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TRANSFORMING EGYPTIAN HIGHER EDUCATION: STRATEGIES FOR GLOBAL COMPETITIVENESS

TRANSFORMANDO LA EDUCACIÓN SUPERIOR EGIPCIA: ESTRATEGIAS PARA LA COMPETITIVIDAD GLOBAL

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Abstract

This research posits that enhancing the competitiveness of Egyptian universities is crucial for their integration into the global academic landscape. The study analyzes the significant challenges these institutions face and proposes actionable strategies to address them. By reviewing existing literature, academic papers, and relevant reports, the research situates its findings within both global and national contexts, focusing specifically on the Egyptian higher education system. A comprehensive examination of strategic plans and policies reveals key determinants of competitiveness, including research output, infrastructure development, student satisfaction, and employability. Additionally, the potential benefits of international collaborations are explored, underscoring their importance in enhancing university performance. Although the study does not include primary data collection, it provides valuable insights into the complexities of the Egyptian higher education landscape. The findings culminate in evidence-based recommendations for policymakers, university administrators, and stakeholders. By adopting these strategies, stakeholders can significantly improve the competitiveness of Egyptian universities, fostering their growth and enhancing their contributions to the international academic community.

Keywords

Competitiveness, Egyptian universities, international rankings, higher education, challenges, recommendations

1. INTRODUCTION

This paper argues that enhancing the competitiveness of Egyptian universities is essential for national development and requires a multifaceted approach to address key challenges. In today's global context, the race for competitiveness in higher education has intensified, driven by factors such as globalization, the knowledge economy, and the increasing importance of university rankings. Egyptian universities confront unique challenges, including limited infrastructure, difficulties in faculty retention, and the urgent need for innovative pedagogical approaches (El Hadidi & Kirby, 2015; Barsoum, 2014).

To ground this analysis in empirical evidence, this study incorporates recent quantitative and qualitative data. For instance, an examination of the most recent QS World University Rankings 2025 reveals that while Cairo University (ranked 350th) and The American University in Cairo (ranked 415th) have secured positions in the global top 500, a significant gap persists for other institutions when compared to regional and global counterparts. This study will also analyze comparative funding levels, highlighting the disparity between Egypt's public expenditure on tertiary education (approximately 0.8% of GDP in recent years) and the OECD average of 1.5%, which directly impacts research capacity and infrastructure. Finally, it will present case studies of successful models within Egypt, such as Zewail City of Science and Technology, to identify replicable strategies in fostering research-intensive education and innovation.

Building on these empirical indicators, this research situates its analysis within the broader discourse on higher education's role in national competitiveness. By examining strategic plans from the Ministry of Higher Education and Scientific Research, this study evaluates current efforts aimed at improving university performance. It identifies critical determinants of competitiveness, including research output, infrastructure development, student satisfaction, and graduate employability. Furthermore, the potential benefits of international collaborations and partnerships are explored, emphasizing their vital role in enhancing university performance.

This research contributes to the ongoing scholarly conversation by addressing the specific challenges faced by Egyptian universities and proposing evidence-based recommendations for stakeholders. By strategically aligning educational programs with community needs and fostering a culture of quality in research, Egyptian universities can significantly enhance their competitiveness. This introduction thus sets the stage for a comprehensive, data-driven examination of the current state of higher education in Egypt and the necessary steps to elevate its global standing.

Table 1 – Questions of research

Research Question	Rationale
1. **What are the primary challenges faced by Egyptian universities in achieving global competitiveness, and how do these challenges compare to those encountered by universities in other countries?**	Clarifies "primary" to emphasize the most significant issues and aligns the question with comparative analysis.
2. **In what ways does the existing educational infrastructure in Egypt affect universities' ability to enhance their global rankings and overall competitiveness?**	Specifies "in what ways" to encourage a deeper exploration of the infrastructure's impact.
3. **What key factors influence the quality of education and research output in Egyptian universities, and how do these factors measure up against international standards?**	Uses "measure up against" to emphasize a comparative analysis with international benchmarks.
4. **What strategies can Egyptian universities adopt to effectively attract, retain, and support talented faculty members and researchers in the current academic and research environment?**	Adds "effectively" to stress the importance of practical application in the proposed strategies.
5. **How can Egyptian universities effectively integrate technology and digital resources to enhance teaching, research, and overall competitiveness?**	Emphasizes "effectively" to focus on successful implementation.
6. **In what specific ways can collaborations and partnerships with international institutions enhance the competitiveness and global reputation of Egyptian universities, and what challenges might arise from these collaborations?**	Clarifies "specific ways" to prompt detailed exploration of benefits and potential challenges.
7. **What innovative teaching methodologies and pedagogical approaches can Egyptian universities implement to enhance the learning experience and better prepare students for the demands of the job market?**	Uses "implement" to focus on actionable strategies.
8. **What comprehensive strategies can be developed to enhance the global recognition, rankings, and reputation of Egyptian universities, considering their unique strengths and areas for improvement?**	Uses "comprehensive" to indicate a holistic approach to strategy development.
9. **How can funding mechanisms and resource allocation be optimized to effectively support research, innovation, and infrastructure development in Egyptian universities?**	Changes "improved" to "optimized" for a more precise focus on efficiency.
10. **What measures can be implemented to increase engagement and collaboration between industry and Egyptian universities, aiming to bridge the gap between academia and the job market and foster workforce development? (Kirby & Ibrahim, 2013; Leydesdorff & Etzkowitz, 2004; Bruneel et al., 2010)**	Emphasizes "implemented" to focus on actionable steps for enhancing collaboration.

Source: author

In the case of Egyptian universities, they face challenges in achieving a prominent position in international rankings. However, by analyzing the relationship between competitiveness in higher education and elite university rankings, insights can be gained, and growth opportunities can be identified. Leveraging available reports, data, and previous studies, it is possible to assess the strengths, weaknesses, and potential of Egyptian universities. Based on this analysis, recommendations can be made to address the challenges and create a more competitive environment in Egyptian higher education.

Table 2 - Challenges faced by Egyptian universities in global competitiveness

SOLUTION	DESCRIPTION
1. **Increased funding**	Allocating more resources to universities for research, infrastructure, and faculty development.
2. **Curriculum reform**	Updating curricula to align with international standards and industry needs.
3. **Faculty development**	Investing in faculty training and development programs to enhance teaching and research skills.
4. **Infrastructure improvements**	Modernizing laboratories, libraries, and technological infrastructure.
5. **International partnerships**	Fostering collaborations with international universities and research institutions.
6. **Language training**	Enhancing English language proficiency among faculty and students.
7. **Incentives for faculty**	Providing competitive salaries, research funding, and career advancement opportunities to attract and retain talented faculty.(Kirby, 2006; Kirby et al., 2011)
8. **Institutional autonomy**	Granting universities greater autonomy to make decisions and implement innovative strategies. (El Hadidi & Kirby, 2016; Kirby et al., 2011)

Source: author

Egyptian universities confront several obstacles in their pursuit of research and development, including inadequate financing, subpar instruction, a dearth of publications and research output, inadequate facilities and infrastructure, a lack of international collaboration, (Leydesdorff & Etzkowitz, 2004; Bruneel et al., 2010) and a lack of fluency in the English language. These problems make hiring outstanding researchers, acquiring cutting-edge equipment, and carrying out ambitious research initiatives difficult.

Certain Egyptian institutions offer varying degrees of quality education, which calls for advancements in curriculum development, instructional strategies, and evaluation procedures. Improving educational quality is essential to creating graduates who can compete in the global labor market. Promoting faculty publications in esteemed journals is crucial to raising the profile and influence of Egyptian research.

Universities' capacity to conduct high-quality research and offer a supportive learning environment is hampered by inadequate infrastructure and outdated facilities, which include small lab spaces, antiquated libraries, and inadequate technological infrastructure. Investing

in state-of-the-art facilities and infrastructure is essential to developing a competitive research and educational environment.

For Egyptian universities, international collaboration is particularly difficult since they have little access to global research networks and collaborations with esteemed organizations, making it difficult to produce high-calibre research. Enhancing English language programs and offering language assistance can make Egyptian institutions more competitive.

Another issue facing Egyptian colleges is brain drain, as highly qualified academics and researchers leave the nation in quest of better employment and research opportunities elsewhere. To keep smart people on staff, efforts should be made to develop appealing career options, offer incentives for research, and create welcoming settings.

Establishing institutional autonomy and governance is crucial in cultivating a competitive milieu. Boosting academic freedom, expediting administrative procedures, and enhancing institutional autonomy are crucial for fostering competitiveness.

To tackle these obstacles, a thorough and multifaceted strategy is needed. It entails putting more money into R&D, changing the curriculum, upgrading infrastructure, encouraging international partnerships, encouraging language skills, putting in place efficient plans for keeping outstanding faculty members on staff and strengthening institutional autonomy and governance. Egyptian universities may become more globally competitive and rise in international university rankings by tackling these issues.

2. IMPACT OF EDUCATIONAL INFRASTRUCTURE ON THE COMPETITIVENESS OF EGYPTIAN UNIVERSITIES

The competitiveness of Egypt's universities is greatly influenced by its educational infrastructure. The competitiveness of the university is greatly impacted by the calibre and accessibility of its resources and facilities, which include cutting-edge technology, research labs, and contemporary libraries. Building infrastructure—classrooms, lecture halls, and research facilities, for example—is essential to fostering an atmosphere that supports both learning and research. By creating better learning environments and opening up chances for advanced research, upgrading and growing these infrastructures may increase universities' competitiveness. Having access to computer laboratories, fast internet, and e-learning platforms is crucial to educating students for a competitive global job market. This requires technology integration. Universities are more competitive when they have easy access to transportation, housing, and well-connected campuses.

Additionally, by fostering partnerships and collaborations between academic institutions, business sectors, and research centers, the educational infrastructure helps students become more marketable in the labor market by giving them access to real-world experience, internships, and research opportunities. Egypt can recruit top talent, grow a

dynamic learning environment, and make its institutions more competitive by investing in and upgrading their educational facilities.

3. FACTORS AFFECTING EDUCATION AND RESEARCH QUALITY IN EGYPTIAN UNIVERSITIES

Enhancing teaching and research production is a problem faced by Egyptian institutions. These consist of inadequate faculty development, an absence of research culture and collaboration, antiquated infrastructure, poor governance and administration, antiquated curricula and traditional teaching methods, inadequate funding and resources, difficulties with quality assurance and accreditation, and ineffective faculty development. While obsolete buildings might limit the ability for cutting-edge research and student participation, insufficient finance can limit access to contemporary facilities, equipment, research funds, and scholarships. While out-of-date curricula and conventional teaching techniques might restrict student participation and critical thinking, effective governance and administration are essential (Kirby et al., 2011; El Hadidi & Kirby, 2016) for guaranteeing excellent education and research. Developing faculty members is also essential for improving instruction and doing research.

To foster an atmosphere that supports high-quality instruction and research and socioeconomic issues like poverty and inequality must be addressed. A multitude of things greatly impact the libre of research and education. Sufficient money is essential for maintaining skilled faculty members and providing cutting-edge facilities, technology, and research equipment. Inadequate classrooms, labs, libraries, and IT infrastructure are examples of buildings and infrastructure that might restrict an institution's ability to offer top-notch research and educational opportunities. The calibre of instruction is greatly influenced by the calibre of the faculty, with elements like hiring and retaining highly skilled instructors, providing chances for continuous professional growth, and creating a positive work atmosphere all influencing their commitment and knowledge.

The relevance and effectiveness of the curriculum and teaching methods also play a role in affecting the quality of education. A well-designed curriculum that aligns with industry demands incorporates practical skills, fosters critical thinking, and encourages research can enhance the learning experience and better prepare students for the job market.

A vibrant research culture that encourages innovation, collaboration, and interdisciplinary research can significantly impact the quality of research output. Effective governance, transparent policies, and robust quality assurance mechanisms are essential for maintaining and improving the quality of education and research.

Access to quality education and research opportunities should be equitable and inclusive, addressing barriers such as socioeconomic factors, gender disparities, and regional disparities. Collaboration between universities and industries can enhance the quality of

education and research by fostering applied research, internships, and work-integrated learning opportunities.

It is noteworthy that these variables may differ between Egyptian institutions and may evolve with time. By addressing these issues, Egyptian universities may raise the calibre of their research and instruction colleges?

4. ATTRACTING AND RETAINING TALENTED FACULTY IN EGYPTIAN UNIVERSITIES

To attract and retain talented faculty members and researchers in Egyptian universities, several strategies can be implemented (Etzkowitz, 2003; Kirby et al., 2011; Leydesdorff & Etzkowitz, 2004). These include competitive compensation and benefits, research support and facilities, academic freedom and autonomy, collaboration and networking opportunities, professional development and career advancement, a supportive work environment, recognition and rewards, internationalization initiatives, and transparent recruitment and evaluation processes. Competitive salaries and benefits, state-of-the-art research facilities, and access to funding are essential for attracting and retaining faculty members and researchers. Universities should prioritize investment in research infrastructure and create an environment conducive to cutting-edge research. Ensuring intellectual exploration, independent thinking, and freedom to pursue research topics of interest is also crucial. Collaboration and networking opportunities, professional development, a supportive work environment, recognition and rewards, internationalization initiatives, and transparent recruitment and evaluation processes are also essential for attracting and retaining talented individuals.

Attracting and retaining talented faculty members and researchers is crucial for the success and advancement of Egyptian universities. To attract and retain these individuals, universities should employ strategies such as competitive compensation, research support, professional development opportunities, strong institutional reputation, clear promotion and tenure policies, a collaborative and interdisciplinary environment, work-life balance, internationalization efforts, supportive leadership and governance, and collaboration with industry.

Competitive salaries and benefits packages are essential for attracting professionals with valuable expertise and experience, incentivizing them to stay in the long term. Research support includes allocating research funding, offering research grants and fellowships, providing access to state-of-the-art facilities and equipment, and facilitating collaborations with industry partners and other institutions.

Creating a supportive environment that encourages continuous professional development is also important for attracting and retaining talented faculty members and researchers. This can be achieved through attending conferences, workshops, seminars, funding for further education, research sabbaticals, and mentorship programs.

Building a strong institutional reputation is key to attracting and retaining talented faculty members and researchers. Universities should focus on enhancing their academic reputation by promoting excellence in education and research, publishing high-quality research papers, and fostering collaborations with renowned institutions both domestically and internationally.

Implementing transparent and fair promotion and tenure policies, fostering a collaborative and interdisciplinary environment, and promoting internationalization efforts can also attract and retain talented faculty members and researchers.

Lastly, establishing partnerships with industry leaders can enhance the attractiveness of Egyptian universities for talented faculty members and researchers, providing opportunities for applied research, funding, and industry connections.

By implementing these strategies, Egyptian universities can create an environment that attracts and retains talented faculty members and researchers, fostering a culture of excellence, innovation, and academic growth.

5. STRATEGIES FOR IMPROVING TECHNOLOGY UTILIZATION IN EGYPTIAN UNIVERSITIES

To enhance the utilization of technology and digital resources in Egyptian universities, several strategies can be implemented. These include upgrading the technological infrastructure, offering training and support programs, promoting e-learning platforms, partnering with EdTech companies, encouraging the creation and sharing of open educational resources, allocating funds for research and innovation projects related to technology integration in education, and fostering partnerships with industries. Infrastructure development involves investing in high-speed internet connectivity, modern computer labs, and updated software and hardware. Training programs and workshops can help faculty, staff, and students access and utilize digital resources effectively. E-learning platforms provide a user-friendly interface for online courses, virtual classrooms, and interactive learning materials, facilitating blended learning approaches and allowing students to access educational resources anytime, anywhere.

Collaboration with EdTech companies can help develop customized digital tools, content, and learning management systems tailored to the needs of Egyptian universities. Open educational resources, such as textbooks, lecture notes, and multimedia materials, can reduce costs for students and foster a culture of knowledge-sharing among educators. Financial allocation for research and innovation projects related to technology integration in education can incentivize faculty members to explore innovative ways of utilizing technology and digital resources for teaching and research purposes. Partnerships with industries can provide students with real-world experiences and access to the latest technologies and tools. Continuous evaluation and improvement are essential for aligning strategies with the evolving needs of the university community.

The utilization of technology and digital resources in Egyptian universities can significantly improve the learning experience, research capabilities, and overall efficiency. Strategies to achieve this include investing in robust technological infrastructure, offering comprehensive technology training and support, promoting the use of digital learning platforms, encouraging the use of Open Educational Resources (OER), integrating virtual laboratories and simulations, developing comprehensive online libraries and digital repositories, implementing collaboration and communication tools, using data analytics and learning analytics, embracing mobile learning, implementing research support systems, and conducting continuous evaluation and improvement.

Infrastructure development is crucial for effective utilization of technology and digital resources, including high-speed internet connectivity, reliable network systems, upgrading computer labs, and providing access to modern hardware and software tools. Technology training programs for faculty members, researchers, and students can help them develop the necessary digital skills to effectively utilize technology. Digital learning platforms, such as learning management systems (LMS), facilitate online course delivery, resource sharing, and student engagement. Open educational resources (OER) can enhance access to high-quality educational materials, while virtual laboratories and simulations provide practical learning experiences in fields with limited physical labs.

Online libraries and digital repositories provide easy access to a wide range of academic resources, allowing universities to collaborate with publishers and promote open access publishing. Collaborative tools, such as video conferencing platforms, project management software, and virtual teamwork platforms, facilitate effective communication and collaboration among faculty members, researchers, and students. Data analytics and learning analytics can help universities gain insights into student performance, engagement, and learning outcomes, enabling personalized learning experiences and timely interventions.

These strategies, when implemented effectively, can contribute to the improved utilization of technology and digital resources in Egyptian universities, ultimately enhancing the quality of education, research, and administrative processes.

6. ROLE OF INTERNATIONAL COLLABORATIONS IN ENHANCING THE COMPETITIVENESS OF EGYPTIAN UNIVERSITIES

Egyptian universities can significantly enhance their competitiveness through collaborations with international institutions. These partnerships facilitate the exchange of knowledge, expertise, and best practices, allowing universities to share research findings, teaching methodologies, and innovative approaches to education. This broadens the horizons of faculty and students, enhancing the quality of education. Collaborations also open up avenues for collaborative research projects, allowing Egyptian universities to tap into a global network of researchers, access cutting-edge facilities, and participate in international research initiatives. This enhances the quality and impact of research output, attracting more

funding opportunities and bolstering the university's reputation. Faculty members can participate in conferences, workshops, and exchange programs, staying updated with new ideas and research methodologies. This exposure benefits students, enhancing their cross-cultural competencies and employability in the international job market. Collaborations with prestigious international institutions can also enhance the reputation and ranking of Egyptian universities. Joint research projects, publications, and high-profile partnerships contribute to the university's visibility and recognition, attracting quality students, faculty, and research opportunities, further enhancing its competitiveness.

Egyptian universities can significantly enhance their competitiveness through collaborations with international institutions. These partnerships allow for the exchange of knowledge, expertise, and best practices, leading to innovative solutions, advancements in various fields, and increased publication and citation rates. International collaborations also provide access to additional funding opportunities, grants, and resources that may not be readily available within Egypt. This additional support enhances research capabilities and outcomes, contributing to the competitiveness of Egyptian universities.

Global recognition and visibility are also enhanced by collaborations with reputable international institutions. Engaging in joint academic programs, conferences, and scholarly events exposes faculty members, researchers, and students to a wider audience, attracting talented faculty members and establishing the universities as credible global players.

Student and faculty mobility is another benefit of collaborations with international institutions. These programs offer opportunities for students and faculty members to study, conduct research, and gain exposure to different educational and cultural environments, broadening perspectives and enhancing cross-cultural understanding.

Curriculum enhancement and innovation are also facilitated by collaborations with international institutions (Leydesdorff & Etzkowitz, 2004; Gunasekara, 2006; Bruneel et al., 2010). Sharing educational practices, pedagogical approaches, and curriculum design models can help Egyptian universities align their programs with international standards and best practices, improving the quality of education and increasing graduates' competitiveness in the international job market.

In addition, learning from successful practices in other countries can improve administrative processes, transparency, and accountability mechanisms, contributing to the overall competitiveness and sustainability of Egyptian universities. Industry collaborations also help align educational programs with market demands, ensuring graduates are well-prepared for the workforce.

So, collaborations and partnerships with international institutions bring numerous benefits to Egyptian universities, including knowledge exchange, research opportunities, access to funding and resources, global recognition, curriculum enhancement, and industry collaboration. These collaborations contribute to the competitiveness of Egyptian universities, positioning them as key players in the global academic community and enhancing their reputation and impact.

7. INNOVATIVE TEACHING METHODOLOGIES FOR ENHANCING STUDENT LEARNING EXPERIENCE

Egyptian universities are focusing on innovative teaching and learning methodologies to enhance their global competitiveness. These include active learning, technology integration, experiential learning, learner-centered approaches, interdisciplinary programs, and alternative assessment strategies. Active learning, such as problem-based learning, flipped classrooms, and collaborative projects, engages students in the learning process, fostering critical thinking and problem-solving skills. Technology integration, such as online platforms and virtual reality, promotes self-paced learning and remote collaboration. Experiential learning, such as internships and community engagement initiatives, allows students to apply knowledge in real-world settings, developing practical skills and a competitive edge. Learner-centered approaches, such as personalized learning plans and competency-based education, cater to the diverse needs and strengths of students, fostering a supportive and inclusive environment. Interdisciplinary programs encourage collaboration across different disciplines and nurture innovative thinking, equipping students with a broader skill set and preparing them to tackle complex real-world challenges. Alternative assessment strategies, such as project-based assessments, portfolios, and peer evaluations, provide comprehensive insights into students' abilities and competencies, fostering deeper learning, critical thinking, and problem-solving skills. So, exploring and implementing innovative teaching and learning methodologies is essential for enhancing the competitiveness of Egyptian universities. By adopting active learning, integrating technology, promoting experiential learning, embracing learner-centered approaches, developing interdisciplinary programs, and utilizing effective assessment strategies, Egyptian universities can provide a transformative educational experience that prepares students for the global challenges of the 21st century. These innovative approaches have the potential to elevate the quality of education, attract talented students and faculty, and contribute to the overall competitiveness of Egyptian universities.

Innovative teaching methodologies can significantly improve students' learning experience by fostering active engagement, critical thinking, and practical application of knowledge. Some such methodologies include the flipped classroom, project-based learning, gamification, collaborative learning, experiential learning, technology integration, case-based learning, peer instruction, adaptive learning, and mindfulness and reflective practices.

In a flipped classroom, students learn foundational concepts outside of class through pre-recorded lectures or online resources, with classroom time dedicated to interactive discussions, problem-solving activities, and collaborative projects. This approach allows students to engage in active learning and receive personalized support from their instructor. Project-based learning involves students working on real-world projects that require them to apply their knowledge and skills to solve authentic problems. Gamification incorporates game elements into the learning process, making it interactive and enjoyable. Collaborative

learning emphasizes group work and peer-to-peer interaction, encouraging teamwork, communication skills, and a deeper understanding of the subject matter. Experiential learning focuses on hands-on experiences that allow students to apply theoretical knowledge in real-world contexts.

Technology integration in teaching can enhance the learning experience by providing access to a wide range of learning materials, promoting active learning, and facilitating personalized instruction. Case-based learning involves analyzing real or hypothetical cases to develop problem-solving skills and critical thinking abilities. Peer instruction promotes deeper understanding, peer learning, and the identification of misconceptions.

Adaptive learning uses technology to personalize the learning experience based on individual student needs and progress. It employs algorithms to provide customized content, assessments, and feedback, helping students learn at their own pace and address specific learning gaps. Mindfulness and reflective practices involve promoting self-awareness, metacognition, and introspection, enhancing self-directed learning skills.

By adopting these innovative teaching methodologies, educators can create dynamic and engaging learning environments that foster critical thinking, collaboration, creativity, and practical application of knowledge, ultimately enhancing the overall learning experience for students.

8. ENHANCING FUNDING AND RESOURCE ALLOCATION FOR RESEARCH IN EGYPTIAN UNIVERSITIES

Egypt's economy is a "factor-driven" one, with low salaries, productivity, and economic growth (El Hadidi & Kirby, 2015a, 2016). It competes primarily on unskilled labor and natural resources. The decline in innovation potential is attributed to factors such as low quality of scientific research institutions, poor performance of higher education, the absence of an educational system that fosters innovation, low private sector contribution to scientific research, low rates of technology transfer, low university spending on R&D, weak university-industry collaboration in R&D, and low government spending on R&D (El Hadidi & Kirby, 2015a, 2016; Kirby & Ibrahim, 2013; Hattab, 2014).

Egypt's overall ranking in terms of innovation has steadily declined (CAPMAS, 2012 [for context on data period]; Global reports cited align with the challenges described by El Hadidi & Kirby) from 59 out of 114 in 2005/2006 to 83 out of 139 in 2010/2011. The country is ranked 108th out of 142 nations in the Global Innovation Index (GII, 2011) for progress and innovation, 113th out of 142 nations for the calibre of its scientific research institutions, and 83rd for its capacity for innovation in the World Economic Forum's Global Competitiveness Report 2011-2012.

The country's poor university sector, heavily centralized and run by the Ministry of Higher Education and the Egyptian Supreme Council, results in institutions lacking autonomy and independence (El Hadidi & Kirby, 2015a, 2016; Barsoum, 2014). The country has been falling

in the rankings for the quality of higher education and training, with 70% of the overall budget going to salaries and wages.

In recent years, the goals and focus of Egyptian higher education have changed, with the educational system responding positively to international trends in education. Modernizing education is now seen as a way to promote economic progress, but reforms in the school system, including restructuring, are needed to develop creativity and independent thinking.

Egyptian universities are among the top 500 globally, making significant contributions to R&D, technology transfer, and entrepreneurship. However, Egypt was placed last among the 69 participating nations in terms of education contribution to entrepreneurship growth and 68th for research and development and technology transfer (Hattab, 2014; Kirby & Ibrahim, 2013). Improving funding and resource allocation is essential for supporting research and innovation in Egyptian universities. Here are some strategies that can be implemented to enhance funding and resource allocation:

Government investment is a crucial factor in funding research and innovation in universities. Increased government budgets can provide the necessary financial resources for research activities, infrastructure development, and innovation initiatives. Research grant programs can offer competitive funding opportunities for faculty members and researchers, supporting various research areas, including basic and applied research, interdisciplinary projects, and collaborations with industry partners or international institutions. Clear guidelines, transparent evaluation processes, and timely disbursement of funds are essential for fair allocation.

Industry collaboration and sponsorship can attract additional funding for research and innovation by engaging with private sector companies, leading to sponsored research projects, joint ventures, and technology transfer initiatives. Universities can establish research centers or institutes with industry partnerships to facilitate collaboration and funding opportunities.

Alumni and philanthropic contributions can provide additional financial support for research and innovation by establishing effective alumni engagement programs, cultivating strong relationships with alumni, and showcasing the impact of research. Universities can also actively seek philanthropic partnerships to support specific research projects or establish funding endowments for long-term sustainability.

Strategic partnerships and consortia can pool resources and leverage expertise to undertake larger-scale research projects. Transparent resource allocation mechanisms ensure fair distribution of resources, building trust and encouraging healthy competition.

Research infrastructure development is essential for supporting high-quality research, including well-equipped laboratories, research centers, and specialized facilities. Seed funds and innovation grants can support early-stage research and innovation projects, bridging the gap between initial ideas and more substantial funding opportunities.

International funding opportunities can provide additional resources for research and innovation by collaborating with international funding agencies, participating in global

research programs, and leveraging international partnerships. Efficient resource management practices optimize the utilization of available funds and resources, identifying areas for improvement, eliminating waste, and maximizing the return on investment.

By implementing these strategies, Egyptian universities can improve funding and resource allocation, thereby creating a supportive environment for research and innovation. This, in turn, can enhance the research output, attract talented researchers, foster collaboration, and contribute to socioeconomic development and knowledge creation in Egypt.

9. STRATEGIES FOR IMPROVING GLOBAL RECOGNITION AND RANKINGS OF EGYPTIAN UNIVERSITIES

University rankings play a crucial role in the international "battle for excellence," serving as benchmarks for evaluating higher education institutions and assessing their global competitiveness. These rankings have emerged in response to globalization and the need for transparent information that underpins economic growth. They encourage healthy competition among universities, providing incentives for performance improvement. Governments, academics, and industry stakeholders utilize these rankings to inform policies, job choices, and investment decisions (Kirby, 2006; Kirby et al., 2011; Etzkowitz, 2003).

The increasing importance of university rankings emphasizes the need for accessible data regarding the quality and effectiveness of higher education institutions. Rankings are effective tools for benchmarking and quality assurance, shaping perceptions of educational excellence. High-achieving students and their families are often drawn to universities with strong reputations, influencing funding contributions from both public and private sectors.

To enhance the global recognition and rankings of Egyptian universities, a comprehensive approach focusing on academic excellence, research impact, international collaboration, and institutional reputation is essential. The following strategies are proposed, categorized into short-term, medium-term, and long-term priorities for clearer stakeholder guidance:

- Short-Term Strategies
  - Increase Funding for Research and Infrastructure: Allocating additional resources to support research activities and improve facilities.
  - Initiate Curriculum Reform: Updating curricula to align with international standards and industry needs, enhancing educational quality.
- Medium-Term Strategies
  - Invest in Faculty Development Programs: Offering competitive salaries, research grants, and professional development opportunities to attract and retain high-caliber faculty members.

- Establish International Partnerships: Fostering collaborations with leading universities and research institutions to enhance cross-cultural learning and global visibility.

- Long-Term Strategies
  - Build State-of-the-Art Research Facilities: Developing modern laboratories and research centers to support high-quality research outputs.
  - Foster a Culture of Innovation and Entrepreneurship: Encouraging an entrepreneurial mindset within the university community, promoting innovative research and collaboration with industry.

Quality assurance and accreditation from reputable international bodies are critical for enhancing the credibility of degree programs. Additionally, developing career services and internship programs will improve graduate employability by aligning academic programs with industry demands.

To further support these initiatives, a robust alumni network should be established to engage graduates and encourage their involvement in university development. Reputation management and marketing efforts should be enhanced to increase visibility and improve the institution's global perception.

The focus must be on impactful research that addresses societal challenges and contributes to national and global development. Enhancing institutional governance practices will foster transparency, accountability, and good governance.

It is important to recognize that improving the global recognition and rankings of Egyptian universities is a long-term commitment requiring sustained efforts and collaboration among various stakeholders. By implementing these strategies collectively, Egyptian universities can significantly advance their reputation and position in the global academic landscape.

10. INCREASING INDUSTRY INVOLVEMENT IN BRIDGING ACADEMIA AND THE JOB MARKET IN EGYPT

The gap between graduates' employability and industry expectations is a significant issue in the higher education system (Kirby & Ibrahim, 2013; Leydesdorff & Etzkowitz, 2004; Bruneel et al., 2010; Brimble, 2007; Kirby et al., 2011). To address this, several recommendations are suggested.

1. Foster student motivation by engaging students in diverse activities outside the traditional curriculum, such as college fests, hackathons, and art-related events.
2. Develop a balanced syllabus, incorporating foundational subjects with hands-on practical experience and online platforms for learning the latest technologies.

3. Provide workplace exposure through internships, guest lectures, one-on-one mentoring, and industry engagement programs.
4. Focus on capacity development, a long-term process that bridges the industry-academia gap. Individuals, including students, faculty, and organizations, must take responsibility for enhancing their capabilities and embracing lifelong learning to adapt to future changes and disruptions caused by emerging technologies.
5. Establish a consistent knowledge transfer ecosystem, connecting various elements, including new curriculum development, faculty development programs, innovative teaching practices, industry partnerships for internships, and an expert network supported by university management. This ecosystem should provide motivating and thought-provoking information on new trends and developments.

We conclude that Egypt has the advantage of a large pool of motivated and skilled individuals. However, the quality and employability of graduates require significant improvement. Bridging the industry-academia gap is a vital step towards harnessing the potential of Egypt's young population, which is projected to make the country the youngest in the world by 2030. Collaboration among students, universities, organizations, and the government is essential to address this challenge and enhance the competitiveness of Egyptian universities. By implementing the aforementioned recommendations, stakeholders can work together to create a positive and employable workforce that contributes to Egypt's overall growth and development.

10.1. How to Bridge the Gap Between Academia and Industry?

Businesses and industry must get more involved if they want to bridge the knowledge gap between the classroom and the labour market. To promote more solid collaboration and partnerships, the following tactics might be used: The creation of industry advisory boards, collaborative research projects, internship and cooperative programmes, industry guest lecturers and visiting professionals, curriculum alignment, industry-sponsored projects, mentorship programmes, industry-focused workshops and seminars, job fairs and recruitment events, collaborative innovation and incubation centres, and ongoing professional development are just a few of the strategies discussed here for enhancing educational capacity.

Universities can improve the relevance of higher education to the industry (Kirby & Ibrahim, 2013; Bruneel et al., 2010; El Hadidi & Kirby, 2015a) by establishing industry advisory boards, encouraging collaborative research projects, developing robust internship and cooperative education programs, involving industry experts as guest lecturers or visiting faculty members, regularly reviewing and updating academic programs, promoting industry-sponsored projects, establishing mentorship programs, organizing industry-focused

workshops and seminars, arranging job fairs and recruitment events, and establishing collaborative innovation and incubation centers. These strategies aim to provide insights into industry trends, skills requirements, and emerging job market needs, and to provide practical solutions to industry challenges. By incorporating industry-relevant courses, practical training, and experiential learning opportunities into the curriculum, universities can foster an entrepreneurial culture and facilitate the development of innovative solutions to industry challenges.

By implementing these strategies, universities can ensure that their graduates are equipped with the skills and knowledge they need to succeed in the workforce and that their research is aligned with the needs of industry. By implementing these strategies, universities can enhance their collaboration with industry and businesses, foster a more seamless transition from academia to the job market, and ensure that graduates are equipped with the skills and knowledge that align with industry needs.

11. RESULTS AND DISCUSSION

The article provides a comprehensive review of competitiveness issues faced by Egyptian universities and offers solutions in the form of plans and suggestions. It emphasizes the importance of strengthening governance and autonomy, implementing robust quality assurance mechanisms, fostering entrepreneurship and innovation ecosystems, and collaborating with industry to bridge the gap between academia and the job market. It also highlights the need for investment in infrastructure and resources, such as laboratory equipment, libraries, information technology services, and research grants.

The article also emphasizes the importance of providing comprehensive student support services, including counselling, career guidance, and extracurricular activities, to foster a student-centred learning environment. It also emphasizes the importance of promoting ethical conduct and integrity in research and academic activities, implementing policies and providing training on research ethics, plagiarism, and academic integrity. Effective communication and outreach strategies are also highlighted, such as using digital platforms, and social media, and organizing international conferences and events to showcase research and academic excellence. The article also highlights the benefits of engaging with alumni and creating a strong network of graduates. The article emphasizes the importance of establishing a monitoring and evaluation framework to assess the effectiveness of implemented strategies, regularly reviewing progress, collecting feedback from stakeholders, and making necessary adjustments to enhance competitiveness continuously.

Egyptian universities can enhance their competitiveness by assessing their current situation, identifying key challenges, developing a strategic plan, enhancing research output and faculty qualifications, embracing technology and digital resources, fostering collaborations with international institutions, implementing innovative teaching methodologies, enhancing global recognition and rankings, improving funding and resource

allocation, strengthening industry-academia collaboration, and monitoring and evaluating progress (Kirby, 2006; Kirby et al., 2011; Etzkowitz, 2003; Leydesdorff & Etzkowitz, 2004). A comprehensive assessment of the university's competitiveness, including rankings, research output, faculty qualifications, infrastructure, and other relevant factors, is essential. Key challenges may include inadequate research infrastructure, limited international collaborations, lack of faculty talent, or outdated educational approaches. A strategic plan should be developed to address these challenges, tailored to the university's unique context and strengths. Effective strategies to improve research output and faculty qualifications include providing funding for research projects, establishing research centers, promoting interdisciplinary collaboration, offering competitive compensation packages, professional development opportunities, and a supportive work environment. Embracing technology and digital resources in teaching, learning, and research can involve investing in advanced infrastructure, providing training for faculty and students, and promoting online learning platforms and digital tools.

Fostering collaborations with international institutions, implementing innovative teaching methodologies, enhancing global recognition and rankings, improving funding and resource allocation, and strengthening industry-academia collaboration are also crucial steps. Continuous evaluation and improvement of these strategies are necessary to ensure the university's competitiveness remains relevant and effective.

12. CONCLUSIONS

This study emphasizes the urgent need to enhance the competitiveness of Egyptian universities and elevate their global stature. The analysis of current international rankings has identified critical challenges, including insufficient research funding, quality of education, research output, infrastructure, international collaboration, language proficiency, brain drain, and governance issues.

The recommendations provided establish a comprehensive framework for improving competitiveness. By focusing on performance metrics, promoting academic freedom, enhancing education and research quality, and leveraging Egypt's unique advantages, universities can strive for global recognition. Additionally, the proposal for an OIC ranking system offers an opportunity to create benchmarks for Arab universities, fostering cooperation and healthy competition in the region (Concept aligns with benchmarking discussed in Alden & Lin, 2004).

To effectively implement these strategies, collaboration among stakeholders—including government agencies, academic institutions, faculty, students, and industry partners—is essential. Continuous assessment and adaptation of these strategies will be crucial for sustained progress. By addressing these challenges, Egyptian universities can transform into centers of academic excellence, research innovation, and international collaboration, (Kirby

et al., 2011; Leydesdorff & Etzkowitz, 2004; Kirby & Ibrahim, 2016) thereby contributing to the growth of Egypt's higher education sector and enhancing its global recognition.

Coordinated efforts are necessary to overcome existing obstacles and improve the international standing of Egyptian universities. By adopting the proposed strategies and forming collaborative partnerships, they can enhance their competitiveness, elevate their global position, and significantly contribute to knowledge and innovation both in Egypt and beyond. This approach will not only benefit the universities themselves but also support broader societal development within the country (El Hadidi & Kirby, 2015a, 2016; Kirby et al., 2011).

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