

A Comparative Analysis of the Baghdad and Babylon Universities: Exploring Factors Affecting Their Competitiveness in World University Rankings

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Received date: 19 /6 /2023 Acceptance date: 23 /7 /2023 Published date: 15/12/2023

Doi: <https://doi.org/10.36473/ujhss.v62i4.2279>



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Abstract

In recent years, global university rankings have gained popularity as a means of evaluating the quality of higher education institutions because they provide valuable insights into the best institutions around the globe; therefore, employers, academics, and students use this ranking to decide from where to hire new employees, where to pursue higher education, and where to conduct research. This holds true for Iraqi universities as well, as they strive to assess their standing and competitiveness on a global scale. In this study, the findings of Baghdad and Babylon universities in the Times Ranking are analyzed and compared. Additionally, the factors, that affected their ranking, over six years (2017-2022) are also examined. This study aims to shed light on the advantages and disadvantages of every educational institution by analyzing a variety of variables, including teaching, international outputs, industry outcome, quality of research, academic performance metrics, and citations. It also strives to identify the features that set each one apart from the others. In order to conduct a comparative analysis, this study use the data of the Times World University Rankings, which is regarded as one of the most trustworthy and that provide accurate indicators of any university performance and Elsevier's Scopus databases. The results of this study point out areas for development and give legislators, administrators, and prospective students a thorough grasp of the major factors affecting these two universities' rankings.

Keywords: Universities Ranking, University of Baghdad, University of Babylon, Competitiveness

تحليل مقرن لجامعتي بغداد وبابل : استكشاف العوامل المؤثرة على قدراتها التنافسية في التصنيف العالمي للجامعات

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المخلص

اكتسبت تصنيفات الجامعات العالمية في السنوات الاخيرة شعبية كوسيلة لتقييم جودة مؤسسات التعليم العالي ؛ لأنها توفر رؤى قيمة حول أفضل المؤسسات في جميع أنحاء العالم؛ لذلك، يستخدم أصحاب العمل والأكاديميون والطلاب هذه التصنيفات لتحديد من أي مكان يمكن توظيف موظفين جدد، ومتابعة التعليم العالي، وإجراء البحوث. ويصدق هذا على الجامعات العراقية أيضا، حيث تسعى جاهدة لتقييم مكانتها وقدرتها التنافسية على نطاق عالمي. في هذه الدراسة، يتم تحليل ومقارنة نتائج جامعتي بغداد وبابل في تصنيف التايمز العالمي. فضلا عن ذلك، يتم فحص العوامل التي أثرت على تصنيفهما على مدى ست سنوات (2017-2022). تهدف هذه الدراسة إلى تسليط الضوء على مزايا وعيوب كل مؤسسة تعليمية من خلال تحليل مجموعة متنوعة من المتغيرات، بما في ذلك التدريس، والمخرجات الدولية، ونتائج الصناعة، وجودة البحث، ومقاييس الأداء الأكاديمي، و الاستشهادات. كما تسعى لتحديد الميزات التي تميز كل واحدة عن غيرها. من أجل إجراء تحليل مقارنة، تستخدم هذه الدراسة بيانات تصنيف مؤسسة التايمز البريطانية، والتي تعتبر واحدة من أكثر التصنيفات التي توفر مؤشرات موثوقة ودقيقة للأداء الجامعي و أيضا قواعد بيانات Elsevier's Scopus. تشير نتائج هذه الدراسة إلى مجالات التطوير وتعطي المشرعين والإداريين والطلبة المحتملين فهما شاملا للعوامل الرئيسية التي تؤثر على تصنيفات هاتين الجامعتين.

الكلمات المفتاحية: تصنيف الجامعات ، جامعة بغداد ، جامعة بابل ، التنافسية

Introduction

Higher education institutions play a crucial role in the development of a nation's economy, culture, and society. As globalization continues to connect countries and foster international collaborations, universities are increasingly being assessed and ranked on a global scale. World university rankings, or (WURs) have gained a lot of popularity recently as they use various methodologies to evaluate the relative impact of each university on science and teaching, (Rauhvargers, 2011). These rankings play a crucial role in shaping the perception and reputation of universities

worldwide. They provide valuable insights into the quality of education, research output, and global influence of each institution.

Universities' competitiveness in international rankings depends on a variety of variables such as academic excellence, research output, faculty credentials, international collaborations, infrastructure, student satisfaction, and financial resources (Marginson, 2018). In terms of competition of Iraqi universities in global rankings, it has started since 2012 when the University of Baghdad had been ranked in QS Ranking. However, the story of Iraqi universities' competition in the Times Ranking has begun in the 2018 edition when the University of Baghdad obtained 801+ positions, which was the first university to be ranked from Iraq. Moreover, the number of Iraqi universities in the Times Ranking has increased notably since that time as the results of the 2023 edition show that 8 universities (Babylon University, University of Technology, University of Anbar, University of Baghdad, University of Basrah, University of Kufa, University of Mosul, and Mustansiriyah University) have been ranked and Babylon University occupies a higher position (601+) compared to other 7 Iraqi universities. However, the results show that the University of Baghdad's position has been negatively decaling than the years before as it achieved (1500+) compared to (801+) in the 2018. More importantly, according to the findings, young universities such as Babylon University, University of Technology, and University of Anbar exceed the oldest universities such University of Baghdad, University of Basrah, University of Mosul, and Mustansiriyah University in the ranking (THE ranking, 2023). A question, therefore, needs to be asked and an exploration should be made about why young universities in Iraq achieved higher positions than the oldest universities.

For this study, Babylon University and the University of Baghdad have been chosen to be the target for several reasons. Firstly, both are two prominent higher education institutions in Iraq and have made significant strides in recent years in terms of academic excellence, research outputs, and international collaborations. However, there are notable differences between the two institutions that affect their competitiveness in world rankings. Secondly, the University of Baghdad is the oldest institution in Iraq which was established in 1957 and the results of 2023 Times ranking illustrate that it is clearly becoming difficult for the University of Baghdad to maintain or improve its position in the ranking. On the other hand, Babylon University is a young institution that was founded in 1991 and recently

joined the ranking with a high position as mentioned above. To evaluate Baghdad and Babylon Universities' competitiveness in world rankings, it is crucial to understand the key factors contributing to these rankings. The Times Higher Education World includes diverse inductors which can provide comprehensive understanding of any institution's performance. It uses 5 performance indicators, including teaching (30%), research (30%), citations (30%), international outlook (7.5%), and industry income (2.5%). By using these various factors and indicators, the competitiveness of Baghdad and Babylon Universities in world rankings, can be thoroughly analyzed. Therefore, this research will shed light on these crucial elements that affect the rankings of the University of Baghdad and the University of Babylon as well as highlighting areas that need improvement. Additionally, there isn't a lot of research about Baghdad and Babylon Universities specifically, despite the fact that there is a growing body of literature on university rankings and factors affecting competitiveness. By conducting a comparative analysis of these universities and investigating the variables that affect their competitiveness in global rankings, this research paper aims to fill this knowledge gap. By doing so, this study advances knowledge of Iraq's higher education system and offers suggestions for raising these institutions' standings and all-around effectiveness. Finally, understanding the factors affecting their competitiveness in world rankings is essential for policymakers and university administrators to enhance the quality of education and research in Iraq.

1. Literature Review

2.1 Introduction

This literature review explores the existing research on competitiveness, university rankings, and the factors that impact them. Specifically, it centers on a comparative study of Baghdad and Babylon Universities, seeking to uncover the elements that influence their competitiveness in global rankings. The history of world university rankings can be traced back to the early 20th century, when educational institutions started seeking ways to measure and compare their academic excellence on a global scale. Raymond Hughes suggested the ranking methodology in the earlier year of 1924. (Myer & Robe, 2009; Shin & Toutkoushian, 2011). The success of graduates in later life, faculty expertise, the faculty-to-student ratio or library volumes ,and academic resources were all used as "dimensions of quality" in earlier rankings (Hazelkorn, 2009) However, it was not until the mid-20th century that formal ranking systems began to emerge. In 1945, the United Nations Educational,

Scientific, and Cultural Organization (UNESCO) took the first step by establishing an International Association of Universities to promote cooperation and exchange among universities worldwide. This paved the way for more comprehensive ranking methodologies to be developed. More recently, formats have relied more on reputational indicators, such as the Science Citation Index, which was first published in 1961 and was updated annually thereafter, and the Social Science Citation Index, which was first published in 1966 and was updated annually (Hazelkorn, 2011). Fast forward to the late 21st century, Shinghi Ranking is another name for “Academic Ranking of World Universities (ARWU)”, One of the annual publications of the World University Rankings. It was originally created and released by Shanghai Jiao Tong University in 2003, and is the first multi-indicator global university ranking. Since 2009, it has been issued by Shanghai Ranking Consulting Company, an independent organization. University rankings are based on alumni and staff winners of the Nobel Prize or Fields Medal, most cited researchers, publications in Nature and Science journals, and academic performance. This groundbreaking initiative sparked a wave of interest in university rankings, leading other organizations like Times Higher Education (THE) and Quacquarelli Symonds (QS) to develop their own methodologies in 2004. These rankings took into account various factors such as teaching quality, international diversity and research. According to Jacek (2017), research productivity, including the number of publications, citations, and research grants, has also been found to be crucial. Faculty qualifications, such as the proportion of highly qualified faculty members with advanced degrees, contribute to a university's overall reputation. Additionally, international collaborations, infrastructure facilities, student satisfaction, and financial resources are factors that impact a university's competitiveness and ranking position. Therefore, the ranking position of a university is influenced by a number of factors, that have been identified. Numerous studies have looked into the factors affecting where universities appear in global rankings.

However, academics are paying more attention to comparative studies that examine the competitiveness of universities. These studies frequently compare universities within one nation or among various nations. Researchers can determine the strengths and weaknesses of universities and gain insights into their competitiveness in global rankings by looking at factors like research output, faculty qualifications, infrastructure, international collaborations, and student satisfaction. For university administrators, policymakers, and stakeholders

interested in enhancing institutional performance and reputation, such analyses offer useful information. When it comes to Iraq higher education sector, numerous difficulties and barriers have affected the growth and effectiveness of Iraq's higher education institutions. Universities in Iraq are struggling to provide high-quality instruction and opportunities for research because of political unrest and financial constraints (Jameela & Ahmad, 2020). The challenges faced by Iraqi universities have also been made even more difficult by a lack of resources and infrastructure. Iraqi universities have struggled to achieve high positions in the global rankings of universities due to a number of factors. These elements include a lack of international collaborations, inadequate facilities, and a lack of adequate funding for research and development (Jameela & Ahmad, 2020). The research output, international stature, and capacity of the universities to draw the best faculty and students have all been impacted by these restrictions.

Attempts have been made to raise the performance and rankings of Iraqi universities despite these obstacles. Iraq's Ministry of Higher Education and Scientific Research has put strategic plans and policies into place to raise university standards and make them more competitive internationally (Al-Rawi, 2018). These programs put a special emphasis on encouraging top-notch research, encouraging global partnerships, and raising standards for instruction and learning.

While Iraqi universities face significant obstacles, it is important to note that some institutions have made notable advancements in international rankings. For instance, the universities of Baghdad and Babylon have received recognition in global rankings for particular subject areas like engineering and computer science (THE World University Rankings). These accomplishments show that Iraqi universities have the ability to compete internationally in some academic fields.

It is essential to address the underlying issues if Iraqi universities are to further raise their standing and rankings internationally. This calls for increased funding for scientific research, sustained investment in research infrastructure, and bolstered international partnerships and collaborations (Jameela & Ahmad, 2020). The reputation and rankings of Iraqi universities in the international arena can also be improved by fostering an innovative culture, encouraging entrepreneurship, and raising educational standards. However, rankings are crucial for many university missions, including managing research and student instruction (Pouris & Pouris, 2010). Additionally, Iraq and other developing nations use this ranking to develop and improve higher education factor that influence universities rankings (Liu &

Cheng, 2005; Yazit & Zainab, 2007). In sum, around the world, there has been a growing focus on university rankings, which play a vital role in evaluating the quality and reputation of higher education institutions and students, policymakers, researchers, and others heavily rely on these rankings to make important decisions.

2. Methodology

In this study, the secondary data analysis was used as method which refers to use the data that is already available and analyzed in order to answer a new question or to conduct a new research (Donnellan & Richard, 2013). To obtain an existing data, official statistics, previous research, data repositories, official records and previous surveys can be the main sources (Bookstaver, 2021). This research paper employs a comparative analysis methodology to examine the factors affecting the competitiveness in world rankings. The following steps were undertaken to conduct the study:

2.1 Data Collection

The data collection process for this study was comprehensive and diverse, encompassing various sources to ensure accuracy and reliability. To obtain a holistic view of the two universities and to achieve the target of this study, secondary data collection focused on obtaining publicly available data on university rankings, academic performance metrics, research output indicators, and international collaboration. After doing a wide of search about this data, two main sources were identified as they were directly related to this study. The first one was the database of the Times ranking which includes public information about Baghdad and Babylon universities. The second database was the Elsevier's Scopus, specifically Scival tool which can analyze bibliometric collected from the Scopus. It was chosen for several reasons. First of all, the Times ranking highly relies on this database to analyze universities' performance and then rank them. Second, it provides various and comprehensive bibliometric data of institutions such as indexed scholarly output, authors' performance, citations, H-index, collaboration, and subject areas publications.

From Times ranking database, all data that is related to Baghdad and Babylon Universities is collected especially for 2023 edition rank. The data for the THE is located at <https://www.timeshighereducation.com/world-university-rankings>. On the other hand, ranking data from 2017-2022 in Scival was also gathered

downloaded and copied. The data for the SciVal is located at <http://www.https://www.scival.com/landing>. Moreover, Microsoft Excel was used to copy and insert data and each factor had table.

2.2 Data Analysis

The collected data was carefully organized and processed using statistical software and spreadsheet tools to facilitate the analysis. Various comparative analysis methods were employed to explore the intricate connections between different factors and competitiveness. Numbers, percentages, ratios, charts, frequencies, and tables were used to compare the performance of the two universities. By utilizing these techniques, the researcher was able to uncover valuable insights and patterns that shed light on the complex dynamics affecting competitiveness. The comparative analysis allowed for the examination of relationships between variables. Overall, this comprehensive approach to data analysis ensured a robust exploration of factors affecting competitiveness without redundancy or repetition.

2.3 Interpretation of Findings

The analyzed data was interpreted to identify patterns, trends, and significant relationships between factors and competitiveness. Comparative analysis allowed for the identification of strengths and weaknesses of each university in relation to the factors studied. The findings were compared and discussed in light of existing literature and theoretical frameworks.

2.4 Limitations

The study is aware of potential limitations, including data accessibility, sample size, and the generalizability of results. Limitations may occur as a result of the unique context of Babylon and Baghdad Universities, or as a result of the data sources used. Through careful selection of data sources, appropriate statistical methods, and open reporting of the study's scope and context, the researcher tried to address these limitations. Additionally, the study recognizes that is limited to the period time of data collection (2017 to 2022 as Times ranking used the same period to evaluate institutions) and only utilizes the findings of 2023 Times ranking. Moreover, some of data that is used in this study is collected from journals that only have metrics in Scopus database and already indexed in. These limitations could impact the generality and applicability of the findings to other universities and periods of time. To address this, the researcher conducted sensitivity analyses

to assess the robustness of the results and accounted for any potential confounding variables. Furthermore, the study emphasizes the need for further research in different settings to validate and expand upon these findings. By acknowledging these limitations and taking steps to minimize their impact, this study contributes valuable insights into the specific context of Baghdad and Babylon Universities while also highlighting areas for future investigation.

3.6 Ethical Considerations:

While conducting the research, ethical issues were taken into account. - Participants' anonymity and confidentiality, as appropriate, were maintained. The study complied with all applicable ethical standards and laws. An in-depth investigation of the elements affecting Baghdad and Babylon Universities' competitiveness in global rankings is made possible by the methodology described above, which guarantees a systematic approach to conducting a comparative analysis of Baghdad and Babylon Universities. The study seeks to offer insightful information and add to the body of knowledge in the field by employing a strong methodology.

3. Results and Discussion

The study on the ranking of Baghdad and Babylon University based on the Times World University Rankings sheds light on various aspects of these institutions. It reveals their distinct strengths and weaknesses, presenting a comprehensive analysis that goes beyond mere surface-level observations. By delving into different dimensions, such as teaching quality, research output, citations, international outlook, and industry income, the study offers valuable insights into the factors that contribute to their rankings. This research adds to the existing body of literature on university rankings, enriching our understanding of how these assessments are formulated and what they signify. Policymakers can benefit from this information by gaining a deeper understanding of the areas where these universities excel or require improvement. University administrators can utilize these findings to identify strategies for enhancing their institutions' performance in specific domains. Prospective students will find this study particularly useful as it equips them with vital information to make informed decisions about their educational journeys. By considering factors such as reputation, research opportunities, faculty expertise, and overall student satisfaction, they can align their decision.

3.1 Performance in the Times Ranking

To highlight the performance of the Baghdad University and Babylon University, the following figure explains the five main indicators that used by The Times Ranking to assess both universities in global scale and they have been used by utilized the current study to conduct the comparison.

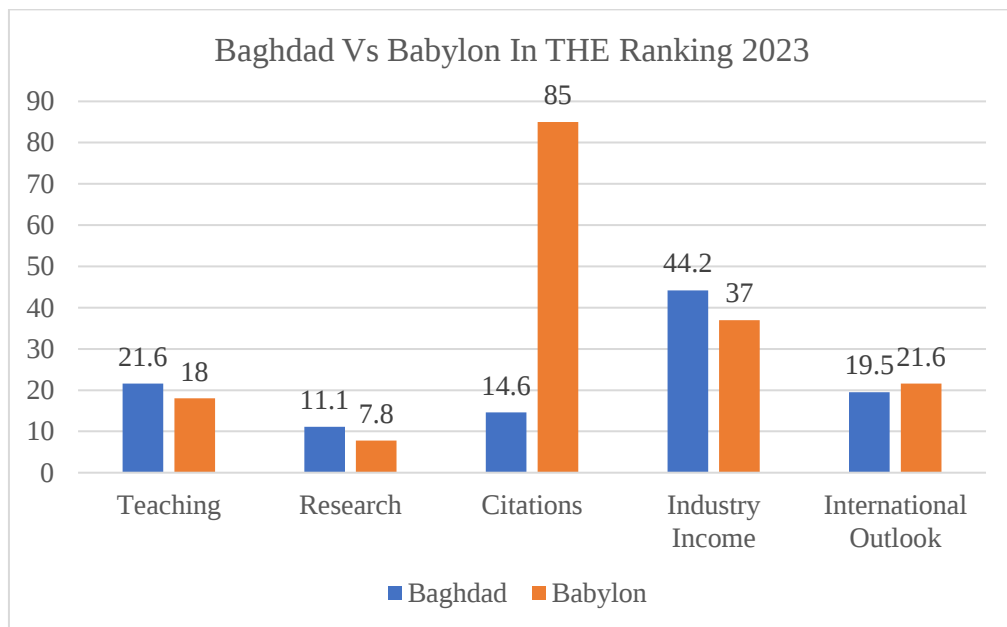


Figure 1 Baghdad Vs Babylon in THE Ranking 2023

The figure (1) provides insights into different aspects of a university's performance, including teaching, research, citations, industry income and international orientation. In terms of teaching, Baghdad University achieved a high score of 21.6 points, which is higher than Babylon University's as scored 18 points. This shows that the University of Baghdad pays more attention to providing quality teaching and quality educational programs.

In terms of research, the University of Baghdad scored higher than the University of Babylon (11.1 compared to 7.8). This shows that the research output and impact of the University of Baghdad is stronger than that of the University of Babylon. A high research value indicates that the University of Baghdad is actively involved in high-quality research, publishes scholarly articles, and contributes to the advancement of knowledge in various fields.

Baghdad University received a citation score of 14.6, while Babylon University received an 85. This suggests that academics within the community give more credit and citation to research done at Babylon University. A higher number of citations suggests that the research conducted at Babylon University is significant and adds to the body of knowledge. It illustrates the significance and exposure of Babylon University's research output in the larger academic community. Baghdad University scored 44.2 on the industry income scale, while Babylon University received a 37. This suggests that Baghdad University and industry partners work more closely together, which resulted in higher income from research contracts, industry-funded initiatives, and technology transfer. The research at Baghdad University is more relevant to the needs of industries and society as evidenced by the higher industry income score. Baghdad University received a score of 19.5 and Babylon University received a score of 21.6 in the category of global outlook. This suggests that while Babylon University scored higher than Baghdad University, both are making comparable efforts to internationalize, including through international partnerships in research, faculty and student recruitment, and international collaborations. The similar international outlook scores show that both institutions value promoting intercultural understanding and embracing diversity in teaching and research.

Based on the above results, Baghdad University and Babylon University's strengths and potential areas for improvement are highlighted. Baghdad University scored higher in teaching, research, and industry income, indicating a more robust ecosystem for both education and research. While teaching, research, and industry income indicators make significant differences, they are unable to lead to intangible performance of Baghdad University. In contrast, citations and international outlook are the major contributors to advance Babylon position as indicated by Chart 1.

It is crucial to remember that the weighting of various indicators and the methodology used to determine THE rankings may change over time, so it is important to interpret these scores carefully. The specific factors affecting Baghdad University's higher rankings in teaching, research, citations, industry income, and international outlook could be further investigated. A qualitative analysis could also look into the plans and programs that both universities have put in place to improve their performance in these areas. For other universities looking to boost their rankings and improve their overall academic performance, understanding the factors that contribute to success in these categories can be incredibly insightful. In

order to further boost Baghdad University and Babylon University's competitive positions in the world of higher education, it can also direct strategic planning and resource allocation within those institutions.

Metrics Driving Institutions in the Times Ranking 3.2

In order to compare the performance of the University of Baghdad and Babylon University, the table below includes all metrics collected from SciVal database for specific period (2017-2022) as Times ranking used the same period to assess the performance of both universities. These metrics are not publically available neither at Times ranking database nor at SciVal. However, they were utilized to rank the both institutions.

Research Performance 3.3

The table (1) below shows the research performance of Baghdad and Babylon Universities from 2017 to 2021 except citation (data collected from 2017 to 2022). Through this comparative analysis, this study can gain insight into the research strengths and weaknesses of Baghdad University and Babylon University. This information will help identify areas in which these agencies excel, as well as areas that may require further attention and investment. The analysis captures a recent timeframe, allowing for a comprehensive understanding of trends, changes, and improvements in research performance. The findings help identify areas where Baghdad and Babylon excel and areas that require further attention and investment. The research performance section provides valuable insights into the strengths and weaknesses of these institution.

Table (1) Metrics Comparison between Baghdad and Babylon Universities for the period (2017-2021)

Metrics	Baghdad	Babylon
Authors	9592	3970
Scholarly output	14060	6034
Citations*	57372	29144
Field-Weighted Citation Impact**	0.67	0.99
h5-index	58	52
Open Access	49 %	37.44 %
Publications in Top Journal (%) ***	4.1 %	4.4

Citations per Publication	4.1	4.8
International Collaboration (%)	17.5 %	17.9%
Academic-Corporate Collaboration (%)	% 0.40	% 0.20

*Data collected from 2017 to 2022.** The ratio of total citations received by an institution outputs compared to all other similar outputs in the world.

***Publications in Top Journal Percentiles (top 10% by Cite Score Percentile)

Table (1) shows that the findings shed light on both universities' scholarly output, citations, collaboration, and other metrics. Baghdad University had 9592 authors, more than twice as many as Babylon University's 3970 authors. This suggests a larger research community at Baghdad University as well as a potential larger faculty pool, allowing for more productive and diverse research. The greater number of authors suggests that Baghdad University has greater potential for research output and teamwork. Baghdad University reported 14060 publications in terms of scholarly output, while Babylon University reported 6034 publications. This suggests that when compared to Babylon University, Baghdad University has a higher research productivity and output. The increased scholarly output points to a more robust research environment and perhaps more extensive research initiatives at Baghdad University. Regarding citations, Babylon University reported 29144 citations, compared to 57372 citations reported by Baghdad University. However, it is very important to note that more people have cited the research done at Babylon University as per publication received a score of 4.8 compared to 4.1 for Baghdad University. This indicates that Babylon University has had a greater effect on the academic world. Furthermore, Babylon University received higher ratio than Baghdad University in the Field-Weighted Citation Impact (0.99 for Babylon University and 0.67 for Baghdad University). These ratios indicate that the research outputs of both universities have been cited less than expected compared to the average of similar outputs in the world. According to the metrics of Elsevier' Scopus, if publication outputs of an institution receive higher than 1.00 refers to that publications would be cited higher than expected compared to the world average of the same publications, exactly 1.00, indicates that publications have been cited as expected for similar outputs in the world average, and less than 1.00 refers to that the research outputs have been cited less than expected based on the average of the same outputs in the world. The greater number of citations shows how influential and well-known Babylon University's research output is. These numbers imply that, generally speaking, each publication from each university

receives a comparable number of citations, demonstrating the significance and influence of their research within the academic community.

Baghdad University's h5-index was 58, slightly higher than Babylon University's h5-index of 52, which gauges the impact of publications. This shows that both universities' research has had a significant impact on their respective fields, but according to this metric, Baghdad University has had a slightly greater impact. According to reports, Baghdad University reported 49% of open access publications, while Babylon University reported 37%. This shows that a larger percentage of Baghdad University's research outputs are open access, which could increase the dissemination and visibility of their research findings to a larger audience. Both universities reported comparable percentages for publications in prestigious journals, with Baghdad University reporting 4.1% and Babylon University reporting 4.4%. This may indicate that both universities have had success publishing their research in renowned and high-impact journals, demonstrating the caliber and importance of their scholarly output. Both universities reported similar levels of international collaboration, with Babylon University reporting 17.9% and Baghdad University reporting 17.5%. This shows that both institutions actively collaborate on international research projects, taking advantage of various viewpoints and knowledge from around the world.

Percentages at 0.40% for Baghdad University and 0.20% for Babylon University, indicate that academic-corporate collaboration partnerships between academia and industry—was very low for both universities. On other words, there were only 10 publications of 6034 published by Babylon university and 51 publications of 14060 published by Baghdad University conducted by authors from both industrial or corporate, and the two universities. This indicates that there is a lack of collaboration between both universities and industry. This implies that greater collaboration and knowledge transfer between universities and industry is highly needed, which could result in the practical application of research and encourage innovation.

Based on THE ranking metrics, the study's findings highlight the research productivity, impact, collaboration, and accessibility of Baghdad University and Babylon University. In terms of authors, scholarly output, citations, h5-index, and open access publications, Baghdad University showed higher values. In contrast, Babylon University scored higher on the percentages of publications in prestigious journals, international collaboration, field-weighted citation impact, and citations

per publication. However, it is crucial to remember that while these metrics offer insightful information about the performance of the universities, they do not fully reflect their academic contributions or the caliber of their research. Further investigation could focus on specific variables affecting the observed differences and investigate methods to improve academic-corporate cooperation, raise the profile of research through open access publications, and broaden international collaborations.

It can be useful to develop strategic initiatives and policies to improve Baghdad University and Babylon University's academic performance and to be aware of the factors affecting the variations in research productivity, impact, and collaboration. The greater number of authors and scholarly output for Baghdad University suggests a larger research community and perhaps more resources devoted to research activities. This might be explained by elements like the university's infrastructure for conducting research, the accessibility of funding, and institutional support for research initiatives. The higher citation count and h5-index of Baghdad University show that its research findings have made a significant impact and are held in high regard within the academic community. While Babylon University had fewer authors and less scholarly output, it showed competitive metrics in terms of publications in prestigious journals, citations per publication, and field-weighted citation impact. This suggests that Babylon University's research output could be of higher quality and visibility in terms of recognition and publication in esteemed journals. Further research into the specific areas and subjects that Babylon University excels in may yield insightful information about its research strengths and specializations. Both universities demonstrated comparable levels of international cooperation, indicating that they actively participate in international research networks and gain from the exchange of different viewpoints and knowledge. However, there is still room for improvement in both institutions' academic-corporate collaboration. Building relationships with business partners can encourage technology transfer, encourage the commercialization of research findings, and increase the application of academic research. The differences in open access publication percentages show how widely both universities have made their research findings available for free to the general public. Enhancing open access initiatives can make research outputs more visible and widely disseminated, which can have a wider impact and open the door to collaboration with researchers from various institutions and fields. Since the metrics only show performance for the specified period of time, it is crucial to interpret these findings with care. The

differences between the two universities may also be influenced by other elements, including the universities' unique research areas, disciplinary strengths, and regional context. Overall, based on THE ranking metrics, this comparative study offers insightful information about the research collaboration, performance, and impact of Baghdad University and Babylon University. The results can guide strategic planning, resource allocation, and policy choices to further improve both institutions' academic standing and research competitiveness.

Collaboration 3.4

Collaboration is another aspect that should be examined to as the times ranking uses this inductor to assess universities. For this study both national and international collaboration is examined as shown the figure below.

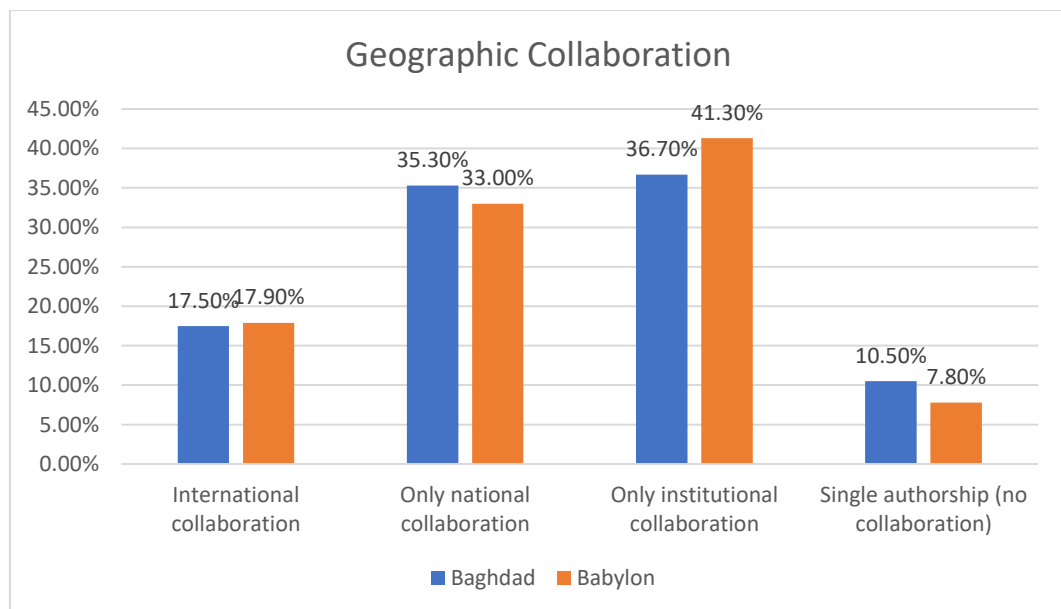


Figure (2) Geographic Collaboration

Figure (2) shows that Both Babylon University and Baghdad University displayed a comparably high level of interest in international cooperation. At Babylon University and Baghdad University, the percentages of international collaboration were 17.9% and 17.5%, respectively. These findings suggest that both institutions work actively together on research projects involving international collaborators. The similar rates of global collaboration indicate that both universities place a high value on fostering global connections and utilizing a variety of expertise to enhance

research outcomes. The study discovered that Babylon University reported a slightly higher rate of 33% and Baghdad University had a rate of 35.3% when looking at national collaboration. This demonstrates the close collaboration between both institutions and other academics institutions in their home countries. The results show that Babylon University and Baghdad University value national partnerships and alliances, displaying a commitment to addressing local research priorities and fostering domestic research networks. Babylon University demonstrated a higher rate of institutional collaboration at 41.3% compared to Baghdad University's rate of 36.7%. These results suggest that internal collaboration at Babylon University is prioritized over external collaboration. This could indicate a more centralized approach to research at Babylon University or a conscious focus on interdisciplinary collaboration between different faculties and departments. Baghdad University also demonstrated a high level of intra-institutional cooperation, indicating a knowledge of the benefits of such cooperation for the impact and productivity of research. The frequency of single-author publications, or research articles written by a single author without assistance from others, was also examined in the study. At Babylon University, the percentage of publications by a single author was 7.8%, while it was 10.5% at Baghdad University. These results indicate that many researchers at both universities either prefer or are able to work independently. The existence of single-authored publications suggests that individual expertise and contributions may have a significant impact on the research output of both institutions. In sum, most of the research outputs of both universities are conducted at national level, indicating that both universities are deficient in international research network.

In terms of collaborating with sectors, table 2 shows the various sectors in which Baghdad University has collaborated with both top ten national and top ten international entities across different sectors. At the national level, the university has established collaboration with seven academic sectors, promoting knowledge exchange, joint research projects, and shared resources. These collaborations are crucial for promoting academic excellence, fostering interdisciplinary research, and addressing societal challenges. Baghdad University has also formed collaborations with two government institutions (Ministry of Health and Ministry of Education), highlighting its expertise in Iraq's socio-economic development. Additionally, Baghdad University has established collaborations with one national medical institution, focusing on healthcare and medical research. However, Baghdad University engages with academic sector across international board. These

international partnerships demonstrate the university's commitment to global engagement, knowledge exchange, and fostering international research collaborations. Overall, these partnerships contribute to the university's research capabilities, academic excellence, societal challenges, and positioning it as a hub for knowledge exchange and innovation.

Table (2) Top Ten National and International institutions collaborating with the University of Baghdad

National Institution	Country	Sector	Co-authored publications	International Institution	Country	Sector	Co-authored publications
Al-Mustansiriyah University	Iraq	academic	629	Universiti Putra	Malaysia	academic	155
University of Technology- Iraq	Iraq	academic	435	Universiti Kebangsaan	Malaysia	academic	116
Al-Nahrain University	Iraq	academic	392	King Saud University	Saudi Arabia	academic	77
Baghdad Medical City	Iraq	medical	348	Universiti Sains	Malaysia	academic	73
Ministry of Health, Iraq	Iraq	government	267	Curtin University	Australia	academic	65
University Of Anbar	Iraq	academic	264	University of	Malaysia	academic	65

				Malaya			
Ministry of Education , Iraq	Iraq	governm ent	230	Cairo Universit y	Egypt	acade mic	57
University of Kufa	Iraq	academi c	217	King's College London	United Kingd om	acade mic	53
Diyala University	Iraq	academi c	192	Swinbur ne Universit y of Technolo gy	Austra lia	acade mic	52
University of Kerbala	Iraq	academi c	180	Murdoch Universit y	Austra lia	acade mic	51

When it comes to Babylon University, table 3 reveals that across various industries, Babylon University has collaborated with both national and international organizations. Babylon University has formed collaborations with ten academic sectors, demonstrating a strong network of collaboration in Iraq's higher education landscape. These partnerships foster knowledge exchange, interdisciplinary research, and shared resources, promoting academic excellence, innovation, and addressing societal challenges. Additionally, Babylon University has established a collaboration with one government institution (compared to 3 institutions collaborated with Baghdad University), highlighting its role in policy development and applied research. The university also engages with ten international institutions, demonstrating its commitment to global engagement, knowledge exchange, and research collaborations. This results show that Babylon university has poor collaborating network and this maybe the reason why Babylon University scored lower than Baghdad university in the industry income indicator as showed in Figure 1 above.

Table (3) Top Ten National and International institutions collaborating with the University of Babylon

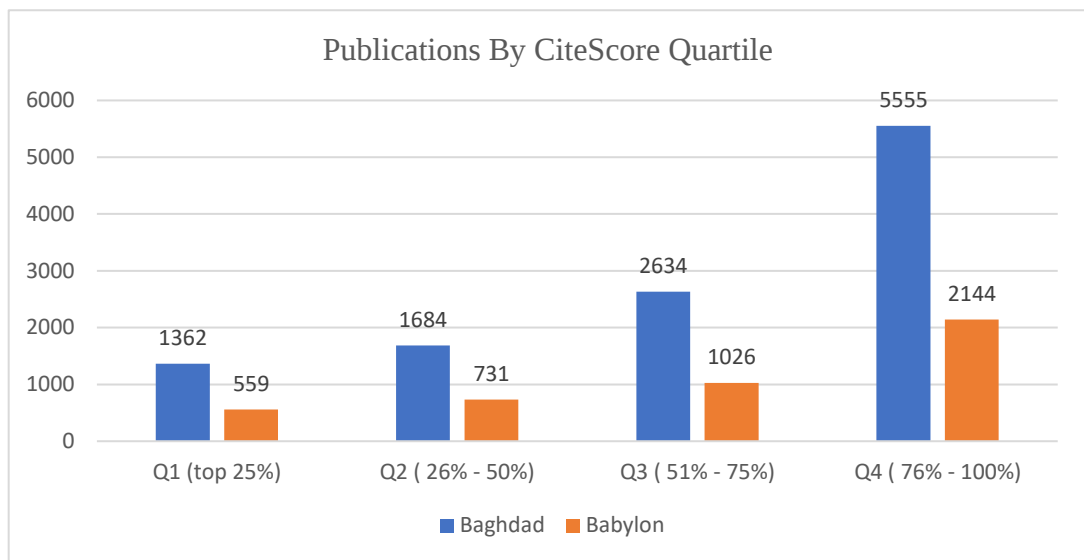
National Institution	Country	Sector	Co-authored publications	International Institution	Country	Sector	Co-authored publications
Al-Mustaqbal University College	Iraq	academic	332	Liverpool John Moores University	United Kingdom	academic	77
University of Kufa	Iraq	academic	253	Prince Sattam Bin Abdulaziz University	Saudi Arabia	academic	46
University of Kerbala	Iraq	academic	243	Luleå University of Technology	Sweden	academic	44
Al-Qasim Green University	Iraq	academic	183	Universiti Kebangsaan Malaysia	Malaysia	academic	34
University of Baghdad	Iraq	academic	167	University of Monastir	Tunisia	academic	32

Al-Furat Al-Awsat Technical University	Iraq	academi c	157	Universit i Teknolog i	Malay sia	acade mic	30
University of Al- Qadisiya	Iraq	academi c	144	Ton Duc Thang Universit y	Viet Nam	acade mic	29
Al- Mustansiri yah University	Iraq	academi c	131	Universit y of Manches ter	United Kingd om	acade mic	28
Ministry of Education , Iraq	Iraq	governm ent	123	Islamic Azad Universit y	Iran	acade mic	28
University of Technolog y- Iraq	Iraq	academi c	98	Universit y of Hail	Saudi Arabia	acade mic	27

Quality of Publications 3.5

Before going through the interpretation and the explanation of the findings of this section, it is fundamental to mention that the data, used to examine the quality of publication, collected from journals have metrics as Elsevier' Scopus calculates research outputs published in journal metrics

and others may be excluded. For instance, as mention in table1, that Babylon University published 6034 publications, but only 4,460 had been published in journals that have metrics.



Score Quartile Publications by Cite (3)Figure

In figure (3), the results show that in Q1, Baghdad University consistently produced and had a greater number. Baghdad University had 1362 publications in the first quartile which means that the journals have highest CiteScore, while Babylon University had 559. Baghdad University continued to hold a competitive position in the second quartile with 1684 publications, while Babylon University reported 731 publications. Baghdad University's 2634 publications in the third quartile show significant number. With 5555 publications, Baghdad University significantly outperformed Babylon University in the fourth quartile (Q4 means that journals have lowest CiteScore). Both universities produce a significant amount of research, demonstrating their dedication to expanding the body of knowledge in academia. However, factors such as impact, citation rates, and international recognition are not the sole determinants of publication quality. It is crucial to understand that publication numbers alone cannot accurately assess the quality of research. A comprehensive analysis is necessary to determine which university excels in terms of overall publication quality. A deeper understanding of these institutions' strengths and weaknesses could be gained through additional research, which would aid in strategic planning and ongoing research performance improvement.

Babylon University displayed a commendable performance in the first quartile (Q1), which represents the top 25% of high quality journals, with 12.5% of the

publications. The fact that Babylon University's research output is in the top percentile shows that the institution is well-known and respected in the academic world. Baghdad University, on the other hand, reported 12.1% of the total publications, placing it in the same quartile but with a noticeably lower percentage. These results suggest that in terms of research output and visibility within the scientific community, Babylon University has a marginal advantage over Baghdad University.

Babylon University maintained its competitive position with 16.4% of the total publications when it moves into the second quartile (Q2), which includes journals ranked between the 26th and 50th percentile. Baghdad University, in contrast, reported 15% of the total publications, which also indicated an increase the publications but in a slightly slower in CiteScore journals . The implication is that both institutions are actively engaged in research, but Babylon University continues to outperform Baghdad University in terms of productivity and impact. Baghdad University showed a significant percentage in the third quartile (Q3), which represents journals ranked between the 51st and 75th percentile, with 23.5% of the total publications. Babylon University, on the other hand, reported 23% of the total publications, demonstrating a consistent rise in research productivity.

Finally, Babylon University outperformed Baghdad University with 48.1% of the publications that have been published in the fourth quartile (Q4), which represents the top 76% to 100% of journals compared to 49.4% of the publications for Baghdad University. According to these results, Babylon University outperforms Baghdad University as it published slightly smaller amount of the publications in journals have lowest CiteScore. In terms of research productivity by a wide margin, it is important to note that both universities have a sizable research output, even in the lower quartile, demonstrating their dedication to advancing the body of knowledge in academia.

Overall, the outcomes of this comparative analysis show how competitive and strong in research Baghdad University and Babylon University are. Baghdad University consistently produced and had a greater impact on research as it published around 50.6% of the publications in Q1, Q2, and Q3 quartiles, while Babylon University published around 51.9% in Q1, Q2, and Q3 quartiles, inducting that the publications demonstrating its prominence in the academic world. Babylon University's performance indicates a steady improvement in terms of research

output and impact, despite the fact that it has lower publications than Baghdad University.

It is crucial to remember that the quantity of publications does not always indicate the overall caliber or importance of the research carried out at each institution. When evaluating the competitiveness of universities in global rankings, other factors like the significance of individual publications, citation counts, collaboration networks, and the research fields should also be taken into account.

3.6 Scholarly Output by Subject Area

The figure below is going to explain the share of publications per subject area for each university and comparison is conducted to highlight scholarly outputs by subject area.

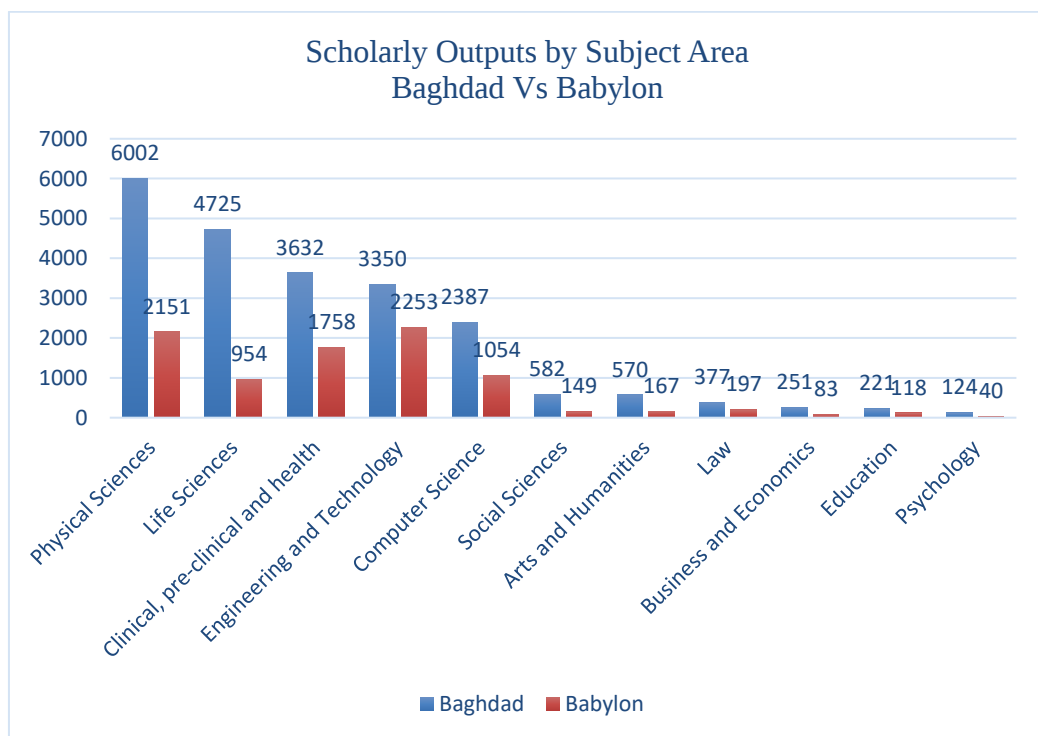


Figure (4) Scholarly Output by Subject Area Baghdad University and Babylon University

In terms of physical sciences, figure 4 shows that Baghdad University exhibited a higher scholarly output with 6002 publications, while Babylon University reported

2151 publications. This indicates that Baghdad University has a stronger research presence and productivity in the field of physical sciences compared to Babylon University. The higher scholarly output from Baghdad University suggests that it has a more extensive research infrastructure and a greater focus on scientific research in this subject area. Regarding life sciences, Baghdad University also had a higher scholarly output with 4725 publications, compared to Babylon University's 954 publications. This indicates that Baghdad University is more actively engaged in research within the life sciences field. The higher publication count suggests that Baghdad University has invested in research programs and resources to explore various aspects of life sciences, including biological sciences, biochemistry, and related disciplines.

In the subject area of clinical, preclinical, and health, Baghdad University reported 3632 publications, whereas Babylon University reported 1758 publications. Baghdad University's higher scholarly output in this area indicates a greater emphasis on research related to clinical medicine, healthcare sciences, and preclinical studies. This suggests that Baghdad University has a stronger presence in the health sciences domain, potentially reflecting its focus on medical research and healthcare advancements.

In the field of engineering and technology, Baghdad University demonstrated a higher scholarly output with 3350 publications, while Babylon University reported 2253 publications. This indicates that both universities are actively engaged in engineering and technological research, but Baghdad University has a relatively higher research productivity. The higher scholarly output from Baghdad University suggests that it has established stronger research programs and collaborations in the field of engineering and technology.

Regarding computer science, Baghdad University reported 2387 publications, whereas Babylon University had 1054 publications. This indicates that Baghdad University has a stronger research focus and output in the area of computer science. The higher scholarly output from Baghdad University suggests a robust research environment and a greater investment in computer science-related research programs.

In the arts and humanities, Baghdad University reported 570 publications, while Babylon University reported 167 publications. This indicates that both universities have a presence in the arts and humanities, but Baghdad University has a higher

scholarly output. This suggests that Baghdad University has established stronger research programs and collaborations in the arts and humanities domain, including fields such as literature, history, philosophy, and cultural studies.

When it comes to law, Baghdad University reported 377 publications, whereas Babylon University reported 197 publications. This indicates that both universities are engaged in legal research, but Baghdad University has a higher scholarly output in this subject area. The higher publication count from Baghdad University suggests that it has a stronger research focus and productivity in the field of law. In the subject areas of business and economics, education, and psychology, Baghdad University demonstrated a higher scholarly output compared to Babylon University. Baghdad University reported 251 publications in business and economics, 221 publications in education, and 124 publications in psychology. In contrast, Babylon University reported 83 publications in business and economics, 118 publications in education, and 40 publications in psychology. These results suggest that Baghdad University has a stronger research presence and productivity in these subject areas. The findings of this study highlight the varying research strengths and emphases of Baghdad University and Babylon University across different subject areas. Baghdad University demonstrated higher scholarly output in most subject areas, indicating a broader research scope and potentially stronger research programs and collaborations. However, it is important to consider that the number of publications alone does not reflect the quality or impact of the research conducted in each subject area. Further research could explore the factors contributing to the

Conclusion .4

The goal of this research paper was to offer insights into the competitive standing of Baghdad University and Babylon University in international rankings, with a focus on the results of the Times World University Rankings and the Scopus database over the years 2017–2022. This study aimed to shed light on the benefits, drawbacks, and distinctive qualities of each educational institution by analyzing and comparing a variety of factors, including teaching, international output, industry outcome, research, citations, and other academic metrics. A thorough comparison of the two universities was possible to analyze the performance in the Times World University Rankings and Scopus databases. The study's findings revealed reason why Babylon university as young university perform better than Baghdad University in the Times ranking and offered a thorough

understanding of the key elements affecting Baghdad University and Babylon University's rankings as well as areas for improvement. It is clear that perceptions among employers, academics, and students are significantly influenced by global university rankings. Iraqi universities, such as Baghdad and Babylon Universities, should be aware of how critical it is to gauge their position and level of competition internationally. These institutions can strategically enhance their educational offerings and research output by better understanding how they perform on important ranking indicators, which will improve their reputation globally and help them draw in talented students and faculty members. They provide a thorough understanding of the elements that influence Babylon University and Baghdad University's rankings. With this information at hand, administrators of the both universities can take well-informed actions and launch focused initiatives to address areas for improvement and capitalize on their individual strengths. Overall, this study advances knowledge of Iraq's competitive higher education market and emphasizes the value of using international rankings as a yardstick for assessing university performance. It is hoped that the knowledge gleaned from this study will inform future plans, decisions, and initiatives aimed at boosting the competitiveness and international acclaim of Iraqi universities. The findings for this research added to the body of knowledge in the field of higher education management and offer practical insights for university administrators in Iraq by building on previous research and looking at the unique context of these universities.

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