in the study.

3. Evaluation of the Structural Model Validity

After evaluating the quality and validity of the measurement model using tests for convergent validity and discriminant validity, we now proceed to the most crucial part of the structural equation modeling process: evaluating the validity of the structural model itself.

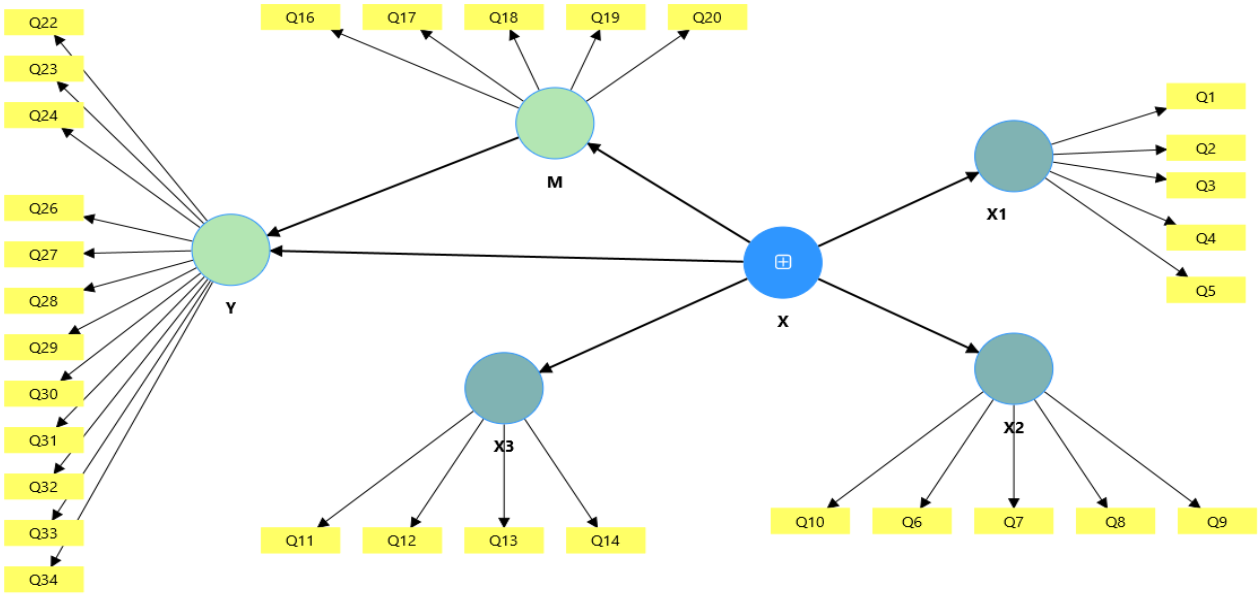
This involves the analysis of five key indicators that assess the goodness-of-fit and quality of the model structure. We also present visual representations of the study model before and after the refinement process, followed by the summary of convergent and discriminant validity evidence.

Figure (II-4): Structural Model Before Applying Convergent and Discriminant Validity Measures.



Source: Prepared by the two students based on SmartPLS outputs

Figure (II-5): forms the structural model after applying the evidence of convergent and discriminant validity.



Source: Prepared by the two students based on SmartPLS outputs.

4. Structural Model Evaluation Indicators

4.1 Coefficient of Determination (R^2)

The R^2 coefficient measures the extent to which the independent variables explain the variance in the dependent variable. It represents how well the observed results are replicated by the model. The table below summarizes the R^2 and adjusted R^2 values:

Table (II-16): R^2 and Adjusted R^2 Values

	R-square	R-square adjusted
M	0,295	0,282
X1	0,838	0,835
X2	0,896	0,894
X3	0,543	0,535
Y	0,471	0,451

Source: Prepared by the two students based on SmartPLS outputs.

According to Chin (1998), an R^2 value is considered high if > 0.67, moderate between 0.33 and 0.67, and weak otherwise. As shown above, the model includes a mix of high and moderate values, confirming that the independent variables (flexibility, learning, innovation) and the mediator (artificial intelligence) have meaningful explanatory power for the dependent variable (teacher performance).

4.2 Effect Size (F^2)

The F^2 statistic measures the effect of each individual independent variable on the dependent variable. Unlike R^2, it isolates the contribution of each construct. Cohen (1988) classifies F^2 values as follows: > 0.35 (large), 0.15–0.35 (medium), 0.02–0.15 (small), and < 0.02 (none).

Table (II-17): Effect Size (F^2)

M						0,129
X	0,590		4,287	6,538	1,280	0,220
X1						
X2						
X3						
Y						

Source: Prepared by the two students based on SmartPLS outputs.

4.3 Goodness of Fit (GoF)

The GoF index measures the global fit of the model by combining R^2 and AVE values using the formula:

$$\text{Gof} = \sqrt{\overline{AVE} \times \overline{R^2}}$$

. Interpretation thresholds: < 0.10 (unacceptable), 0.10–0.25 (weak), 0.25–0.36 (moderate), > 0.36 (strong).

Computed values:
Average R^2 = 0.615
Average AVE = 0.706
GoF = $\sqrt{(0.615 \times 0.706)}$ = 0.658

This value indicates a strong overall model quality.

4.4 Discriminant Validity Using HTMT

The Heterotrait-Monotrait Ratio (HTMT) is used to test discriminant validity. According to Henseler et al. (2015), an HTMT value below 0.90 confirms sufficient discriminant validity. All values in the matrix below fall within the acceptable range.

Table (II-18): HTMT Discriminant Validity Matrix

	M	X1	X2	X3	Y
M					
X1	0,376				
X2	0,537	0,883			
X3	0,416	0,641	0,655		
Y	0,607	0,509	0,503	0,694	

Source: Prepared by the two students based on SmartPLS outputs

All constructs show acceptable HTMT values below 0.90.

4.5 Predictive Relevance (Q^2)

The Q^2 statistic is used to assess the predictive relevance of the model. A Q^2 value greater than 0 indicates predictive power, while values below 0 suggest a lack of relevance.

Table (II-18): Q^2 Predictive Relevance

	SSO	SSE	Q^2 (=1-SSE/SSO)
Flexibility	250,000	169,382	**0,322**
Learning	200,000	133,578	**0,332**
Artificial Intelligence	300,000	292,715	**0,024**
Teacher Performance	250,000	207,510	**0,170**

Source: Prepared by the two students based on SmartPLS outputs

All Q^2 values are greater than zero, indicating that the model has predictive relevance.

3. Testing the Main and Sub-Hypotheses

The next step involves testing the hypotheses and evaluating the effect of both the independent and mediating variables on the dependent variable. The following table presents the hypotheses:

Main and Sub-Hypotheses of the Study

No.	Main Hypotheses	Sub-Hypotheses
1	H_0: There is no statistically significant relationship between organizational agility and teacher performance at Laghouat University at the significance level $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between organizational agility and teacher performance at Laghouat University at t	H_0: There is no statistically significant relationship between flexibility and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between flexibility and teacher performance at Laghouat University at $\alpha \geq 0.05$.

	he significance level $\alpha \geq 0.05$.	H_0: There is no statistically significant relationship between learning and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between learning and teacher performance at Laghouat University at $\alpha \geq 0.05$.
		H_0: There is no statistically significant relationship between innovation and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between innovation and teacher performance at Laghouat University at $\alpha \geq 0.05$.
2	H_0: There is no statistically significant relationship between organizational agility and artificial intelligence at Laghouat University at the significance level $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between organizational agility and artificial intelligence at Laghouat University at the significance level $\alpha \geq 0.05$.	H_0: There is no statistically significant relationship between flexibility and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between flexibility and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.
		H_0: There is no statistically significant relationship between learning and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between learning and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.

		H_0: There is no statistically significant relationship between innovation and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between innovation and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.
3	H_0: There is no statistically significant relationship between artificial intelligence and teacher performance at Laghouat University at the significance level $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between artificial intelligence and teacher performance at Laghouat University at the significance level $\alpha \geq 0.05$.	

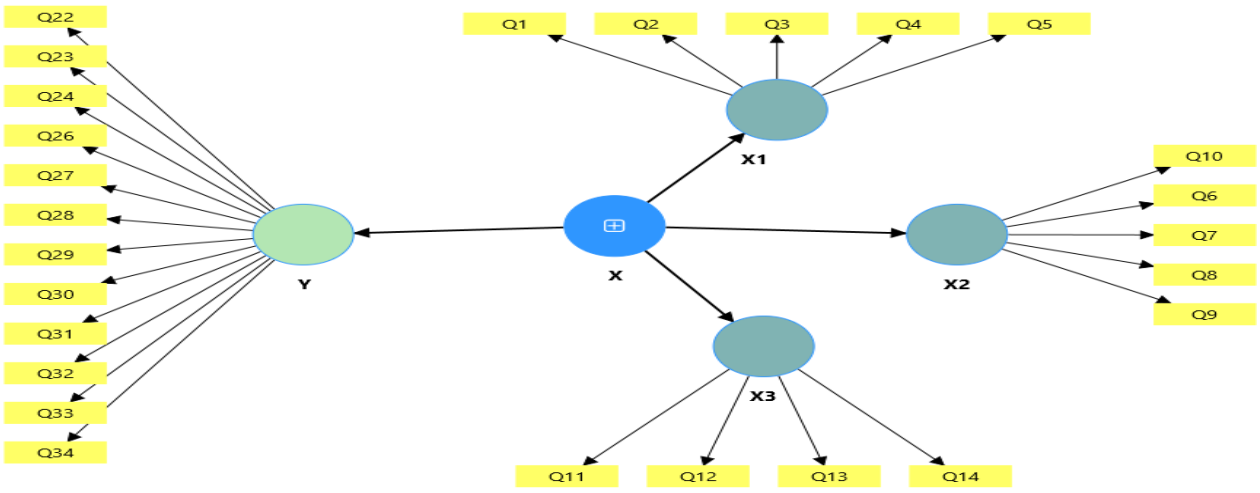
Source: Prepared by the two students based on the study model.

1. Structural Model of the Mediating Variable

1.1 Structural Model Without the Mediator:

Initially, the path model is estimated using the Bootstrapping technique **without** the interaction of artificial intelligence as a mediator, in order to evaluate the mediation effect of the artificial intelligence variable.

Figure (II-6): Path Model Without the Interaction of Artificial Intelligence as a Mediator



Source: Based on SmartPLS outputs.

It is evident from all direct paths that statistical significance is determined at the 0.05 level. If the **p-value** is **less than 0.05**, we reject the null hypothesis (H_0) for the path and accept the alternative hypothesis (H_1). Conversely, if the **p-value** exceeds 0.05, we accept the null hypothesis and reject the alternative, indicating that there is no significant effect between the variables.

Table (II-19): Direct Effect Path Mode

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
X1 <-Y	0.413	0.417	0.163	2.541	**0.53**
X2 <- Y	0.371	0.430	0.162	2.295	**0.54**
X3 <-Y	0.510	0.555	0.109	4.661	**0.000**
M<-Y	0,431	3,676	0,117	0,446	0,000

Source: Prepared by the two students based on SmartPLS outputs.

The table above indicates that all **p-values** exceed the significance level of 0.05, **except for the third sub-hypothesis**, which means that we reject the first and second alternative hypotheses and accept the **third alternative hypothesis**, along with the **main hypothesis**, which suggests the existence of a statistically significant effect.

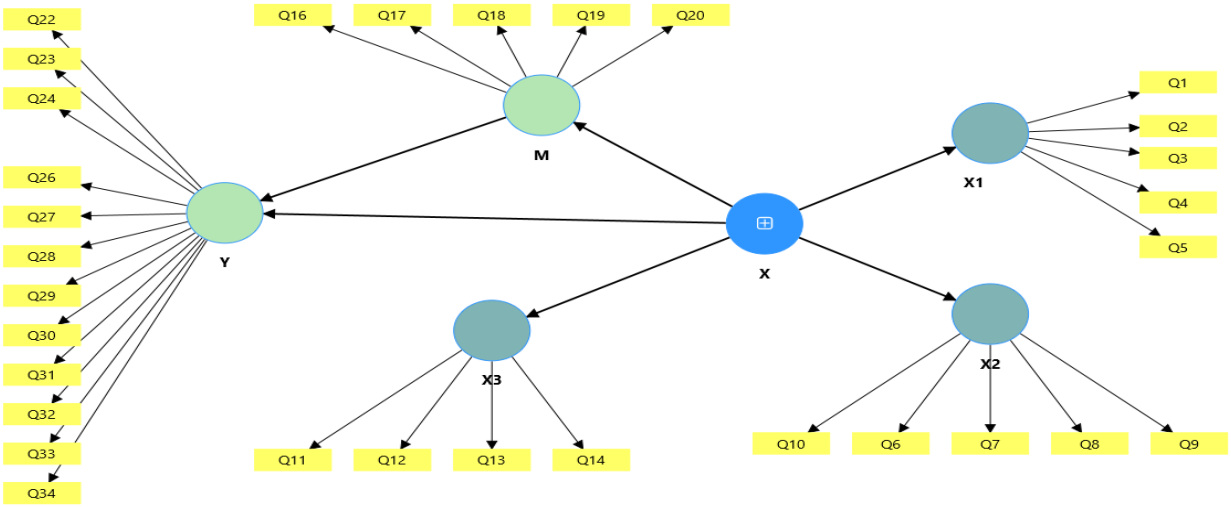
1.2 The Mediating Effect of Artificial Intelligence

Incorporating **Artificial Intelligence** as a mediating variable between the dimensions of **organizational agility** and the **teacher performance** variable is of great importance. This is because it is necessary to examine the **indirect paths** to verify whether AI mediates the relationship between the dimensions of organizational agility and teacher performance.

To assess the significance of these indirect paths, **bootstrapped samples** were tabulated and calculations were performed using **Excel**, as presented in the following figure:

Figure (II-7): Study Model with Artificial Intelligence as a Mediating Variable

Analysis of Direct and Indirect Effects – Mediation by Artificial Intelligence



Source: Prepared by the two students based on SmartPLS outputs.

1. Direct Path Model Including Artificial Intelligence as a Mediator

After introducing artificial intelligence as a mediating variable between organizational agility and teacher performance, and without considering second-order effects from the entrepreneurial innovation construct, the following table was obtained:

Table (II-20): First-Order Direct Effect Path Model

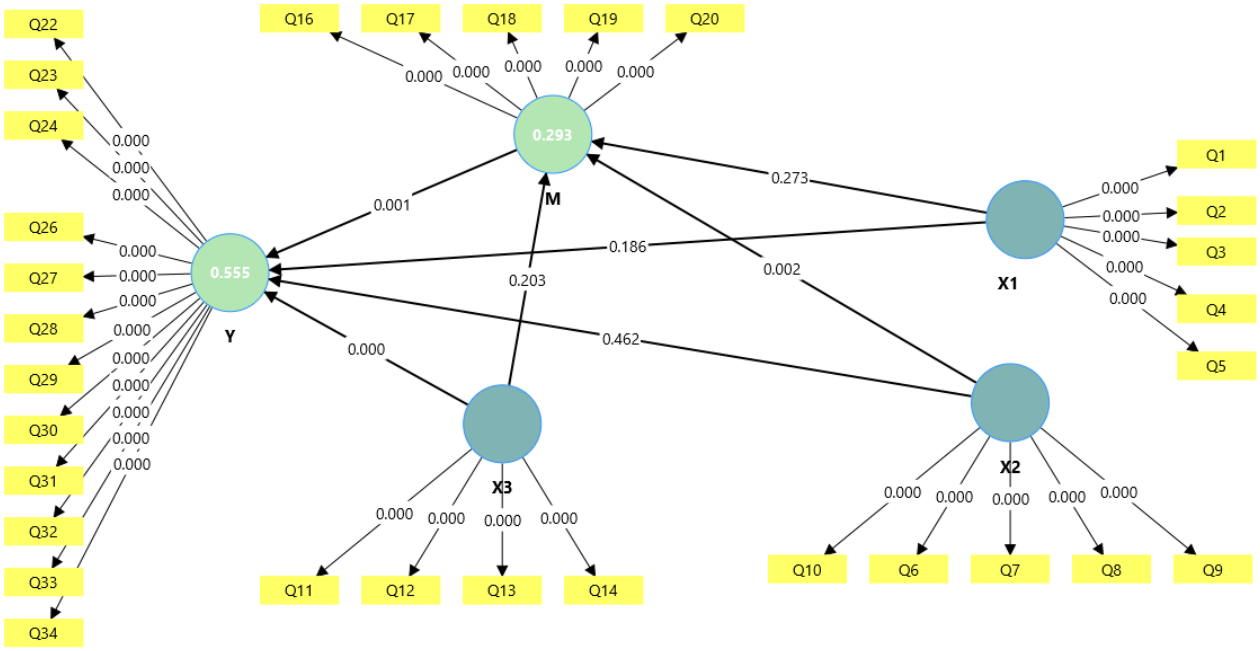
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
الرشاقة التنظيمية-> المرونة	0,691	0,712	0,065	10,597	**0,000**
الرشاقة التنظيمية-> التعلم	0,801	0,811	0,074	10,855	**0,000**
الرشاقة التنظيمية-> الابتكار	0,830	0,833	0,051	16,357	**0,000**
الرشاقة التنظيمية-> الذكاء الاصطناعي	0,188	0,191	0,244	0,771	**0,441**
الرشاقة التنظيمية-> أداء الأستاذ	0,511	0,527	0,158	3,238	**0,001**
الذكاء الاصطناعي-> أداء الأستاذ	-0,444	-0,468	0,165	2,684	**0,008**

Source: Prepared by the two students based on SmartPLS outputs.

- All p-values were less than 0.05 **except** for the path between organizational agility and artificial intelligence.
- Therefore, we accept all **alternative hypotheses** (main hypothesis 1 and main hypothesis 3), **except** for main hypothesis 2.

- This implies that there is **no mediation**, but rather a **direct effect** from organizational agility to teacher performance.

Figure (II-8): 2. Second-Order Mediation Model



Source: Prepared by the two students based on SmartPLS outputs.

To refine the analysis, a second-order mediation model was estimated by removing the higher-order construct 'entrepreneurial innovation' in order to examine the mediating effect of artificial intelligence between each individual dimension of organizational agility and teacher performance.

Table (II-21): Second-Order Indirect Effect Path Model

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
المرونة ->أداء الاستاذ	0.413	0.417	0.163	2.541	**0.53**
التعلم ->أداء الاستاذ	0.371	0.430	0.162	2.295	**0.54**
الابتكار->أداء الاستاذ	0.510	0.555	0.109	4.661	**0.000**
المرونة -> الذكاء الاصطناعي	-0,068	-0,021	0,239	0,284	**0,777**
التعلم -> الذكاء الاصطناعي	0,149	0,137	0,204	0,730	**0,466**
الابتكار-> الذكاء الاصطناعي	0,166	0,142	0,298	0,558	**0,577**
الذكاء الاصطناعي->أداء الاستاذ	-0,433	-0,416	0,174	2,493	**0,019**

Source: Prepared by the two students based on SmartPLS outputs.

Key Findings from Bootstrapping Results:
- **AI → Teacher Performance**: p = 0.000 → Statistically significant.
- **Education → AI**: p = 0.005 → Statistically significant.
- **Education → Teacher Performance**: p = 0.879 → Not significant.
- **Innovation → AI**: p = 0.067 → Not significant.
- **Flexibility → AI**: p = 0.298 → Not significant.
- **Flexibility → Teacher Performance**: p = 0.056 → Marginal.

Interpretation of Second-Order Indirect Effects:

According to the results, there is **no statistically significant indirect mediation** of artificial intelligence in the following paths:
- Flexibility → AI → Teacher Performance
- Learning → AI → Teacher Performance
- Innovation → AI → Teacher Performance
- Problem Awareness → AI → Teacher Performance

Thus, we accept all **null hypotheses** under **Main Hypothesis 2**, confirming the earlier result that there is **no mediation effect** and only **direct influence** from organizational agility to teacher performance.

Summary Table of Main and Sub-Hypotheses and Decisions

No.	Main Hypotheses	Decision	Sub-Hypotheses	Decision
1	H_0: There is no statistically significant relationship between organizational agility and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between organizational agility and teacher performance at Laghouat University at $\alpha \geq 0.05$.	Alternative hypothesis accepted	H_0: There is no statistically significant relationship between flexibility and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between flexibility and teacher performance at Laghouat University at $\alpha \geq 0.05$.	Alternative hypothesis accepted
			H_0: There is no statistically significant relationship between learning and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between learning and teacher performance at Laghouat University at $\alpha \geq 0.05$.	Alternative hypothesis accepted Alternative

			H_0: There is no statistically significant relationship between innovation and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between innovation and teacher performance at Laghouat University at $\alpha \geq 0.05$.	hypothesis accepted
2	H_0: There is no statistically significant relationship between organizational agility and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between organizational agility and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.	Null hypothesis accepted	H_0: There is no statistically significant relationship between flexibility and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between flexibility and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.	Null hypothesis accepted
			H_0: There is no statistically significant relationship between learning and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between learning and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.	Null hypothesis accepted
			H_0: There is no statistically significant relationship between innovation and artificial intelligence at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between innovation and artificial intelligence at Laghouat University at $\alpha \geq 0.05$.	Null hypothesis accepted
3	H_0: There is no statistically significant relationship between artificial intelligence and teacher performance at Laghouat University at $\alpha \geq 0.05$. H_1: There is a statistically significant relationship between artificial intelligence and teacher performance at Laghouat University at $\alpha \geq 0.05$.			Alternative hypothesis accepted

Chapter Four – Section IV: Analysis of Significant Differences

Before analyzing the significant differences, it was necessary to test the normal distribution of the data to determine whether parametric or non-parametric tests should be used.

1. Normality Test

The sample size is 57. The Kolmogorov-Smirnov test was used to assess whether the data follows a normal distribution. The results are shown in the following table:

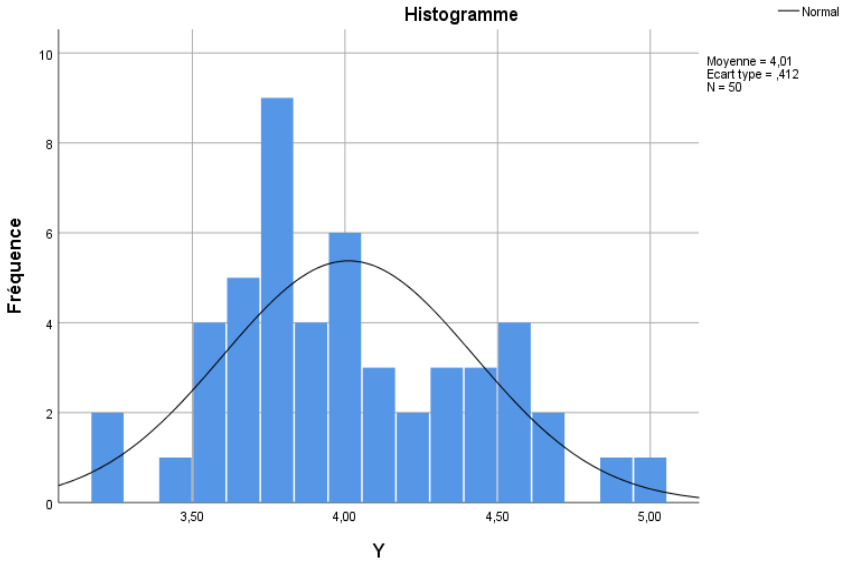
Table (II-22): Normality Test Results

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Y	,100	57	,200*	,970	57	,161
*. This is a lower bound of the true significance.						
a. Lilliefors Significance Correction						

Source: Prepared by the two students based on SPSS 26.0 outputs.

From the table above, it is evident that the significance values for the study axes are greater than 0.05. This indicates that the data follows a normal distribution, thus confirming the suitability of using parametric tests to analyze the data and test the hypotheses.

Figure (II-9): Normal Distribution Curve



Source: SPSS 26.0 Output

From the curve, it can be observed that the data approximates a normal distribution, which supports the use of parametric statistical tests.

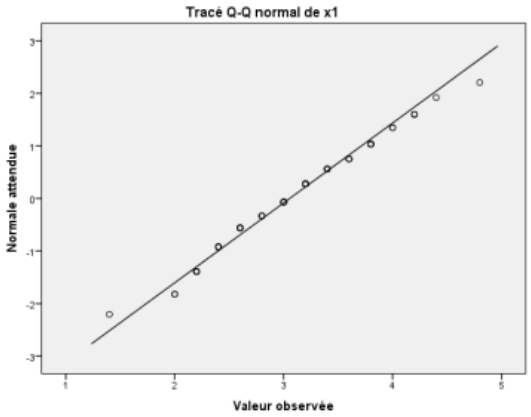


Figure (II-10): Q-Q Plot (Normal Probability Plot)

Source: SPSS 26.0 Output

The dots distributed along the vertical axis represent the expected values of a normal distribution, while the horizontal axis shows the standardized normal distribution scores. The alignment of the points along the straight line suggests that the sample follows a normal distribution.

Analysis of Statistical Differences Based on Demographic Variables

1. T-Test for Gender

1.1 Organizational Agility (X):

H_0: There are no statistically significant differences in respondents' answers regarding organizational agility in the Faculty of Economics in Laghouat attributed to gender at $\alpha \geq 0.05$.
H_1: There are statistically significant differences in respondents' answers attributed to gender.

	Levene's Test		t-test for Equality of Means					
							Std. Error Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
X	1.535	**0.221**	**0.364**	48	0.718	0.462072	-0.2093407	0.3017552
	-	-	**0.368**	46.373	0.715	0.462072	-0.2068059	0.2992204

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value > 0.05 → Fail to reject H_0. No significant gender-based differences observed.

1.2 Artificial Intelligence (Z):

H_0: There are no statistically significant differences in responses about artificial intelligence in the Faculty of Economics attributed to gender at $\alpha \geq 0.05$.
H_1: There are statistically significant differences attributed to gender.

	Levene's Test		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	
							Lower	Upper
M	0.305	**0.584**	**-0.989**	48	0.328	-0.27831	-0.84414	0.28752
	-	-	**-0.994**	47.911	0.325	-0.27831	-0.84131	0.28468

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value > 0.05 → Fail to reject H_0. Responses do not significantly differ by gender.

1.3 Teacher Performance (Y):

H_0: There are no statistically significant differences in responses about teacher performance in the Faculty of Economics attributed to gender at $\alpha \geq 0.05$.
H_1: There are statistically significant differences attributed to gender.

	Levene's Test		t-test for Equality of Means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	
							Lower	Upper
Y	0.095	**0.759**	**-0.045**	48	0.964	-0.00534	-0.24239	0.23171
	-	-	**-0.045**	47.950	0.964	-0.00534	-0.24192	0.23124

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value > 0.05 → Fail to reject H_0. No gender-based differences found.

2. ANOVA for Educational Level

2.1 Organizational Agility (X):

H_0: No significant differences in organizational agility perceptions due to education level.
H_1: Significant differences exist due to education level.

		Sum of Squares	df	Mean Square	F	Sig
x	Between Groups	0.698	4	0.175	0.872	**0.488**
	Within Groups	9.005	45	0.200	-	-
	Total	9.704	47	-	-	-

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value = 0.488 > 0.05 → Fail to reject H_0. No differences found.

2.2 Artificial Intelligence (Z):

H_0: No significant differences in AI perceptions due to education level.

H₁: Significant differences exist due to education level.

		Sum of Squares	df	Mean Square	F	Sig
Z	Between Groups	1.956	4	0.489	0.474	**0.775**
	Within Groups	46.453	45	1.0302	-	-
	Total	48.409	49	-	-	-

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value = 0.775 > 0.05 → Fail to reject H₀. No differences found.

2.3 Teacher Performance (Y):

H₀: No significant differences in teacher performance responses due to education level.
H₁: Significant differences exist due to education level.

		Sum of Squares	df	Mean Square	F	Sig
Y	Between Groups	0.610	4	0.152	0.889	**0.478**
	Within Groups	7.718	45	0.172	-	-
	Total	8.327	49	-	-	-

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value = 0.478 > 0.05 → Fail to reject H₀. No differences found.

3. ANOVA for Years of Experience

3.1 Organizational Agility (X):

H₀: No significant differences in organizational agility perceptions due to years of service.
H₁: Significant differences exist due to years of service.

		Sum of Squares	df	Mean Square	F	Sig
X	Between Groups	1.323	2	0.662	3.711	**0.032**
	Within Groups	8.380	47	0.178	-	-
	Total	9.704	49	-	-	-

Source: Prepared by the two students based on SPSS 26.0 output.

Result: p-value = 0.032 < 0.05 → Reject H₀. Significant differences found.

: Table (II-23): Key Differences by Years of Service

Years of Service (I)	Years of Service (J)	Mean Difference (I-J)	Sig. (p-value)	95% Confidence Interval
Less than 5 years	5 to 10 years	-0.307142	0.037	-0.594318 to -0.019966
	More than 10 years	-0.350198	0.020	-0.643296 to -0.057100
5 to 10 years	Less than 5 years	0.307142	0.037	0.019966 to 0.594318
	More than 10 years	-0.043055	0.785	-0.358730 to 0.272620
More than 10 years	Less than 5 years	0.350198	0.020	0.057100 to 0.643296
	5 to 10 years	0.043056	0.785	-0.272620 to 0.358731

Source: Prepared by the two students based on SPSS 26.0 output.

Interpretation:

- The **p-value between employees with less than 5 years of service and those with 5 to 10 years** is 0.037, which is **less than the significance level of 0.05**, indicating a **statistically significant difference**. This suggests that employees with **5 to 10 years of experience** are more creative and agile than those with less than 5 years. This difference (–0.307142) can be attributed to greater work experience.
- Similarly, the **p-value between employees with less than 5 years and those with more than 10 years** is 0.020, also indicating a significant difference. Employees with **over 10 years of experience** demonstrate higher agility and creativity compared to those with less than 5 years. The observed difference (–0.350198) supports the impact of seniority on performance.

- Employees with 5–10 years of service show significantly higher agility than those with less than 5 years (p = 0.037).

- Employees with more than 10 years of service outperform those with less than 5 years (p = 0.020).

3.2 Artificial Intelligence (Z):

H_0: No significant differences in AI perceptions due to years of service.
H_1: Significant differences exist due to years of service.

		Sum of Squares	df	Mean Square	F	Sig
Z	Between Groups	5.955	7	0.851	0.842	**0.559**
	Within Groups	42.454	42	1.011	-	-
	Total	48.409	49	-	-	-

Source: Prepared by the two students based on SmartPLS outputs.

Result: p-value = 0.559 > 0.05 → Fail to reject H_0. No significant differences found.

3.3 Teacher Performance (Y):

H_0: No significant differences in teacher performance due to years of service.
H_1: Significant differences exist due to years of service.

		Sum of Squares	df	Mean Square	F	Sig
Y	Between Groups	0.784	7	0.112	0.624	**0.733**
	Within Groups	7.543	42	0.180	-	-
	Total	8.327	49	-	-	-

Source: Prepared by the two students based on SmartPLS outputs.

Result: p-value = 0.733 > 0.05 → Fail to reject H_0. No differences observed.

Chapter Two Summary

This chapter represents the applied part of the study, focusing on the fieldwork conducted at the Faculty of Economics in Laghouat. The first section provides an overview of the Faculty of Economics, followed by a more specific introduction to the study setting. The subsequent sections present and analyze the results of the research.

Data collection was carried out through a questionnaire distributed to members of the study sample. The questionnaire was divided into two sections: the first section gathered personal information, while the second section addressed the research variables.

- The **first axis** focused on **organizational agility**, subdivided into multiple dimensions.
- The **second axis** dealt with **artificial intelligence** as a **mediating variable**.
- The **third axis** covered **teacher performance**.

These axes directly addressed the main research problem. The questionnaire responses were analyzed using the **SPSS statistical package** and **Excel spreadsheet software**, while the hypothesis testing was conducted using the **SmartPLS** software

Conclusion

This study aimed to explore the impact of organizational agility on teacher performance at the Faculty of Economics in Laghouat, with artificial intelligence considered as a mediating variable. The research combined both theoretical and practical dimensions to arrive at meaningful conclusions.

In the theoretical part, we reviewed key concepts such as organizational agility, artificial intelligence, and teacher performance, along with their interrelationships and significance in academic environments. In the empirical part, we conducted a field study using a questionnaire distributed to faculty members. The data were analyzed using SPSS, Excel, and SmartPLS.

The findings revealed that:

- There is a **statistically significant direct effect** of organizational agility on teacher performance.
- **Artificial intelligence did not mediate** the relationship between agility dimensions and performance.
- There were **no significant differences** in responses based on gender or educational level, while some differences were observed based on years of service.

These results highlight the importance of enhancing organizational agility to improve academic performance, while also pointing to the need for better integration of artificial intelligence to serve as an effective mediating factor in higher education institutions.

Based on the table, which displays statistical analysis results for different relationships, let's break down the interpretation and significance of the data in the context of the variables:

- **M** is the mediator.
- **X** is the independent variable with three dimensions: X1, X2, and X3.
- **Y** is the dependent variable.

Results Breakdown:

1. **M -> Y**:
    - **Original sample (O)**: 0.330
    - **Sample mean (M)**: 0.337
    - **Standard deviation (STDEV)**: 0.141
    - **T-statistics**: 2.341
    - **P-values**: 0.019

- **Interpretation**: There is a significant positive effect of the mediator (M) on the dependent variable (Y), with a moderate effect size. The T-statistics value (2.341) and the P-value (0.019) suggest that the

  relationship between the mediator and the dependent variable is statistically significant at a 5% level ($P < 0.05$).

2. **X -> M**:

   - **Original sample (O)**: 0.609
   - **Sample mean (M)**: 0.613
   - **Standard deviation (STDEV)**: 0.105
   - **T-statistics**: 5.809
   - **P-values**: 0.000
   - **Interpretation**: The independent variable (X) has a strong positive effect on the mediator (M), and this relationship is highly significant. The T-statistics value (5.809) and the P-value (0.000) show that this effect is very strong and highly statistically significant.

3. **X -> X1**:

   - **Original sample (O)**: 0.900
   - **Sample mean (M)**: 0.903
   - **Standard deviation (STDEV)**: 0.027
   - **T-statistics**: 33.535
   - **P-values**: 0.000
   - **Interpretation**: The relationship between X and X1 is very strong, with a very high T-statistics value of 33.535. The P-value (0.000) indicates that the effect is highly statistically significant.

4. **X -> X2**:

   - **Original sample (O)**: 0.931
   - **Sample mean (M)**: 0.931
   - **Standard deviation (STDEV)**: 0.018
   - **T-statistics**: 52.014
   - **P-values**: 0.000
   - **Interpretation**: Similarly, X has a very strong positive effect on X2. The very high T-statistics value of 52.014 and the P-value (0.000) confirm the statistical significance of this effect.

5. **X -> X3**:

    - **Original sample (O)**: 0.749
    - **Sample mean (M)**: 0.757
    - **Standard deviation (STDEV)**: 0.061
    - **T-statistics**: 12.333
    - **P-values**: 0.000
    - **Interpretation**: X also significantly affects X3, with a T-statistics value of 12.333, indicating a strong positive effect. The P-value (0.000) confirms that the relationship is statistically significant.

6. **X -> Y**:

    - **Original sample (O)**: 0.431
    - **Sample mean (M)**: 0.446
    - **Standard deviation (STDEV)**: 0.117
    - **T-statistics**: 3.676
    - **P-values**: 0.000
    - **Interpretation**: There is a moderate positive effect of X on Y. With a T-statistics value of 3.676 and a P-value of 0.000, this relationship is also highly significant.

General Conclusion:

- **Significance of Relationships**: All the relationships are statistically significant, with **P-values** less than 0.05, indicating strong and meaningful effects.
- **Role of the Mediator (M)**: The mediator (M) has a positive relationship with Y, and it is significantly influenced by X. This suggests that M plays a crucial role in the process by which X influences Y.
- **Effects of X on Dimensions (X1, X2, X3)**: The independent variable (X) has a strong positive effect on all three dimensions (X1, X2, and X3), which may imply that these dimensions are key components of X that contribute to its overall effect on Y.

In summary, **X** influences **M**, which then affects **Y**, with the dimensions **X1, X2, and X3** also being significantly impacted by **X**. This shows the importance of **X** in shaping both the mediator and the dependent variable

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