Internal Efficiency Analysis: Challenges, and Improvement Strategies
"Case Study - Idlib University"

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Abstract:

This study examined the internal efficiency of the faculties of Idlib University, which currently number 16, to measure the level of internal efficiency across these faculties and identify those that demonstrate comparatively higher internal efficiency than others within the University.

The study adopted a descriptive research design to monitor the performance of Idlib University's faculties from the University's establishment in 2015 to the present. The objective was to generate findings and generalisations that support a clearer understanding of the existing state of efficiency and performance, and to inform subsequent development efforts. As part of this design, a survey-based approach was employed: data were collected, analysed, and interpreted to determine the current status of internal efficiency within the selected faculties.

The study found that the Faculties of Economics, Arts, and Agricultural Engineering were particularly active in terms of research activity and academic publishing. They demonstrated relatively high efficiency in research output, with an efficiency coefficient exceeding one. The findings also indicated that student graduation rates in theoretical faculties were higher than those in other faculties. In addition, a substantial gap was identified between the number of researchers—whether postgraduate students or university faculty holding Master's and PhD degrees—and the volume of research submitted and published annually.

Keywords:

Internal efficiency, educational efficiency, relative efficiency, performance indicators, academic performance, Idlib University.

تحليل الكفاءة الداخلية: التحديات، واستراتيجيات التحسين

"دراسة حالة– جامعة إدلب"

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المستخلص

تناول هذا البحث دراســـة الكفاءة الداخلية لكليات جامعة إدلب والتي بلغ عددها 16 كلية، وذلك بغية قياس مستوى الكفاءة الداخلية الذي تتمتع به هذه الكليات، وتحديد الكليات التي تتمتع بكفاءة داخلية مرتفعة مقارنة مع باقي الكليات في الجامعة.

اتبع هذا البحث المنهج الوصـــفي لرصـــد أداء كليات جامعة إدلب منذ افتتاحها في عام 2015 ولغاية اليوم، والوصـــول إلى نتائج وتعميمات تســـاعد في فهم واقع الكفاءة والأداء وتطويره، واعتمد أسـلوب الدراسـات المسـحية كأحد أسـاليب هذا المنهج، إذ تُجمع البيانات وتُحلل وتُفسير ويُقرر الوضع الراهن لموضوع الكفاءة في كليات جامعة إدلب المدروسة.

توصـــل البحث إلى نتائج مفادها بأن كليات الاقتصـــاد والآداب والهندســـة الزراعية كانت نشـيطة من حيث العمل البحثي والنشـر الأكاديمي، وتميزت بالكفاءة النسـبية المرتفعة في مجال النشـر البحثي، إذ كان معامل الكفاءة لها يزيد عن الواحد. كذلك وكانت كانت نسـب تخرج الطلاب في الكليات النظرية أكبر منها في باقي الكليات، إضـــافة إلى وجود فجوة كبيرة بين أعداد الباحثين ســـواءً كانوا طلاب دراســـات عليا أو أســـاتذة جامعيين من حملة الماجستير والدكتوراة، وبين الأبحاث المقدمة والمنشورة بشكل سنوي.

الكلمات المفتاحية:

الكفاءة الداخلية، الكفاءة التعليمية، الكفاءة النسـبية، مؤشـــرات الأداء، الأداء الأكاديمي، جامعة إدلب.

Introduction:

Higher education and its various institutions hold considerable importance within society due to the role they play in advancing economic and social development. They contribute substantially to supplying the labour market with qualified graduates and the workforce required to meet evolving needs. Moreover, assessing the internal performance efficiency of higher education institutions is a key mechanism for improving the educational process. Accordingly, research on university and higher education efficiency can enhance institutional competitiveness, supporting universities in pursuing excellence and academic leadership.

This study focuses on measuring the internal efficiency of a higher education institution operating in north-west Syria—Idlib University. As one of Syria's emerging universities, Idlib University has taken several steps in education and development since its establishment in 2015. It has sought to strengthen educational quality by offering diverse academic programmes that respond to community needs and labour-market expectations, while also maintaining an interest in scientific research despite the difficult conditions it has faced over the past ten years.

Reference Study and Previous Research:

1- (Baba and Ben Sassi, 2015) entitled: Applying the Data Envelope Analysis Method to Measure the Relative Efficiency of Algerian Higher Education Institutions Under Change Management.

The study aimed to measure the relative efficiency of all types of Algerian higher education institutions during the period 2008-2014. The study variables included: the total number of students enrolled in graduate studies, students enrolled in postgraduate studies, full-time academic staff, and graduate students.

The researcher concluded that the most efficient institutions that were able to use the least number of inputs to achieve an appropriate amount of outputs were the universities of the eastern region and the university centres, in addition to the higher teacher training schools, which achieved full efficiency when taking into account the change in returns to scale. Officials and decision-makers at universities in the central and western regions can also consider the universities of the eastern region as a model to emulate in achieving full efficiency.

2- (Abdelkader, Youssef, 2016) entitled: "An Attempt to Measure the Efficiency of Algerian Universities Using the Data Envelopment Analysis (DEA) Method: A Case Study of Saida University".

The study aimed to apply the DEA method to measure the efficiency of the faculties of Saida University, based on a sample of Algerian universities. Three inputs were used for the model: the number of newly enrolled students, the number of permanent professors and their net annual wages, and one output: the number of successful students over four academic years.

The researcher concluded that the College of Science and Technology and the College of Arts and Languages did not achieve full relative efficiency under the constant returns to scale model with input and output orientations, while they did under the variable returns to scale model with input and output orientations. The College of Law and Political Science did not achieve full relative efficiency under either input or output orientation models. The College of Economics achieved full relative efficiency under both input and output orientations and served as a benchmark for all faculties.

3- (Alabdulmenem, 2017) entitled:

Measuring the Efficiency of Public Universities: Using Data Envelopment Analysis (DEA) to Examine Public Universities in Saudi Arabia.

The study aimed to provide an overview of how universities are managed and organised in Saudi Arabia, with a focus on public universities, and to explain how measuring efficiency can address some of the problems facing higher education institutions in Saudi Arabia. Input variables include faculty and administrators, while output variables include the number of new entrants, enrollment, and graduates.

The researcher concluded that: Although most public universities in the country are efficient, some lag in performance due to the misuse of available resources. The implications of this are discussed, and recommendations are provided.

4- (Maras, 2017) Entitled: A Proposed Vision for Improving the Internal Efficiency of the Qualitative Industrial Technical Secondary Education System in the Arab Republic of Egypt.

The study aimed to develop a proposed vision for improving the internal efficiency of the qualitative technical industrial secondary education system in the Arab Republic of Egypt. It also identified the current demands of the

educational process, identified shortcomings in technical secondary education, and developed a proposed vision for raising the level of internal efficiency of technical industrial secondary education institutions.

The study reached several results, including that Qualitative technical industrial secondary schools are more committed to maintaining links with the labour market than regular industrial schools. There was a clear interest on the part of technical industrial school administration in developing policies that serve the school's strategy, making the school's organisational structure more flexible in responding to different circumstances.

5- (Al-Ajmi, 2020) Entitled: Evaluating the Internal Efficiency of Basic Education Schools in the State of Kuwait, considering the Total Quality Approach.

The study aimed to evaluate the internal efficiency of basic education schools in the State of Kuwait, considering the Total Quality Approach. The study also aimed to develop methods for evaluating and developing the internal efficiency of basic education schools in the State of Kuwait, given its important role in raising children.

In this study, the researcher followed the descriptive and analytical approach, given its importance for this type of study. The study relied on a questionnaire to evaluate the internal efficiency of basic education schools in the State of Kuwait, using a comprehensive quality approach.

The study reached the following results, the most important of which are: There are statistically significant differences in the role of comprehensive quality in raising the internal efficiency of basic education schools in childcare.

6- (Abbas et al., 2021) entitled: Using Data Envelope Analysis to Measure the Relative Efficiency of Shendi University Colleges.

The study aimed to measure the relative efficiency of Shendi University colleges by identifying efficient and inefficient colleges using data envelopment analysis and seeking to improve the inefficient colleges. The researcher used the analytical approach, and the study examined variables related to the number of professors, the number of enrolled students, the number of credit hours, and the number of graduates.

The researcher concluded that: The College of Nursing and the College of Arts achieved relative efficiency in the two output orientation models for each of (BCC, CCR), and the rest of the other quantities did not achieve

relative efficiency in the two previous models, except for the quantity of education and law, which achieved relative efficiency in the BCC model.

7- (ÇETİN, MARAL, 2022) Entitled:

An Analysis of Research on the Efficiency of Higher Education in Turkey.

The study aimed to analyse the efficiency of higher education institutions, improve the scope of research, and determine the efficiency of educational policy analysis and strategic research. Input variables include faculty and administrators, while output variables include the number of new entrants, enrollment, and graduates. The study included variables such as the number of students, the number of graduates, the student-to-faculty and staff-to-teacher ratio, the number of graduate students, and the number of research fields per academic staff member.

The researcher concluded that: Data Envelopment Analysis, a non-parametric method, is most used as an efficiency analysis method in the research conducted. The number of employees, financial inputs, number of students, material resources, and number of units represent almost the entire set of inputs used in efficiency analysis in research. It was also concluded that three inputs and three outputs are commonly used in research.

Distinctive features of the current study compared to previous research:

The present study differs from prior studies in that it focuses on a relatively newly established university, approximately ten years old. This institutional context means that the University and its faculties have a particular need for research that evaluates performance efficiency and assesses levels of internal efficiency. Such evidence-based assessment can support the University's efforts to improve its operational and academic performance, align more closely with the trajectory of more advanced universities, and ultimately strengthen its competitive position among local higher education institutions.

Methodology:

Research Problem:

Despite the significant expansion witnessed by Idlib University since its establishment up to the present day—reflected in the increase in the number of faculties and academic programs, the growth in enrolled student numbers, the rise in the number of graduates, and the expansion of administrative and

teaching staff across its faculties—the University has not yet achieved advanced positions in the Webometrics ranking, despite the improvement recorded in the most recent edition. This improvement can be leveraged as a competitive advantage for the University. In 2024, Idlib University was ranked 18,708 globally and 23rd nationally. In light of these standings, the research problem emerges from the need to enhance the University's internal efficiency, which in turn is expected to strengthen its external effectiveness and consequently improve its ranking at the national, Arab, and global levels. This requires researching to examine the current state of institutional performance and to identify existing areas of weakness and shortcomings.

The main research question is: What is the current state of internal efficiency within the faculties of Idlib University, and what is the level of this efficiency?

The research problem can be summarised in the following questions:

1- What is the level of internal efficiency in each faculty of the university?
2- Which faculties have achieved relatively high efficiency compared to other faculties?

Importance of the Research:

The importance of the research stems from several points, the most important of which are:

1- The vitality of the topic it addresses, which is considered a tool for societal development and a means for achieving its renaissance.
2- This research is a serious scientific attempt to fill the clear gap in the field of scientific research in the field of university college efficiency. Therefore, the results obtained by the study are expected to contribute to enriching the university library.
3- The research can help analyse internal efficiency and determine how the university's internal resources are used, thereby improving the sustainability and efficiency of these resources.
4- Studying the university's internal efficiency can serve as an incentive for it to improve teaching methods and scientific research.

Research Objectives:

This research seeks to achieve the following:

1. Analysing the reality of internal efficiency in the faculties at Idlib University.
2. Measure and evaluate the internal efficiency of the faculties at Idlib University.
3. Propose mechanisms to improve efficiency in the faculties studied.

Research Hypotheses:

The research seeks to verify the following hypothesis: The faculties of Idlib University are distinguished by achieving high levels of internal efficiency according to graduate statistics and research.

Research Variables:

The research addressed the following variables:

- Inputs: Number of enrolled students, Number of faculty members, Number of administrative staff.
- Outputs: Number of graduating students - Number of published scientific research.

Research Community:

The study population consists of the faculties of Idlib University. Idlib University currently comprises 16 faculties, including engineering, medical, and applied faculties, as well as theoretical (humanities and social science) faculties. However, the Faculties of Architecture and Health Sciences were excluded due to their recent establishment and the fact that no student cohorts have yet graduated from them. Accordingly, the study adopted a comprehensive survey approach (census method), whereby data were collected from all members of the target population. This approach enables rigorous justification and precise analytical treatment of the information and data available regarding a given phenomenon. It supports the identification, classification, and ordering of purely descriptive data and facts, while also seeking to distinguish and interpret scientific and relational dimensions— or those carrying specific implications—clearly and objectively.

Research Methodology and Tool Used:

The descriptive method was used as the scientific method most appropriate for the nature of this study, as it aims to determine the reality of internal efficiency in the faculties of Idlib University.

The data necessary for the study and testing of research hypotheses were collected using statistics available from the Directorates of Administrative Affairs, Student Affairs, and Graduate Studies, as well as the Idlib University Research Journal. The data were analysed using specialised computer programs, including Excel and SPSS.

Research Limits:

- Objective Limits: The research addresses the evaluation and analysis of the university's internal efficiency.
- Spatial Limits: The colleges of Idlib University.
- Temporal Limits: The period includes the period from the beginning of the establishment and founding of the university in 2015 until the academic year 2024-2025.

Introduction:

Higher education and university education are important stages in the formation of human resources and the workforce in any country. This education contributes to equipping students and graduates with advanced skills and developing their academic expertise, in line with the needs of the labour market and contributing to its development. This drives higher education to provide efficient teaching methods and strategies that meet the required international standards. The concept of efficiency in general, and the efficiency of higher education in particular, has received the attention of many governments and countries, given its impact on the quality and performance of educational institutions. Measuring efficiency and providing the necessary standards and tools for this purpose contribute to understanding performance levels in institutions and universities.

The Concept of Efficiency

The concept of efficiency refers to the ability to achieve objectives by maximising outputs with the minimum possible inputs.

Efficiency in universities refers to the efficient use of all types of resources (financial, human, administrative, etc.), as well as the extent to which the

required standards are met for quality higher education and scientific research.

Efficiency represents the optimal use of available resources to produce quality outputs and is assessed according to technical efficiency or distributive efficiency (Al-Hindawi Al-Mahdi, Salah Al-Din, 2013).

The Organisation for Economic Co-operation and Development (OECD) defines efficiency as: "The extent to which resources—inputs—(money, expertise, time, etc.) are transformed into results economically" (Mansouri, 2010).

Teaching competence is defined as (Ghunaim & Al-Jahmi, 2008):

"The set of knowledge, skills and attitudes that the teacher acquires as a result of going through a specific program that enables him to perform his educational tasks efficiently and effectively, which contributes to achieving the desired educational aspects for the students".

Educational efficiency is divided into two types (Abdel-Aal, 2010):

1- Internal efficiency: This refers to the educational system's achievement of its goals internally, i.e., the relationship between inputs and outputs. In other words, it is the degree of rational use of inputs.

Internal efficiency also reflects the extent to which a college or university succeeds in achieving its educational goals while making optimal use of available resources (human, financial, material).

2- External efficiency: This reflects the extent to which the educational system responds to the requirements of the labour market by providing the required numbers and appropriate qualifications to fill the professions needed by various institutions and economic activities. This response is represented in the number of graduates from each specialisation, the quality of skills and knowledge acquired by the graduate, their level, and the extent to which they match the requirements of the labour market. (Abduljawad, 2015)

Quantitative efficiency concerns quantity and number, while qualitative efficiency concerns quality and type.

Regarding technical (productive) efficiency, it expresses the distribution of economic resources in a manner such that no redistribution can achieve a single unit increase in the production of a commodity without reducing the production of another commodity (Al-Akeili, 2000).

Economic efficiency, on the other hand, is achieved in the use of resources by obtaining the maximum amount of production with a given number of resources or obtaining a certain amount of production with the minimum amount of resources (Al-Manoufi et al., 2016).

Thus, it can be said that economic efficiency in universities is achieved by reducing inputs to a level that allows for the same outputs, or by increasing outputs using a given level of inputs.

The current state of the higher education sector in Idlib:

The higher education sector in Idlib has faced substantial challenges as a result of the security and humanitarian conditions experienced over the past ten years. These challenges include inadequate and damaged infrastructure, limited funding, and overcrowded classrooms. Such conditions contribute to an uncertain outlook and create a learning environment constrained by significant material and logistical difficulties.

Educational institutions, including Idlib University, suffer from a shortage of the infrastructure required to support the teaching and learning process. In addition, many of the currently available facilities are not suitable for use as university buildings, as they are leased school premises. Consequently, Idlib University requires additional purpose-built facilities equipped with essential infrastructure, supplies, and laboratories.

The University also faces a funding deficit, as it relies primarily on student tuition fees. This has a direct negative impact on the quality of education and results in shortages of essential supplies and classroom equipment. Furthermore, overcrowding in classrooms has become a notable challenge due to the limited number and small size of lecture halls. This makes it difficult for instructors to provide adequate support to individual students and limits the feasibility of applying modern teaching methods..

- Practical Aspect and Data Analysis:

Data was collected from all 16 faculties at Idlib University. This was achieved by consulting the Student Affairs and Administrative Affairs Directorates, the Idlib University Research Journal, and the Graduate Studies Directorate to obtain the necessary data for the study, including: the number of students enrolled and registered at the university, the number of students graduating from the university, the number of instructors in all university faculties, the number of administrative staff, and the number of published scientific research papers by both teaching staff and graduate students.

These faculties are shown in the following table:

Table No.1: University Faculties

Applied and Theoretical Colleges	Engineering Colleges	Medical Colleges
Economics and Administration	Civil Engineering	Human Medicine
Sharia and Law	Computer Engineering	Pharmacy
Arts and Humanities	Electrical Engineering	Dentistry
Education	Mechanical Engineering	Health Sciences*
Science	Agricultural Engineering	Veterinary Medicine
Architecture*		

The Importance of Measuring Internal Efficiency:

Measuring internal efficiency helps improve performance, as it identifies strengths and weaknesses in the university's academic and administrative processes. It contributes to ensuring the quality of education by providing high-quality education that meets the needs of students and the labour market. It also rationalises the use of resources, helps reduce waste, improves the utilisation of available resources, and achieves the satisfaction of stakeholders, particularly students, faculty members, and administration.

Indicators Used to Measure the Internal Efficiency of University Colleges:

1 -Academic Indicators:

The on-time graduation rate was used as a metric, where the graduation rate for each college or institute was calculated by dividing the number of students who graduated within the allotted time by the total number of enrolled students. The appendix shows the number of students and the number of graduates in the colleges studied during the 2023-2024 academic year. The results obtained are shown in the following table:

The results obtained were as shown in the following table:

Table No.2: Graduation Rates in University Colleges

Top 5 colleges in graduation rates			The 5 lowest colleges in graduation rates	
College	Graduation Rate		College	Graduation Rate
Education	92%		Veterinary Medicine	16%
Science (Physics)	70%		Science (Biology)	21%
Computer Engineering	63%		Science (Mathematics)	23%
Literature (Arabic Language) + Institute of Medical Equipment	52%		Agricultural Engineering + Dentistry	31%
Literature (Geography)	49%		Civil Engineering	34%

Based on the analysis of graduation-rate data, the results reveal a clear variation across faculties. These patterns reflect academic and institutional trends that warrant systematic evaluation and targeted improvement. The highest graduation rate was recorded in the Faculty of Education. This may be attributed to the quality of the academic programmes offered and the availability of teaching staff. In addition, theoretical disciplines typically do not require laboratories or intensive practical training, which reduces technical complexity and the obstacles that may delay graduation. Assessment in many theoretical courses also relies on research assignments, academic papers, and written examinations, which can be retaken or compensated for relatively easily compared with laboratory experiments or technical projects. Moreover, the nature of the content—often centred on understanding and analysis rather than memorisation or highly precise technical skills—may contribute to higher pass rates. Students in theoretical fields can also depend more heavily on independent study and external learning resources, enabling them to overcome academic difficulties without the need for specialised institutional resources.

Graduation rates were also relatively high in both the Faculty of Science and the Faculty of Informatics Engineering. These two faculties are characterised by applied curricula, which may strengthen students' academic engagement and continuity.

In general, it can be argued that higher graduation rates in theoretical faculties are not an absolute rule; however, they represent a common pattern across many educational institutions worldwide.

By contrast, faculties with scientific and professional specialisations (such as engineering, medicine, computer science, and the natural sciences) often require compulsory attendance to meet minimum attendance thresholds. They also demand a deep understanding of complex mathematical and scientific content, which can make them academically more challenging. Many of these programmes rely heavily on practical experiments and applied projects that require additional time and effort, increasing the academic burden on students. Furthermore, such disciplines typically require longer study hours and continuous engagement with ongoing technical and scientific developments, which may reduce persistence among some students. The extended duration of study and the difficulty of specialisation in certain medical and engineering faculties may also negatively affect students' continuity and progression.

The lowest graduation rate was recorded in the Faculty of Veterinary Medicine. This outcome may be associated with the difficulty of the curriculum, limited academic support, or external factors such as students' social and economic circumstances.

2- Administrative Indicators:

The student-to-faculty ratio was used as an indicator, calculated by dividing the number of students in each college by the number of professors in the same college to obtain the student-to-professor ratio. The results are shown in the following table:

Table No.3: Student-to-faculty ratio

ID	College	Student-to-faculty ratio	ID	College	Student-to-faculty ratio
1	Mechanical Engineering	27	9	Human Medicine	56
2	Agricultural Engineering	30	10	Sharia and Law	66
3	Veterinary Medicine	31	11	Civil Engineering	79
4	Science	35	12	Arts	91
5	Architecture	36	13	Economics and Administration	128

6	Electrical and Electronic Engineering	51	14	Dentistry	157
7	Pharmacy	55	15	Education	162
8	Information Engineering	55	16	Technical Institute for Financial and Administrative Sciences	235

The previous table indicates that the student-to-faculty ratio in scientific and applied faculties—such as engineering faculties, medical faculties, and applied sciences—is higher than in theoretical faculties (e.g., Arts, Economics, Education, and others). This is largely because scientific faculties require practical instruction in laboratories and depend on specialised labs, expensive equipment, and costly consumable materials. Such requirements typically necessitate smaller student groups to ensure safety and maintain learning quality, which places substantial financial pressure on institutions and may lead them to increase the number of students per instructor as a way to offset costs.

In addition, students in scientific and applied fields often require direct supervision during experiments, which affects instructional capacity and shapes how teaching loads are organised. By contrast, theoretical faculties such as Arts and the social sciences generally do not require laboratories, high-cost equipment, or intensive practical training. This allows universities to accommodate larger numbers of students in lectures and classrooms. Universities also tend to expand enrolment in theoretical disciplines because they are less operationally expensive, helping institutions maintain financial balance and reallocate resources toward programmes that require greater investment. Moreover, theoretical specialisations are often popular and attract large numbers of applicants, encouraging universities to admit more students without a proportionate increase in the number of faculty members.

Overall, the student-to-faculty ratio can be considered an important indicator of the quality of the educational environment and the degree of individual attention students are able to receive. The lower this ratio, the more it generally signals a stronger learning environment and higher educational quality.

3- Research Indicators:

The scientific research productivity indicator was considered by counting the number of research papers published in peer-reviewed journals per faculty member.

This indicator was calculated by dividing the number of faculty members by the number of published research papers, to obtain the research publication rate and productivity of each researcher in all university colleges. The results were as shown in the following table:

Table No.4: Research productivity of faculty members

ID	College	Research productivity	ID	College	Research productivity
1	Human Medicine	0.0	9	Sharia and Law	0.2
2	Electrical Engineering	0.0	10	Education	0.3
3	Civil Engineering	0.0	11	Veterinary Medicine	0.4
4	Architecture	0.0	12	Science	0.5
5	Dentistry	0.0	13	Agricultural Engineering	1.3
6	Pharmacy	0.0	14	Arts	1.4
7	Information Engineering	0.0	15	Economics and Administration	1.7
8	Mechanical Engineering	0.1			

The results presented in the previous table show that the highest level of contribution to scientific research and the publication of research papers was recorded in the Faculty of Economics and Management, followed by the Faculty of Arts. In contrast, no research contribution was observed for an entire year in the medical faculties and in some engineering faculties. This can be attributed to the fact that the aforementioned faculties (particularly Economics and Arts) rely heavily on qualitative and quantitative analysis of data that is relatively accessible—such as published datasets, questionnaires, interviews, archives, and textual sources. This type of research generally does not require costly studies or complex experimental procedures. Similarly, research in the Faculty of Agricultural Engineering often combines theoretical work with field-based application, and is typically less costly and less technically complex than research conducted in medical laboratories or highly specialised experimental settings.

These findings indicate lower research productivity among academic staff in scientific and applied faculties compared with their counterparts in theoretical faculties. This difference may be explained by several factors. Research in scientific fields (e.g., engineering, medicine, chemistry, and physics) usually requires well-equipped laboratories, advanced instruments, and expensive raw materials, whereas research in theoretical fields (such as Arts and Economics) depends more on library-based sources and conceptual or theoretical analysis. Laboratory experiments and field applications also require longer periods for preparation, implementation, and data interpretation, compared with theoretical research that may centre on textual analysis or theoretical modelling.

In addition, scientific fields often require interdisciplinary collaboration, as well as links to industry or external institutions, which can make the completion and publication of research more difficult. Applied research may also be subject to stricter review processes and longer publication timelines in peer-reviewed journals due to the need for repeated testing and verification of results, relative to many theoretical studies. Moreover, some theoretical faculties may place stronger emphasis on publication output as a key criterion for academic promotion, whereas applied faculties may prioritise other indicators, such as practical competence or contributions to applied projects.

Overall, the faculties that demonstrated comparatively high relative efficiency in research publication were the Faculties of Economics, Arts, and Agricultural Engineering, with efficiency coefficients exceeding one. In contrast, the remaining faculties did not reach the desired efficiency level, as their coefficients remained below one. This may be linked to the greater capacity of these faculties to admit larger numbers of postgraduate students, their limited reliance on advanced laboratories or high-cost equipment and consumables, and the lower per-student teaching cost compared with applied faculties.

Results:

The research reached a set of results, the most important of which are:

1. The varying and inconsistent ability of students to keep up with academic requirements leads to lower success rates.
2. There are significant differences in success rates between different colleges and disciplines within the university.
3. The faculties of Economics, Arts and Agricultural Engineering were distinguished by their relatively high efficiency in research work and academic publishing, which means that these faculties were the most prolific in publishing scientific research.
4. The graduation rates of students in theoretical faculties were higher than in other faculties, indicating that the length of stay in these faculties was shorter.
5. There is a significant gap between the number of researchers in the university, with master's and doctoral degrees, and the research submitted and published annually.
6. The small number of students and the abundance of teaching and administrative staff in the scientific and applied colleges contribute to an increase in costs compared to the revenues collected, and this imposes additional financial burdens on the university.
7. An increase in the number of students in some colleges, particularly theoretical colleges, compared to the number of teaching and administrative staff.
8. Some challenges stand out in the university, especially those related to the lack of accurate data, information and statistics about the infrastructure, teaching staff, human resources, and the skills and experiences of the staff.
9. The a lack of standards and indicators through which the quality of teaching and the effectiveness of scientific research can be measured quantitatively and objectively.

Recommendations:

The research concluded with a set of recommendations, the most important of which are:

1. Control the number of students admitted annually to the university in various colleges and specialisations, and make it proportional to the number of administrative and teaching staff.
2. Encourage research publication and research, including applied research, by including research publication in the criteria for the periodic evaluation of teaching staff, or by providing incentives for scientifically active staff.
3. Making practical application the focus of learning instead of solely theoretical exams and assessing students through projects that simulate real-world problems in the job market, contributes to higher graduation rates in applied colleges.
4. Training faculty and administrative staff on the latest practices in teaching, learning, and administration, supporting e-learning platforms and facilitating communication between students and faculty.
5. Providing standards and indicators through which the performance of educational and administrative staff in the university can be measured.
6. Implementing electronic systems for managing student affairs and resources reduces errors, saves time, and contributes to providing educational services as quickly as possible.
7. Providing data and information about students and the educational process facilitates the decision-making process.
8. Use digital technology to eliminate unnecessary steps, streamline processes and procedures, and make them smoother and more flexible.

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Appendix
Table No.5: Number of students and number of graduates

College	number of teachers	number of graduates	annual student enrollment	College	number of teachers	number of graduates	annual student enrollment
Science (Physics)	43	40	57	Education	14	338	365
Science (Biology)	43	22	104	Veterinary Medicine	8	10	61
Science (Mathematics)	43	21	91	Computer Engineering	13	76	120
Agricultural Engineering	20	37	120	Arabic Language and Literature	45	147	281
Dentistry	3	29	94	History and Literature	45	52	128
Civil Engineering	8	35	102	Geography and Literature	45	46	94
Engineering Institute	8	25	59	English Language and Literature	45	113	293
Computer Institute	6	70	222	Medicine	32	126	300
Economics and Management	9	104	288	Pharmacy	17	86	185
Electrical Engineering	8	32	86	Institute of Administrative Sciences	5	279	586
Mechanical Engineering	8	19	42	Institute of Medical Equipment	3	34	65

Table No.6: Number of students and number of graduate

College	Number of researchs	Number of graduate students	College	Number of researchs	Number of graduate students
Economics and Management	4	10	Agricultural Engineering	25	39
Sharia and Law	27	54	Dentistry	0	0
Arts	35	40	Civil Engineering	0	0
Electrical Engineering	1	1	Mechanical Engineering	8	10
Education	0	4	Sciences	8	19
Veterinary Medicine	5	9	Medicine		
Information Engineering	0	0	Pharmacy	2	2