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Article

The Impact of Sustainability Strategies on the Quality of Institutional Performance and Competitiveness of Al-Iraqia University

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Abstract: This research analyzes the impact of sustainability strategies on the quality of institutional performance and its impact on competitiveness at the AL-iraqia university. The research problem stems from an academic and applied gap in linking institutional sustainability (environment, society, governance) to performance outcomes and competitiveness in the context of public universities in developing countries. The research aims to test the relationships between four dimensions of sustainability (footprint reduction, addressing risks, employee valuation, and the circular economy) on the one hand, and both the quality of institutional performance and competitiveness on the other hand, as well as to examine the role of performance quality in enhancing competitiveness. The research adopted a descriptive-analytical approach, using a standardized questionnaire whose items were verified for validity and reliability. Data were analyzed using appropriate statistical methods (descriptive statistics, correlation coefficients, and multiple regression/structural equation modeling based on data suitability). The variable scales were designed in line with recent literature and the requirements of the higher education environment. The main results showed positive and significant effects of sustainability strategies across all dimensions on the quality of institutional performance, including their positive impact on enhancing competitiveness. The results also confirmed that improving the quality of institutional performance—particularly the dimensions of work quality and continuous improvement—increases a university's ability to excel and differentiate itself. These findings contribute to the theoretical literature on sustainability-based university competitiveness and provide a practical framework for decision-makers to develop applicable policies and initiatives on campus, with implementation recommendations related to environmental footprint management, corporate risk management, human capital valuation, and expanding circular economy practices.

Keywords: Sustainability strategies, Institutional performance quality, Competitiveness, Higher education, AL-iraqia university

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1. Introduction

Over the past two decades, the field of higher education management has witnessed a structural shift toward adopting the principles of institutional sustainability as a lever for performance and competitiveness. With the expansion of public accountability, the growing demands of stakeholders (students, faculty, the labor market, and society), the acceleration of digital transformation, and environmental pressures, universities are required to redesign their academic and administrative operating models to ensure

resource efficiency, quality outcomes, adaptability, and innovation [1], [2]. In this context, international measurement frameworks have developed that incorporate sustainability into university ranking and competitiveness criteria. Global rankings such as (The Impact Rankings) and the (QS) Sustainability Pillar have established the importance of social impact, environmental responsibility, and good governance within the modern competitiveness equation of higher education.In the Iraqi context, universities face complex challenges related to energy, water, and waste management, financing challenges, governance, and human capital development, in addition to the need to modernize curricula and learning and research methods to meet the needs of the economy and society [3]. Hence, the need for practical approaches that link the institutional sustainability system—with its environmental, organizational, and human dimensions—to measurable performance and competitiveness outcomes, beyond general slogans and scattered initiatives.This study contributes to bridging a clear gap in the Arabic literature on linking "sustainability strategies" to the dimensions of "institutional performance quality" and "competitiveness" within the specific local Arab context of " AL-iraqia university." The study is based on four operational dimensions of sustainability: (1) Reducing the footprint, including energy and water efficiency, emissions management, and consumption; (2) Addressing risks through an institutional framework that identifies, assesses, and responds to risks; (3) Valuing employees through recruitment, development, motivation, and institutional well-being policies; and (4) A circular economy that redesigns supply chains, consumption, and waste management according to the principles of reduce, reuse, and recycle [4]. The study measures "institutional performance quality" across its operational dimensions (workload, discipline, task completion, work quality, and continuous improvement). It links this to "competitiveness," as measured in this study through dimensions adapted to the university environment: community service, international publishing and scientific research, global quality, and service marketing [5], [6]. Thus, the study's conceptual model provides an interpretive and experimental approach to examining three main relationships: the impact of sustainability strategies on the quality of institutional performance, their impact on competitiveness, and the impact of institutional performance quality on competitiveness [7].

The importance of this approach stems from its alignment between theoretical study and applied needs. On the one hand, it aligns with global trends in measuring university competitiveness based on sustainability, and on the other, it offers practical recommendations that can be implemented in the context of Iraqi universities. Its outcomes are also expected to contribute to guiding the " AL-iraqia university " plans to improve its reputation and positioning in relevant rankings, enhance public confidence, and raise the quality of educational, research, and community services [8], [9], [10].

2. Materials and Methods

2.1 The Research Problem

One of the goals of production and service organizations is to focus on enhancing competitiveness and striving to achieve advanced positions among their competitors. As university education has become global, and the world has witnessed widespread student and researcher migration between countries, universities have become increasingly focused on highlighting their scientific achievements and educational programs to the world within a competitive framework. The goal is to attract more support and enhance public confidence at home and abroad in their soundness. Therefore, universities, like all other institutions, strive to improve their performance by continuously improving their services and programs and offering new and better services. This, in turn, is reflected in improved performance for these universities, including the" AL-iraqia university**"**. As competition continues to evolve in the business and economic environment, organizations, including universities, are forced to adopt management approaches that enable them to address the challenges associated with these changes. Sustainability

strategies can support the long-term continuity of any organization. These strategies help organizations improve the quality of their institutional performance and address changes and fluctuations in the dynamic business environment by addressing weaknesses in traditional practices, working to conserve resources, and educating for this purpose. In light of growing global awareness of environmental and social challenges, based on the consideration of sustainability as a fundamental issue facing organizations in the modern era, it has become imperative for these organizations, including universities in general and "AL-iraqia university" in particular, to adopt sustainable strategies that enable them to keep pace with and adapt to the changes and developments accompanying this growing awareness, as well as enhancing their competitiveness. Based on the above, the main question of the research problem was formulated as follows: (Do sustainability strategies have an impact on the quality of institutional performance and the competitiveness of the AL-iraqia university?)

The following sub-questions branched out from the main question above:

1. Do sustainability strategies have an impact on the quality of institutional performance of AL-iraqia university?
2. Do sustainability strategies have an impact on the competitiveness of AL-iraqia university?
3. Does the quality of institutional performance have an impact on the competitiveness of AL-iraqia university?

2.2 Research Objectives

The research aims to determine the impact of sustainability strategies on the quality of institutional performance and competitiveness of AL-iraqia university through:

1. Studying the relationship between sustainability strategies and the quality of institutional performance.
2. Studying the relationship between sustainability strategies and competitiveness.
3. Studying the relationship between the quality of institutional performance and competitiveness.

2.3 Research Importance

The significance of this research stems from three integrated dimensions: theoretical, applied, and methodological:

1. Theoretical Significance: It provides Arab and international literature with an integrated model that examines the direct impact of sustainability strategies in their various dimensions (footprint reduction, addressing risks, employee valuation, and the circular economy) on both institutional performance quality and competitiveness in the context of public universities in a developing country. It also contributes to aligning institutional sustainability concepts with environmental, social, and governance (ESG) metrics and modern international sustainability ranking matrices (such as THE Impact Rankings and the sustainability pillar of the QS Rankings), thus enhancing the accumulation of knowledge on sustainability-based higher education competitiveness.
2. Practical Importance: It provides usable results for decision-makers at the "AL-iraqia university" to design a practical policy package: managing the carbon, energy, and water footprint on campus; establishing an institutional framework for risk management in accordance with ISO 31000; enhancing the appreciation and motivation of human resources; and adopting circular economy practices in procurement, operations, and waste. These practices have become a contemporary focus for enhancing universities' ability to excel, attract students and partners, and improve their reputation and position in sustainability-based rankings.
3. Methodological Importance: The research provides an Arab standard tool that has been tested for validity and reliability, with a hypothetical model that integrates sustainability, performance quality, and competitiveness. It also enriches studies of the Iraqi context with a procedural framework that is replicable and

comparable across different university units, allowing for measuring impact over time and comparing it with regional universities.

2.4 Research Hypotheses

The first main hypothesis(H1): assumes that sustainability strategies, with their dimensions (reducing our footprint, addressing risks, valuing employees, and the circular economy), have a positive impact on the quality of institutional performance at the AL-iraqia university.

The second main hypothesis (H2): It assumes that sustainability strategies, with their dimensions (reducing our footprint, addressing risks, valuing our employees, and the circular economy), have a positive impact on the competitiveness of the AL-iraqia university.

The third main hypothesis (H3): It assumes that the quality of institutional performance, with its dimensions (volume of work, discipline, task completion, quality of work, and continuous improvement), has a positive impact on the competitiveness of the AL-iraqia university.

2.5 Research Model

In order to visualize and translate the research hypotheses, the researchers designed a research model to express its hypotheses, as shown in Figure 1:

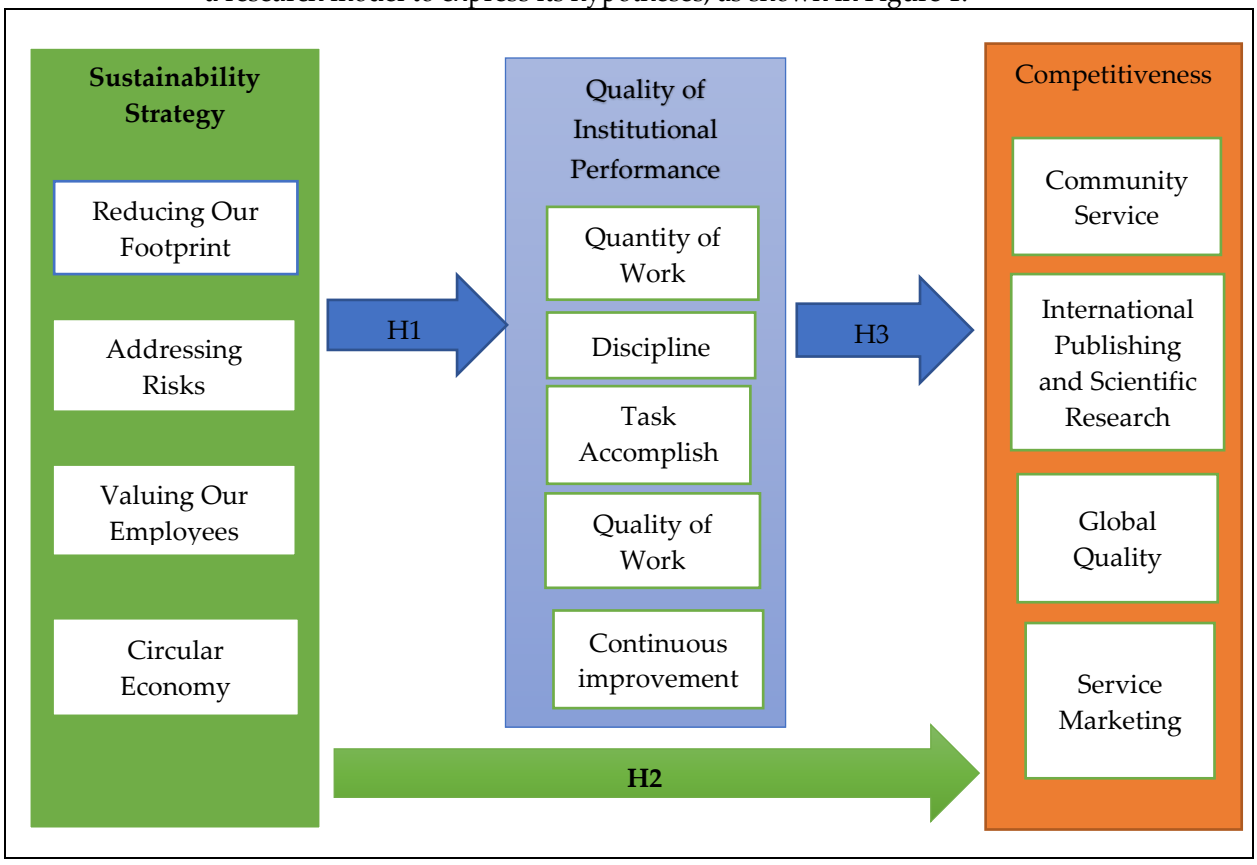

Figure 1. The hypothetical model of the research
Source: Prepared by the researchers

3. Results and Discussion

Theoretical Framework

3.1 Sustainability Strategies

Studies indicate that the beginnings of interest in sustainability were in the field of the environment and the sustainability of its resources. From this perspective, and given the general connection of organizations to the environment, interest in sustainability emerged in the field of management, given their focus on managing resources and utilizing them in the most optimal ways, adapting and sustaining them, and working to satisfy current and future needs. Due to limited resources, interest in sustainability and its strategies

emerged to conserve resources and enable organizations to survive, continue, and fulfill their social responsibility [11]. In business, the term sustainability refers to an organization's strategy and procedures for reducing the harmful environmental and social impacts resulting from business operations in a given market. Sustainability practices in any organization are typically analyzed in light of environmental, social, and governance (ESG) metrics. This is based on the premise of environmental sustainability, preserving the environment and its resources, and protecting them from overexploitation and the infringement of the rights of future generations [12]. Organizational sustainability refers to an organization's ability to continue, achieve success, and progress, meeting the current needs of its stakeholders without negatively impacting its ability to meet their future needs. Therefore, a sustainability strategy can be defined as an organization's ability to adapt to and interact with environmental changes with the aim of survival and continuity without depleting resources or causing harm that would reduce the chances of future generations enjoying similar levels of benefits [13], [14].

Sustainability strategies are as follows:

1. Reducing our footprint

Environmental impact assessment (EIA) is an important concept for many organizations, most notably the World Health Organization (WHO). This concept refers to the activity designed to identify and predict the effects of legislative proposals, policies, programs, projects, and operations on the biological, geological, and natural environment and on human health and safety [15].

Its goal is to integrate environmental considerations into the decision-making process, identify environmental aspects in plans, and inform decision-makers of the expected outcomes of actions. It also aims to evaluate the alternatives presented to any project based on the criteria of negative and positive impacts, the lowest environmental cost, and the environmental consequences of the decisions made [16], [17].

The EIA serves as a warning bell for individuals and organizations to monitor and regulate their activities that endanger the environment. If everyone monitored their EIA, there would be fewer environmental problems today, as problems such as carbon emissions, lack of clean air, increased desertification, global warming, and reduced environmental pollution would be reduced [18], [19]. Organizations must improve the economic productivity of their resources by addressing energy and water efficiency as a central strategic objective.

Reducing the carbon footprint has numerous benefits for the organization, including: (https://www.microsoft.com)

a. Reduced operating costs.
b. A stronger market position.
c. Increased efficiency.
d. Improved public image.
e. Risk reduction.

The ecological footprint focuses on the damage caused to the environment by the consumption of natural resources and efforts to limit the overuse of those resources.

2. Addressing risks

The systematic risk management framework addresses the risks and uncertainty threatening the organization in three stages: the first is risk identification, the second is risk assessment, and the third is risk treatment. The first stage aims to comprehensively identify all potential risks that could negatively impact performance [20]. The risk assessment stage helps evaluate and prioritize identified risks based on their likelihood of occurrence and the consequences of their occurrence, enabling decision-makers to identify risks that require greater attention. Finally, the risk treatment stage explores the best optimization methods for dealing with uncertainty, along with strategies to mitigate performance impairment [21].

refers to ISO 31000 (the international standard for risk management) and the basic requirements for this process, which are:

1. Establishing the context: This involves identifying responsibility and lines of communication for risks.
2. Communication, consultation, and determining the level of risk appetite.
3. Risk measurement: **This includes**:
   a. Identifying and classifying risks as strategic, operational, financial, or environmental (environmental risks are the focus of this research).
   b. Risk analysis.
   c. Risk assessment to determine appropriate risk actions according to the four risk control strategies (acceptance, treatment, transfer, and termination).
4. Addressing risks and taking appropriate actions [22].
5. Monitoring and review: Regular monitoring through risk reports, improvement, and correction of deviations (feedback). Figure 2 illustrates this.

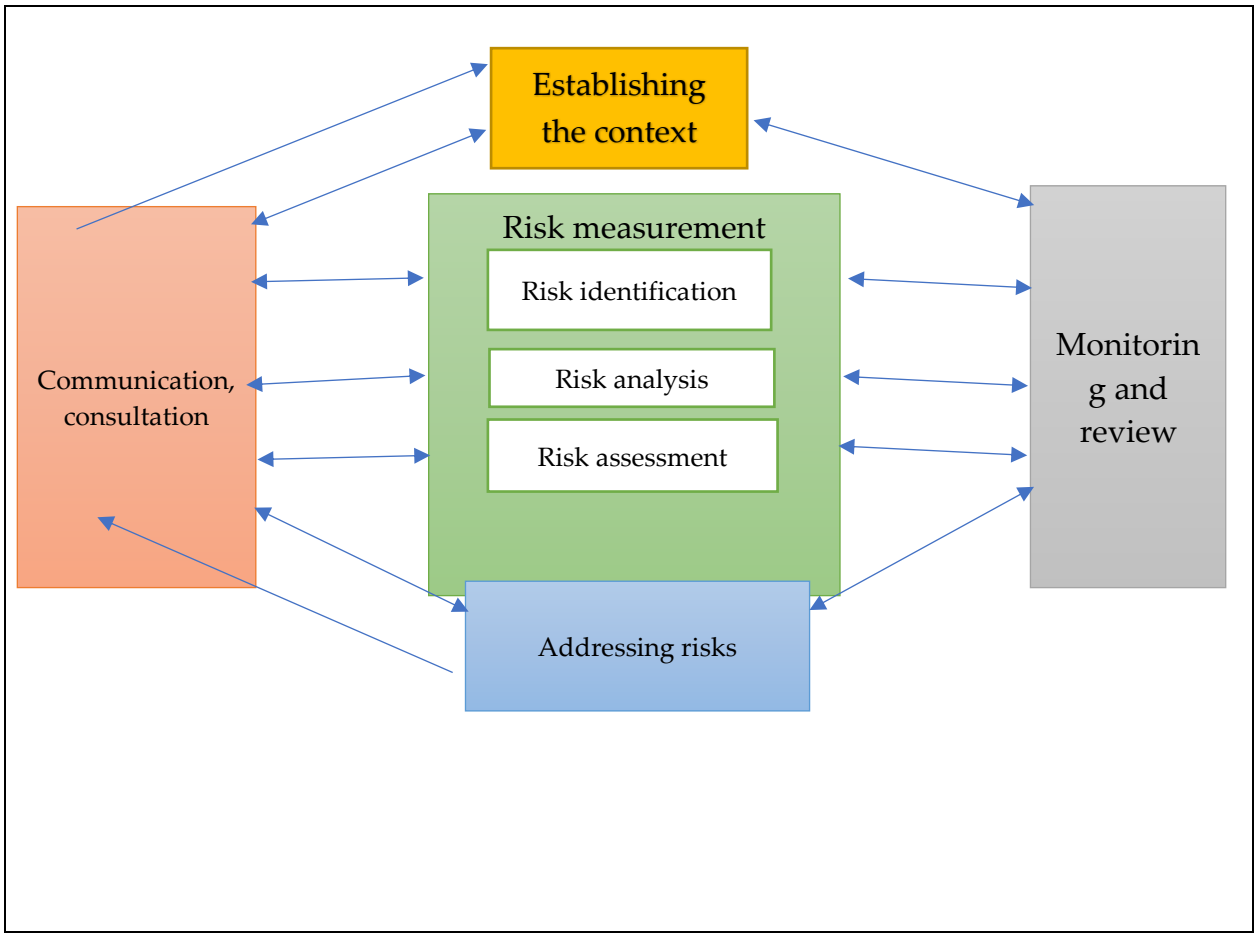

Figure 2. Basic requirements for risk management

Source: Pishvaee Saman, Mohseni Shayan , Bairamzadeh Samira , Biomass to Biofuel Supply Chain Design and Planning Under Uncertainty Concepts and Quantitative Methods , ACADEMIK PRESS, ScinceDirect, 2021

3. Valuing Our Employees

defines emotional health as a set of characteristics related to positive mood, high motivation, and feelings of pleasure, interest, and happiness. It suggests that engagement with specific intrinsically rewarding stimuli is linked to happiness, mental health, and professional achievement. That is, if an individual finds a particular stimulus rewarding, they may be more likely to find other stimuli rewarding due to their general domain sensitivity to (intrinsic) rewards, which may be linked to mental health [23], [24].

Therefore, individuals with high sensitivity to intrinsic rewards will tend to engage in a variety of seemingly diverse and intrinsically rewarding activities, which in turn will increase the likelihood that they will eventually find rewarding activities in which they also excel. Conversely, low sensitivity to intrinsic rewards will lead to a general lack of interest in a wide variety of activities, leading to low mood and a lack of motivation. Thus, a general sensitivity to intrinsic rewards will contribute to flourishing and the absence of suffering. A good, fair, and equitable reward and recognition system positively impacts employee motivation. Reward systems contribute to employee motivation, as employees feel appreciated by their superiors for their hard work. It is important to provide employees or workers with incentives that will enhance their motivation and desire to complete the task efficiently. Rewards (whether material or moral) are likely to make an individual feel valued and respected in the workplace [25].

4. Advancing the Circular Economy

It is an economic model that aims to reduce waste in materials, goods, and energy and make optimal use of them. Consumption, waste, and emissions are minimized by streamlining processes and supply chains. It is based on the principle of using waste as a resource and separating economic growth from the use of natural resources [26], [27]. In other words, it is an economy through which the value of resources and products can be preserved and waste production kept to a minimum. Al-Qandouz and Al-Zoubi noted that interest in the circular economy has increased significantly through the efforts of the Ellen MacArthur Foundation, which adopted Walter Stahl's "cradle-to-cradle" concept. The World Bank report for the year indicates the importance of the circular economy in that it contributes to preserving raw materials by returning them from the consumer to the producer instead of disposing of them and turning them into waste. Thus, their recycling is sustained, which helps in facing several challenges in the field of climate change, resource scarcity, and population growth [28], [29], [30].

5. Institutional Performance

defines institutional performance as the sum of both individual performance and the performance of organizational units interacting with the influence of the economic, social, and cultural environment. It is based on the philosophy that each level of performance within an organization, whether individual or unit, is part of a whole that is part of another whole at a higher level [31]. It proceeds through several steps, starting with setting performance standards and then comparing actual achievement with performance standards to diagnose deviations and propose corrective actions. Performance cannot be improved without a performance evaluation that helps identify departments and administrations that are operating efficiently and those that need improvement and development measures [32].

point to the indicators agreed upon by researchers that organizations must possess to be judged as having achieved institutional performance. These indicators are:

1. Philosophy and mission: These govern the organization's workflow and define its purpose and the purpose for which it was established.
2. Governance and management: These relate to leadership, organizational structure, adherence to clear policies, approved systems and laws, defining duties and responsibilities, and linking the elements of governance and management to a control system aimed at evaluating progress and improving performance [33].
3. Institutional scope: This defines the organization's relationship with society, ensures mutual benefit, and measures the organization's local and international reputation.
4. Resources and services: These include human, material, financial, educational, student services, institutional development, and performance improvement.
5. To measure performance, organizations need to know the criteria by which it is measured and determine the limits required to achieve pre-set objectives [34]. These criteria must be precise, understandable, simple, clear, motivating, and take into account the principle of participation. As shown in Figure 3, the criterion is what is measured and is characterized by stability, unlike the indicator, which is

characterized by change and indicates the extent to which the goal has been achieved based on comparing actual performance with the specified standard [35], [36]. It is worth noting that indicated the existence of a group of performance levels ranging from superior performance to below-average performance, namely (exceptional performance, outstanding performance, very good performance, good performance, average performance, and finally, poor performance).

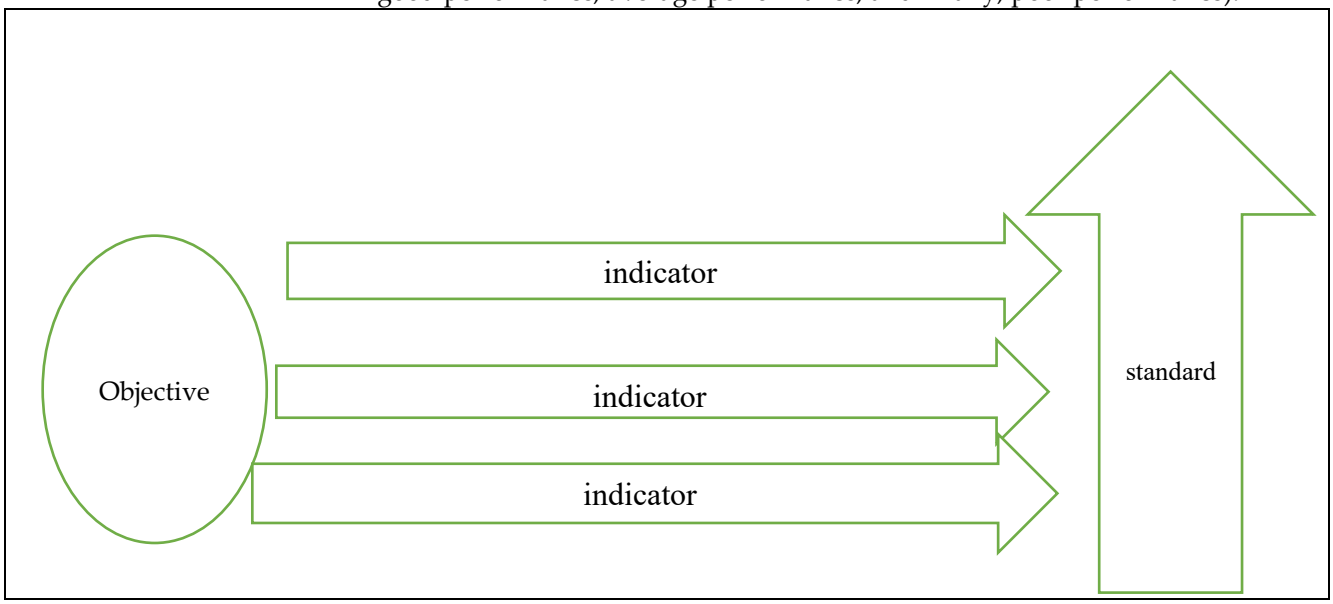

Figure 3. The difference between the standard and the indicator
Source: Prepared by the researchers

Approaches to Improving Institutional Performance

Haynes presented three approaches to developing and improving institutional performance, ranking them in descending order from most difficult to least difficult:

1. Employee improvement approach: This is the most difficult due to the difficulty of changing individuals. This approach assumes the possibility of improving performance by focusing on the employee's strengths, focusing on balancing the work the individual desires, and linking improvement to the individual's personal goals [37].
2. Job improvement approach: Considering that changing job duties provides opportunities to improve performance, if the job duties are commensurate with the employee's abilities and skills, this will contribute to improving the level of performance.
3. Situational improvement approach: Based on the perspective of the situational theory of management, the situations surrounding the job create opportunities for change, which may in turn lead to improved performance in line with those situations [38].

Points to several practices that contribute to improving institutional performance:

1. Employee engagement: This motivates employees to perform at their best and enhances their commitment to the organization.
2. Effective communication: To overcome challenges arising from conflicting goals and management roles.
3. Identify and remove internal barriers and streamline processes to make them more accurate and efficient.
4. Design specific metrics to align with objectives.
5. Use comprehensive training and development strategies.
6. Focus on business strategy through customer communication, operational efficiency, or leadership.

Dimensions of Institutional Performance:

The study presented by indicated that the dimensions of institutional performance are represented by two main aspects: the cognitive aspect and the social aspect. The cognitive aspect represents the development of institutional memory and dual learning, while the social aspect is related to employee satisfaction. Organizations focused on performance management are institutionally distinguished by their application of a social management system.

Indicates that the dimensions of institutional performance include two main dimensions: the first is the organizational dimension, which refers to the organizational methods and approaches adopted by the institution to achieve its goals. The second dimension is the social dimension, which indicates the extent of job satisfaction among individuals at various levels. adds the economic dimension, which is measured by the institution's financial statements, and the environmental dimension, which is based on the institution's effective contribution to the development and advancement of the environment in which it operates [39], [40].

Believe that the dimensions of institutional performance are represented by two dimensions. The first is the quality of work, which is linked to the quality of the individual, the surrounding circumstances, and the speed with which they accept work. The second dimension is the quantity of work completed, which expresses the relationship between the quantity of work and the time associated with performance. This must be equivalent and proportionate to the capabilities and potential of individuals, and this is called the work-time rate.

Indicated that the dimensions of institutional work are divided into:

a. Quantity of Work: This refers to the quantity or units of production of a good or service that must be produced within a specific time period [41]. The relationship between the quantity of work completed and the time required for completion. Individuals' performance capacity must be commensurate with the quantity of work required, and individuals must accept the additional responsibilities required of them.
b. Discipline: This is the job behavior required of individuals, through adherence to organizational rules, policies, instructions, and procedures. It is essential to provide a written job description that clearly defines the duties and responsibilities of each position, as well as direct monitoring of the extent of individuals' compliance with regulations and instructions.
c. Task Accomplishment: The clearer, more specific, and measurable the tasks are, the better the level of achievement. Leaders should guide individuals on the methods and procedures for accomplishing tasks.
d. Work Quality: This is a comprehensive concept that includes achieving both individual and organizational goals, focusing on primary objectives. It reflects the organization's ability to meet employees' personal needs and achieve job security and job satisfaction.

Institutional Performance Indicators

Presented a set of institutional performance indicators:

1. Efficiency: An institution's efficiency represents its ability to optimally utilize its financial and human resources to achieve its desired goals.
2. Effectiveness: An institution's effectiveness is achieved when it successfully achieves its purpose, mission, and overall strategic objectives.
3. Relevance: This reflects the degree of satisfaction of beneficiaries and stakeholders with the quality and quantity of services provided.
4. Sustainability: This reflects the institution's ability to raise the necessary funds to implement various programs and activities. It also reflects whether it possesses the necessary resources to enable it to continue its operations and whether it has the capacity to provide its services to beneficiaries with the same efficiency and effectiveness. Furthermore, sustainability confirms whether the institution's programs and activities are compatible with and harmonize with the social and cultural context.

Competitiveness is the organization's continuous ability to achieve customer satisfaction and maximize profits by offering products and services that surpass competitors, fulfill customer desires, and increase customer satisfaction. It encompasses everything an organization can do to differentiate itself from competitors.

University competitiveness is characterized by the university's superior performance compared to its competitors, and the college or university administration's provision of greater value to its customers by offering greater benefits and services to students and parents.

Refers to it as the university's ability to achieve and maintain educational quality, raise its internal efficiency, increase demand for it, and improve its outputs to achieve its goals at the local, international, and global levels, achieving advanced positions in global university and research institution rankings.

Types of competitiveness: identified several types of competitiveness, including:

1. Price competitiveness: This refers to the price structure and is primarily based on costs.
2. Non-price competitiveness: This refers to factors other than price and costs, such as technology, which is based on research, innovation, and the accumulation of technological knowledge and skills. Another example of this type is structural competitiveness, such as the ability to produce and distribute widely.
3. Time-based competitiveness, which is divided into short-term and long-term competitiveness.

The Importance of University Competitiveness

The importance of university competitiveness stems from its high importance for countries that consider human capital a key factor of production and a contributor to their competitiveness. Universities interested in competitiveness focus on key elements, including the following:

a. Internationalization through excellence from other universities.
b. Improving the level of research performance.
c. Modern infrastructure, such as laboratories, scientific equipment, and information technology.
d. Research teams conducting interdisciplinary research.

The importance of university competitiveness stems from its ability to develop individuals, enhance their sense of belonging, and strengthen their integration into the work environment. It also enhances the institution's focus on market demand to enable it to successfully supply the market with graduates.

Dimensions of Competitiveness in the Higher Education Sector

University competitiveness is defined as a university's ability to achieve superior and sustainable performance compared to its peers by leveraging its resources, knowledge, and management techniques to create greater value for stakeholders (students, researchers, the labor market, and society). Based on recent literature and based on, four main dimensions of competitiveness can be formulated and adapted to the university environment as follows:

a. Distinctive Efficiency: This refers to the optimal use of financial and human resources, infrastructure, and technology to achieve higher educational, research, and service outcomes at lower costs and in a shorter time. In the university context, it is measured through indicators such as research productivity per faculty member, student costs, energy and water efficiency, and academic transaction processing cycles. Sector experience shows that reaching the "efficiency frontier" is associated with improved rankings, reputation, and student recruitment.
b. Quality: This includes the quality of teaching and learning, academic accreditation, quality of outputs and research, student experience, and academic reputation. It is reflected in indicators such as teaching and research reputation, faculty-to-student ratios, accreditation and adherence to quality assurance standards, learning outcomes, and student satisfaction.

c. Responsiveness and Flexibility: This is the university's ability to quickly adapt to technological and social changes and market needs, through curriculum modernization, the expansion of flexible and digital learning, the integration of disciplines, and the acceleration of institutional decision-making. This capability is a key competitive advantage in highly dynamic environments and is linked to innovation and sustainability, especially in times of uncertainty.

d. Innovation and Creativity: These concepts refer to the production of new ideas, practices, services, and programs that have a tangible impact on education, research, technology transfer, and entrepreneurship. In universities, they are embodied in international collaborations, business incubators, patents, and the quality of educational and research innovations.

Alignment with the current study's measurement: The above conceptual dimensions intersect with the applied measurement dimensions adopted in this study for competitiveness (community service, international publishing and scientific research, global quality, and service marketing). Global quality embodies the quality dimension, international publishing and scientific research reflects the innovation dimension, and community service and service marketing represent the responsiveness and efficiency dimensions in terms of the speed of responding to stakeholder needs and the improved use of marketing resources.

Applied Research Framework

Data Analysis

The SPSS statistical package (version 20) was used to analyze the data. This involved two stages of detailed statistical analysis of the data. In the first stage, descriptive statistical analysis was conducted to extract the mean and standard deviation of the main study variables (sustainability strategies, quality of institutional performance, competitiveness) and their sub-dimensions. In the second stage, multiple regression analysis was conducted to understand the relationship between these variables.

Descriptive Statistics

In Table 1, based on a five-point Likert scale, the arithmetic means indicate a high level of sustainability strategies across four dimensions at the aggregate level for each dimension: (reducing our footprint, addressing risks, valuing our employees, and the circular economy) at the University of Iraq. These are (3.55), (3.34), (3.44), and (3.31), respectively, with standard deviations of (0.719), (0.896), (0.888), and (0.824), respectively. The researchers synthesized the sustainability strategies scale based on the dimensions provided by the World Economic Forum and the Ellen MacArthur Foundation. We note that the footprint reduction dimension achieved the highest levels, reflecting the AL-iraqia university interest in improving its public image, working to reduce risks, and properly addressing energy and water efficiency, in line with the propositions of.

Table 1. Descriptive statistics for sustainability strategies**.**

Sustainability Strategies					
Dimensions	Paragraph	arithmetic mean	Standard Deviation	Coefficient of Variation (%)	Relative Importance
Reducing Our Footprint	**1**	**3.99**	**0.626**	**62.59**	**0.79**
	2	**3.67**	**0.475**	**47.46**	**0.73**
	3	**3.16**	**0.789**	**78.91**	**0.63**
	4	**3.39**	**0.985**	**98.49**	**0.678**
Total		**3.55**	**0.719**		
ddressing Risks	**5**	**3.61**	**0.804**	**80.36**	**0.72**
	6	**3.32**	**1.067**	**86.74**	**0.66**
	7	**3.40**	**0.930**	**91.90**	**0.68**
	8	**3.23**	**0.831**	**83.13**	**0.64**
	9	**3.15**	**0.849**	**84.93**	**0.62**
Total		**3.34**	**0.896**		

Valuing Our Employees	**10**	**2.79**	**0.949**	**94.85**	**0.55**
	11	**2.87**	**0.935**	**93.48**	**0.73**
	12	**3.52**	**1.095**	**109.49**	**0.70**
	13	**4.57**	**0.574**	**57.35**	**0.91**
Total		**3.44**	**0.888**		
ircular Economy	**14**	**3.37**	**0.866**	**86.63**	**0.67**
	15	**3.33**	**0.704**	**70.39**	**0.66**
	16	**3.09**	**0.989**	**98.87**	**0.61**
	17	**3.64**	**0.782**	**78.22**	**0.72**
	18	**3.11**	**0.781**	**78.1**	**0.62**
Total		**3.31**	**0.824**		

Source: Prepared by researchers based on statistical analysis outputs

As shown in Table 1, the results of the arithmetic means (3.58), (3.87), (3.72), (3.38), and (3.78) on the five-point Likert scale indicate a high level of the dimensions of institutional performance quality (quantity of work, discipline, task completion, quality of work, continuous improvement). At the overall level for each dimension at the AL-iraqia university, with standard deviations of (0.891), (0.669), (0.859), and (0.857), respectively. These dimensions were measured according to the scale provided by. It is clear from the arithmetic means above that the continuous improvement dimension achieved the highest level, indicating that the university under study is interested in improving the institution's programs and activities to suit and harmonize with the social and cultural situation to enhance its ability to continue and sustain. This is consistent with what was stated by.

Table 2. Descriptive statistics for dimensions of institutional performance quality.

institutional performance quality					
Dimensions	Paragraph	arithmetic mean	Standard Deviation	Coefficient of Variation (%)	Relative Importance
uantity of work	**19**	**3.76**	**0.898**	**89.80**	**0.75**
	20	**3.36**	**0.849**	**84.85**	**0.67**
	21	**3.83**	**0.876**	**87.56**	**0.76**
	22	**3.37**	**0.941**	**94.11**	**0.67**
Total		**3.58**	**0.891**		
Discipline	**23**	**4.13**	**0.622**	**62.24**	**0.82**
	24	**3.72**	**0.745**	**74.54**	**0.74**
	25	**3.80**	**0.658**	**65.75**	**0.76**
	26	**3.77**	**0.727**	**72.73**	**0.75**
	27	**3.95**	**0.590**	**59.03**	**0.78**
Total		**3.87**	**0.669**		
Task completion	**28**	**4.20**	**0.771**	**77.1**	**0.84**
	29	**3.57**	**0.857**	**85.69**	**0.71**
	30	**3.83**	**0.860**	**86.01**	**0.76**
	31	**3.27**	**0.949**	**94.91**	**0.65**
Total		**3.72**	**0.859**		
Quality of work	**32**	**3.83**	**0.742**	**74.20**	**0.76**
	33	**3.24**	**1.025**	**102.45**	**0.648**
	34	**3.43**	**0.825**	**82.48**	**0.68**
	35	**3.36**	**0.782**	**78.22**	**0.67**
	36	**3.05**	**0.914**	**91.37**	**0.61**
Total		**3.38**	**0.857**		
Continuous improvement	**37**	**3.53**	**0.684**	**68.44**	**0.70**
	38	**3.28**	**0.831**	**83.11**	**0.65**

	39	**3.24**	**0.956**	**95.63**	**0.64**
	40	**3.37**	**0.882**	**88.18**	**0.67**
	41	**3.64**	**0.671**	**67.06**	**0.72**
Total		**3.78**	**0.805**		

Source: Prepared by researchers based on statistical analysis outputs

The competitiveness scale was developed by modifying the scale using the dimensions (community service, international publishing and scientific research, global quality, and service marketing). The measurement was carried out according to a five-point Likert scale ranging from (1) strongly disagree to (5) strongly agree. The descriptive statistics for these dimensions are shown in Table 2, which indicates a high level of arithmetic means for these dimensions at AL-iraqia university, which were (3.53), (3.78), (3.70), and (3.53), respectively, with standard deviations of (0.769), (0.923), (0.824), and (0.756), respectively. We note that the highest levels were achieved in the dimensions of international publishing and scientific research and global quality, which indicates that the university seeks to improve its outputs to achieve its goals at the local, international, and global levels to obtain advanced positions in the global ranking of universities and research institutions. This is consistent with what was indicated by.

Table 3. Descriptive statistics for the dimensions of competitiveness.

Competitiveness					
Dimensions	Paragraph	arithmetic mean	Standard Deviation	Coefficient of Variation (%)	Relative Importance
Community Service	**42**	**3.67**	**0.811**	**81.09**	**0.73**
	43	**3.25**	**0.773**	**77.27**	**0.65**
	44	**3.67**	**0.723**	**72.28**	**0.73**
Total		**3.53**	**0.769**		
International Publishing and Scientific Research	**45**	**3.85**	**0.881**	**88.06**	**0.77**
	46	**3.67**	**0.963**	**96.32**	**0.73**
	47	**3.81**	**0.926**	**92.55**	**0.76**
Total		**3.78**	**0.923**		
Global Quality	**48**	**3.75**	**0.699**	**69.92**	**0.749**
	49	**3.64**	**0.849**	**84.8**	**0.728**
	50	**3.72**	**0.924**	**92.35**	**0.744**
Total		**3.70**	**0.824**		
Service Marketing	**51**	**3.81**	**0.730**	**72.95**	**0.76**
	52	**3.36**	**0.799**	**79.93**	**0.67**
	53	**3.43**	**0.738**	**73.83**	**0.68**
Total		**3.53**	**0.756**		

Source: Prepared by researchers based on statistical analysis outputs

Validity and Reliability

The scale's items were pre-tested for their relevance, face validity, interpretability, and academic readability. Therefore, some minor modifications and changes in wording were required to suit the context of an AL-iraqia university. The scales demonstrated good internal consistency. As shown in Table 4, Cronbach's alpha coefficients were at acceptable levels, greater than the acceptable reliability coefficient. The sustainability strategies variable indicated a level of (0.787), the quality of institutional performance (0.787), and competitiveness (0.941).

Table 4. Validity and reliability coefficients for the research variables

Variables	**Cronbach's alpha**
Sustainability strategies	0.787
Quality of institutional performance	0.787

Competitiveness	0.941

Source: Prepared by the researchers based on the outputs of the statistical analysis

Hypothesis Testing

Using multiple regressions, statistically significant associations were found between sustainability strategies, institutional performance, and competitiveness.

Hypothesis 1

H1 assumes that sustainability strategies (reducing our footprint, addressing risks, valuing our employees, and the circular economy) have a positive impact on the quality of institutional performance at the AL-iraqia university.

To test this hypothesis, we conducted a multiple regression analysis using competitiveness as the dependent variable and the various components of sustainability strategies as predictor variables. Table 5 presents the regression results for the variables.

Table 5. The impact of sustainability strategies on the quality of institutional performance at a significance level of $5 \leq \alpha$

Independent variable	R	R^2	F	β		D.F.	Sig	Dependent variable
Sustainability Strategies	**0.920**	**0.82**	**39.52**	Reducing Our Footprint	**0.598**	**4**	**0.000**	Quality of Institutional Performance
				Addressing Risks	**0.212**	**55**		
				Valuing Our Employees	**0.116**	**64**		
				Circular Economy	**0.112**	**60**		

Source: Prepared by the researchers based on the outputs of the statistical analysis

Table 5 shows that sustainability strategies (reducing our footprint, addressing risks, valuing our employees, and the circular economy) have a significant positive impact on competitiveness. The regression model achieved a high degree of fit, as evidenced by a correlation coefficient (R2) of 0.82 (F = 39.52 <0.001). The results in Table 5 show that all dimensions of sustainability strategies were significant in explaining the quality of corporate performance. These results support Hypothesis H1, which predicted that the dimensions of sustainability strategies: reducing our footprint, addressing risks, valuing our employees, and the circular economy have a positive impact on the quality of corporate performance.

Hypothesis 2

Hypothesis H2 assumes that sustainability strategies (reducing our footprint, addressing risks, valuing our employees, and the circular economy) have a positive impact on the competitiveness of the AL-iraqia university.

To test this hypothesis, we conducted a multiple regression analysis using institutional performance as the dependent variable and the various components of sustainability strategies: reducing our footprint, addressing risks, valuing our employees, and the circular economy as predictors. Table 6 presents the regression results for the variables.

Table 6. The impact of sustainability strategies on competitiveness at the significance level of $0.05 \leq \alpha$

Independent variable	R	R^2	F	β		D.F.	Sig	Dependent variable
Sustainability Strategies	**0.854**	**0.784**	**18.527**	Reducing Our Footprint	**0.602**	**4**	**0.000**	competitiveness
				ddressing Risks	**0.180**	**55**		
				Valuing Our Employees	**0.236**	**64**		
				ircular Economy	**0.163**	**60**		

Source: Prepared by the researchers based on the outputs of the statistical analysis

Table 6 shows that sustainability strategies (reducing our footprint, addressing risks, valuing our employees, and the circular economy) have a significant positive impact on corporate performance. The regression model achieved a high degree of fit, as evidenced by the regression coefficient R2 of 0.784 (F = 18.527 <0.001). The results in Table 6 show that all dimensions of sustainability strategies were statistically significant in explaining competitiveness. These results support Hypothesis H2, which predicted that sustainability strategies (reducing our footprint, addressing risks, valuing our employees, and the circular economy) have a positive impact on competitiveness.

Hypothesis 3

H3 assumes that institutional performance quality (work volume, discipline, task completion, work quality, and continuous improvement) has a positive impact on the competitiveness of AL-iraqia university .

To test this hypothesis, we conducted a multiple regression analysis using competitiveness as the dependent variable and the dimensions of institutional performance quality: flexibility and responsiveness, as predictors. Table 7 presents the regression results for these variables.

Table 7. The impact of institutional performance quality on competitiveness at a significance level of $0.05 \leq \alpha$

Independent variable	R	R^2	F	β		D.F.	Sig	Dependent variable
Quality of Institutional Performance	**0.854**	**0.784**	**18.527**	Quantity of work			**0.000**	competitiveness
				Discipline				
				Task completion				
				Work quality				
				Continuous improvement				

Source: Prepared by the researchers based on the outputs of the statistical analysis

Table 7 shows that institutional performance (quantity of work, discipline, task completion, quality of work, continuous improvement) has a significant positive impact on competitiveness. The regression model achieves a high degree of fit, as reflected in R2 of 0.516 (F = 14.472 <0.001). The results in Table 7 show that the dimensions of institutional performance: quantity of work, discipline, task completion, quality of work, continuous improvement were significant in explaining competitiveness. These results support hypothesis H3, which predicted that institutional performance: (quantity of work, discipline, task completion, quality of work, continuous improvement) has a positive impact on the competitiveness of the AL-iraqia university.

6. Conclusion

Based on statistical analyses and multiple regression results, the study concluded the following:

1. Support for Hypothesis H1: Sustainability strategies, with their four dimensions (footprint reduction, risk management, employee valuation, and circular economy), have a positive and significant impact on the quality of institutional performance. Footprint reduction and risk management were the strongest predictors, reflecting the value of environmental management and governance in improving the efficiency of university operations.
2. Support for Hypothesis H2: Sustainability strategies themselves have a positive impact on competitiveness. Adopting a circular economy and systematically addressing risks leads to improved reputation, increased trust, and increased opportunities for excellence in rankings based on the Sustainable Development Goals (THE Impact).
3. Support for Hypothesis H3: The quality of institutional performance, with its dimensions (volume of work, discipline, task completion, quality of work, and

continuous improvement), contributes to enhancing competitiveness. Especially the dimensions of "quality of work" and "continuous improvement," which are considered levers for raising academic accreditation and reputation.

Practical Recommendations

1. Environmental Footprint and Energy Management: Adopt a gradual zero-carbon plan for the campus (baseline measurement, energy and water efficiency, renewable energy, low-emission transportation), and link key performance indicators to the requirements of THE Impact and the QS Sustainability Pillar.
2. Establish an Enterprise Risk Management (ERM) framework: Align risk identification, analysis, and response processes with ISO 31000, update the risk register at the university, college, and support unit levels, and link it to the decision-making matrix and budgets (URMIA, 2024).
3. Valuing Human Capital: Update incentive and recognition policies based on performance, research, innovation, and community service, and adopt flexible career paths and well-being and psychological support programs that enhance motivation and loyalty.
4. Circular Economy in University Operations: Applying sustainable procurement principles, waste management according to the recycling pyramid (reduce-reuse-recycle), and piloting "circular campus" models (recycling laboratories, furniture and laboratory reuse, smart water/energy systems) guided by specialized university measurement frameworks (CExUNV; Valls Val et al., 2024; Vergani, 2024).
5. Continuous Performance Improvements: Creating an institutional dashboard that aggregates performance indicators for departments and faculties (education, research, community service, sustainability), with quarterly review cycles for institutional learning and correcting deviations.
2. Strengthening the international research and innovation portfolio: Stimulating transdisciplinary research partnerships, business and technology incubators, and visiting researcher programs, thus enhancing innovation, responsiveness, and quality.
3. Roadmap for rankings: Aligning college plans with THE Impact, THE WUR, and QS criteria (reputation, research productivity, internationalization, sustainability, employment outcomes), and appointing implementation teams and "evidence stewards" at each goal/indicator level.

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