

# Leveraging the Quadruple Helix for Sustainable Change in Higher Education

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## Abstract:

This study aims to analyze the role of the Quadruple Helix model in strengthening the quality of Islamic higher education. The type of research used is qualitative research with a case study approach. Data collection techniques used include interviews, observations, and documentation. The data analysis process is carried out through three stages, namely data reduction, data presentation, and data verification, with an inductive, deductive, and comparative approach. The results of the study indicate that the application of the Quadruple Helix model in the transformation of the State Islamic Institute (IAIN) into the State Islamic University (UIN) can strengthen the transition process through the synergy of four leading actors. First, government actors play a role in making regulations that facilitate changes in higher education levels. Second, industry actors function to establish cooperation in academic development. Third, academic actors are responsible for managing quality education services. Finally, community actors play a role as active supporters in educational activities. This study provides important implications for the development of Islamic higher education through the application of the Quadruple Helix model as a strategic foundation for improving academic quality, expanding networks, and creating synergy between government, industry, academics, and society.

**Keywords:** *Quadruple Helix, Islamic Higher Education, Strategic Management, Transformation Process*

## Abstrak:

Penelitian ini bertujuan untuk menganalisis peran model Quadruple Helix dalam memperkuat mutu pendidikan tinggi Islam. Jenis penelitian yang digunakan adalah penelitian kualitatif dengan pendekatan studi kasus. Teknik pengumpulan data yang digunakan meliputi wawancara, observasi, dan dokumentasi. Proses analisis data dilakukan melalui tiga tahapan, yaitu reduksi data, penyajian data, dan verifikasi data, dengan pendekatan induktif, deduktif, dan komparatif. Hasil penelitian menunjukkan bahwa penerapan model Quadruple Helix dalam transformasi Institut Agama Islam Negeri (IAIN) menjadi Universitas Islam Negeri (UIN) dapat memperkuat proses transisi tersebut melalui sinergi empat aktor utama. Pertama, aktor pemerintah berperan dalam pembuatan regulasi yang mempermudah perubahan jenjang perguruan tinggi. Kedua, aktor industri berfungsi menjalin kerja sama dalam pengembangan akademik. Ketiga, aktor akademis bertanggung jawab dalam mengelola layanan pendidikan yang berkualitas. Terakhir, aktor masyarakat berperan sebagai pendukung yang aktif dalam kegiatan akademik. Penelitian ini memberikan implikasi penting dalam pengembangan pendidikan tinggi Islam melalui penerapan model Quadruple Helix sebagai landasan

strategis untuk meningkatkan kualitas akademik, memperluas jejaring, serta menciptakan sinergi antara pemerintah, industri, akademisi, dan masyarakat.

**Kata Kunci:** *Quadruple Helix, Pendidikan Tinggi Islam, Manajemen Strategis, Proses Transformasi*

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## INTRODUCTION

Education is one of the main pillars in building the progress of a nation. In Indonesia, higher education, especially in Islamic religious universities, has undergone a significant transformation that encourages an increase in the quality of competent human resources (HR) ready to face global challenges (Achruh & Sukirman, 2024; Marjuni, 2022). Islamic universities in Indonesia, which include state religious universities (PTKIN) such as State Islamic Colleges (STAIN), State Islamic Institutes (IAIN), and State Islamic Universities (UIN), are increasingly relevant in facing the challenges of the times (Abidin et al., 2022; Bashori & Lailisna, 2023; Sulaiman & Yanasari, 2022). The transformation from IAIN to UIN reflects the institution's efforts to expand its academic scope and respond to the needs of globalization in higher education (Firdaus et al., 2023; Niam et al., 2023). However, this journey also faces various challenges in academics, organizations, and mentality among the academic community.

Higher education in Indonesia has been widely discussed in the context of improving the quality and relevance of the curriculum. Sumiati and Tekke (2024) emphasize the importance of improving the quality of education to produce competitive human resources at the global level. Bunyamin (2021) states that higher education plays a vital role in responding to the challenges of the times and protecting society from the negative impacts of globalization. In addition, the development of the Quadruple Helix model involves collaboration between government, industry (Carayannis et al., 2022; Shyiramunda & Bersselaar, 2024), academics, and society (Carayannis & Campbell, 2021; Hakeem et al., 2023; Jancelewicz, 2022), is also increasingly receiving attention as an innovative approach to addressing sustainable development issues, including in the higher education sector.

The transformation of Islamic higher education is an important focus and hot topic of study, especially in improving the quality of education. Alamin et al. (2024) stated that although many PTKINs have developed rapidly, they still face various obstacles in transforming their curriculum and teaching models to meet the demands of the times. One of the main obstacles to developing PTKIN is the lack of systematic scientific methodology among lecturers and students (Winoto, 2022). Research related to the implementation of the Quadruple Helix model in education is also growing, as expressed by Martinez et al. (2021), who highlighted the potential of this model in creating innovation in the education sector.

The research gap is based on the assumption that few studies still apply the Quadruple Helix model in the context of Islamic higher education in Indonesia. Most studies focus more on administrative and policy aspects without discussing how collaboration between government, industry, academics, and society can lead

to more significant changes in sustainable higher education development. This study offers novelty by analyzing the interaction between the four components in creating sustainable change in higher education, especially in PTKIN, which is transforming.

This study aims to analyze the role of the Quadruple Helix model in supporting transformation and sustainable change in Islamic higher education, especially in the context of changing IAIN to UIN. The study explores how Quadruple Helix strengthens the quality of higher education at IAIN Madura with four actors as its synergy to support the transition process of IAIN Madura to UIN. Where government actors have a role in making regulations so that it is easier for a university to move levels, Industry Actors have a role as a sector that can work together in academic development, academic actors have a role in managing good services for the entire scholarly community, and the last is community actors who can play a role as supporters of the academic activity process.

The research topic is essential because it provides a perspective on the development of higher education in Indonesia, especially in Islamic higher education. The research can provide an original contribution to understanding how collaboration between various sectors can create more effective and sustainable changes in higher education. The results of the study are expected to provide recommendations that can be implemented to support the transformation of IAIN into UIN, both in terms of policy, curriculum, and the mentality of the academic community, so that PTKIN can play a more significant role in forming quality and highly competitive human resources at the global level.

## RESEARCH METHOD

This study uses a qualitative method with a case study approach that aims to analyze how the Quadruple Helix approach can provide synergy in developing the quality of higher education. The approach was chosen because it can describe in depth the dynamics that occur between government, industry, academics, and society in the context of higher education (Stewart, 2022). Through a descriptive-analytical approach, this study will reveal the factors influencing the success or challenges in transforming higher education institutions, especially at IAIN Madura. IAIN Madura, located in Pamekasan, Madura Regency, was chosen as the study location because it is in the process of transforming from IAIN to UIN and is a relevant example to explore how the Quadruple Helix concept can be implemented in this context. Thus, this study will provide a deeper understanding of the dynamics in the transformation of higher education.

Data collection in this study was carried out through several stages. The first stage is the collection of primary data obtained through in-depth observation and interviews with various parties directly involved in the institutional transformation process at IAIN Madura. These parties include lecturers, students, institutional leaders, and members of the surrounding community who can provide perspectives on the changes that occur. The second stage is secondary data collection conducted through library research, accessing literature related to the research topic from various relevant sources and documentation related to ongoing policies and transformation processes (Priya, 2021).

The data processing and analysis using the Miles and Huberman analysis model (Phillips et al., 2024). The analysis begins with extensive data collection through various methods, such as interviews and documentation. The first step in the study is data reduction, which is filtering and sorting relevant and significant information to answer the research questions. The data that has been sorted will be presented in a more systematic form to facilitate understanding and further analysis. Conclusions will be drawn based on the findings generated from the data that has been analyzed to provide a clearer understanding of the influence and challenges of implementing the Quadruple Helix approach in developing the quality of higher education at IAIN Madura.

## **RESULT AND DISCUSSION**

### **Result**

#### **Government Policy**

The government has a strategic role as one of the four existing actors. As Vice Chancellor III said, BN said, "The government here is in the process of transformation like opening a road. They are the ones who give permission, make policies, and ensure that the transformation process runs smoothly according to the rules. Intinyan, the government has a role as a party that directs and facilitates this process so that the goals of the transformation process can be achieved as best as possible. Thus, it can be known together that the government is in control of the transformation process that occurs in the institution. In addition to issuing permits, the government provides support through funding and facilities to accelerate the transformation process.

The government supports regulations and policies that allow the campus to expand majors and study programs, followed by the provision of funding and facilities, where this funding is used for infrastructure development and others, the supervision and monitoring of the transformation process, and collaboration with community industries.

In the transformation process, the government has a role in regulation and licensing. The transformation process of IAIN Madura into UIN Madura has received support from the Chief of Staff of the President of the Republic of Indonesia, namely Moeldoko, in addition to the local government, namely H. Baddrut Tamam as the Regent of Pamekasan also expressed support for the process of transforming IAIN Madura into UIN Madura. In an interview conducted via voice call, the Regent of Pamekasan stated that he was ready to support this transformation process fully. Baddrut Tamam also added, "It is hoped that the change of IAIN to UIN will increase the enthusiasm of the community to achieve a global position and be a tangible manifestation of change. Considering that Pamekasan is a district with a larger number of Islamic Boarding Schools than other districts in Madura, it is necessary to invest in the field of education, which is expected to have a multiplier effect on the community, especially in Pamekasan and the development of local human resources".

Some of the things that need to be done by the government for the transformation process of IAIN Madura are preparing regulations; as has been mentioned, the government has the power and authority to decide all matters in

society. The government has a duty as a regulator and has the authority to review policies in the form of legislation and government and regional regulation. In higher education institutions, the government has a policy of providing accreditation assessments, level transitions, and the formation of new study programs. The decision made by the government is absolute and binding and is a reference for people's daily activities. The transformation process that IAIN Madura is carrying out must certainly have permission from the Ministry of Religion, which refers to the central government, such as the President.

Facilitator: In this case, the government provides space for every community to develop their lives. One of them is by providing public services in the form of education. With the existence of State Universities, they will be able to produce superior and competitive human resources through various knowledge obtained. In transforming IAN Madura into UIN Madura, the government has provided an open opportunity for its development. This decision proves that the government has played a role in providing access to PTKIN to develop, including in the process of IAIN Madura.

Evaluator, the granting of authority by the government for a community activity will also give rise to the supervision of the results achieved. In addition to providing authority in the process, the government also has the authority to evaluate the results achieved from a policy to create other risk management policies. It is mentioned in a study that the evaluator will play a role in assessing the performance of the party being supervised so that later, an evaluation of the performance that has been carried out will be held. The government is authorized to assess the readiness and feasibility of the transformation process of IAIN Madura.

### **Industry Cooperation**

As vice chancellor, MI gave information about industrial actors at the institution; MI said that "industry is a party from the business sector and companies that can collaborate with the campus. The industry here collaborates in many things such as providing internship programs for students, to providing joint research opportunities that can provide many benefits for the campus and the industry itself". In a separate interview, BN added that "industry actors have a role as strategic partners who can help connect academia with needs in the workplace." It can be concluded that industrial actors have a role as partners who help campuses prepare graduates who are ready to work; with the provision of internship programs and research collaborations, campus graduates are expected to have more relevant skills and experience and are prepared to compete.

Some of the roles of the industry encountered in the field are in the form of curriculum collaboration that is proposed to suit the needs of the world of work, the opening of internship and work practice programs to provide direct experience in the world of work so that it can build practical skills and increase readiness to face the world of work, the existence of research and innovation cooperation by encouraging all campus components to be involved in applied research, The last is the existence of recruitment opportunities for campus out-of-campus through relationships that have been established.



## Academy

Academic actors have an equally important role. SH said that the actors here include lecturers, researchers, and the entire academic community, who are directly involved in the institution's educational, research, and community service activities. In his interview, SH confirmed that "they have a major role in developing a new curriculum, developing study programs, and preparing students through relevant competencies both in religious and general sciences." The opinion of ZS supports this; a representative of LPM said that "academics are also a driving force in conducting innovative research and guiding students to become graduates who are ready to face the challenges of the world of work." From the interview results above, without the academic role, the goal of this transformation process will certainly not be achieved. Academic actors, including lecturers, researchers, and other academics, have a role in developing a broader and relevant curriculum.

Under the author's observations, several important roles of academic actors can be found in the form of the development of new curricula that are relevant to the needs of the times and can produce work-ready outputs, the improvement of student competence carried out both in the teaching and learning process and through skill development such as seminars and workshops, the conduct of applicable and impactful research from which this research is expected to be applied directly and provide The benefits for the wider community, the last is the improvement of academic quality and professionalism carried out through lecturer training and improvement of academic facilities.

Academic actors are movers and bearers of the grand vision and mission to realize UIN as a center of superior Islamic education. Academic actors, consisting of lecturers, researchers, and institutional leaders, have an important role in developing study programs, expanding cooperation networks, and strengthening institutions' intellectual and spiritual foundations. They bring a spirit of innovation and a modern vision emphasizing the importance of religious science and the mastery of science and technology as a reflection of adaptive and contextual Islamic education. As the Rector of IAIN Madura, SH admitted that "with the expertise and dedication of the academic community, this transformation process is expected to make UIN a relevant, dynamic, and globally competitive educational center." As the chairman of LPM, MU added that these academics play various key roles in boosting institutional change to respond to the needs of the times.

According to SH, academic actors play several key roles in the transformation process of IAIN into UIN. First, they drive the Vision and Mission by ensuring Islamic values are integrated with contemporary science. Second, they enhance education quality by developing adaptive and integrative curricula and creating new study programs. Third, they contribute to research and publication, focusing on various fields beyond religious studies. Fourth, they build networks and domestic and international collaborations to strengthen UIN's global competitiveness. Fifth, they foster human resource development through training, seminars, and professional programs. Sixth, they innovate in knowledge integration, blending religious and general education aligned with Islamic values.

Lastly, academics support transformation policies by participating in decision-making and providing academic input to ensure policies are data-driven and well-researched.

### **Community Support**

Community actors include local figures, social organizations, parents, students, and the community around the campus. ANH as a stakeholder in the institution, said that if "the community can help create synergy between the campus and the surrounding environment, they can provide input on the real needs that occur in the community, which can be used as a basis for curriculum development." In a separate interview, SS as the Dean of the Faculty of Tarbiyah said that "the community as a whole has an important role in providing moral, social, and even logistical support so that the transformation process can run smoothly and according to the target." In this context, the community is not only the beneficiary but also one of the determinants of the direction of the institution's education and research programs. Community involvement contributes to building social legitimacy for institutions to ensure that the programs designed align with the community's needs. In addition, the community also has a role in creating a conducive climate as a continuation of transformation with a cooperation network, supporting community service programs, and facilitating interaction between campuses and other sectors of society.

In the field observations carried out by the author, it was found that several things are synergistic for the community towards the sustainability of the transformation process, including social and moral support, which can be seen from the active involvement in various campus activities, the existence of relevant feedback on programs regarding community demands, increasing legitimacy and customer trust, The establishment of collaboration in the service program held by the institution, as well as the support of local logistics and infrastructure.

### **Discussion**

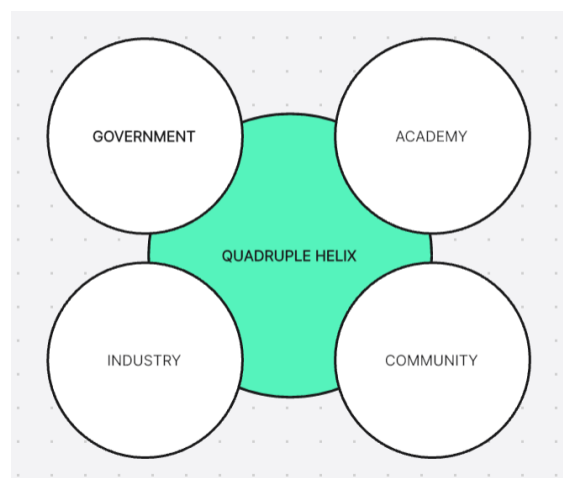
The change of IAIN to UIN will greatly determine the output quality produced. This change has meaning, especially for the change in academic culture and the development of moral character for the entire IAIN academic community (Tsauri, 2022). The plan is to establish UIN and integrate various sciences to eliminate denominations between general and religious science. This is considered important to provide a basis for Islamic ethics for developing Science and Technology while simultaneously implementing Islamic teachings professionally in social life. Through this change, IAIN will not become an unemployment-producing machine but produce output that can develop its scientific side and be absorbed into the world of work. IAIN Madura was declared to meet the criteria and requirements to change its form to the State Islamic University of Madura (UIN Madura). This was after signing a preliminary permit from the Ministry of State Apparatus Empowerment and Bureaucratic Reform (KemenPANRB) on July 29, 2024. The next goal is to get Initiative permission from the President of the Republic of Indonesia.

The transformation process certainly involves many processes and strategies that are difficult to implement. There needs to be measurable strategic

management. Strategic management is a systematic process of formulating, implementing, and evaluating strategies to achieve the long-term goals of an organization (Kramar, 2022; Ojogiwa, 2021). Strategic management is a process that involves long-term planning by optimizing resources to increase service effectiveness (Kramar, 2022; Ojogiwa, 2021). The last opinion states that strategic management aims to direct the organization toward achieving goals, including measurable and continuous strategy formulation, implementation, and evaluation (Bryson et al., 2024). From the above understanding, it can be concluded that strategic management is a process that includes analysis, planning, implementation, and evaluation of strategies to achieve the long-term goals of an organization. Strategic management here certainly plays an important role in ensuring an organization can survive and thrive amid environmental changes.

In the modern context, this transformation process also requires broader collaboration, considering the dynamics of globalization, digitalization, and the need for sustainable innovation. The Quadruple Helix approach emerged as a strategic solution integrating four key actors in the transformation process: Government, Industry, Academia, and Society. This model of approach recognizes the importance of community engagement as an essential element in creating relevant and sustainable innovation (Carayannis et al., 2022). The collaboration between these four helices allows the formation of synergy in formulating policies, developing technology, and implementing solutions responsive to social and economic needs.

In contrast to Triple Helix, which only emphasizes the interaction of government, Industry, and academia, this approach adds to the dimension of society as a driver and a beneficiary of the resulting change (Shyiramunda & Bersselaar, 2024; Taratori et al., 2021). Through this approach, the institutional transformation process is not only focused on technological and economic aspects but also considers social values and active participation of the community. This is certainly very relevant to create a more inclusive and socially welfare-oriented ecosystem. The use of the Quadruple Helix approach in Figure 1, which is a strategy for the development of educational institutions, certainly requires synergy from the four actors above in realizing the goals of an organization.



**Figure 1. Model Quadruple Helix**



Each stakeholder related to the Quadruple Helix collaboration has different tasks based on their capabilities and competencies. However, as a consequence of a system or pattern, every actor in Quadruple Helix must be able to cooperate and collaborate as a whole and as a solid unit (Hakeem et al., 2023; Martinez et al., 2021). If played optimally, the synergy created by the actors can run well if it does not depend on other actors. The industry position must be consistent with other actors' views on the Quadruple Helix approach. Industry must benefit society as well as the economy. The industry is expected to support the community's creative economy. In transforming IAIN into UIN, Industri has a role in academic development, such as cooperation between industries in the surrounding environment to support IAIN Madura's academic program.

One of the collaborations by IAIN Madura with Industry is an internship program that is expected to develop students' abilities and show the existence of IAIN Madura. The role of Industry is certainly no less important in the Quadruple Helix approach. This statement is based on research conducted by Whitson et al. (2021) shows that the Industry will create opportunities for cooperation with other small industries and open access to jobs for the community. The Industry is very influential on a country's economy. Economic transactions in the industrial sector will meet people's needs for products or services (Koskelainen et al., 2023). In the field of education, apart from being a form of academic development, the Industry can create educational investment opportunities for universities (Blankesteyn et al., 2021; Chaudhry et al., 2024; Roslan et al., 2022). As a higher education institution in the process of institutional transformation, IAIN Madura must establish a good relationship with the surrounding Industry. This may provide investment opportunities that function as access to improve the quality of educational services at IAIN Madura.

IAIN is an educational institution organized by the Ministry of Religion and is a State Higher Education institution established based on the unity of Islamic knowledge. The main mission of IAIN is to carry out higher education based on Indonesian national culture, which scientifically carries out education, research, and community service on Islamic studies based on existing laws and regulations. The university is a higher education and research institution providing various degrees (Khan et al., 2021; Wong & Chapman, 2023). Each university provides both undergraduate and postgraduate education. It can be concluded that the State Islamic University (UIN) is an Islamic University assisted by the Ministry of Agriculture (Kemenag), which is by the law and is the organizer of academic and professional education programs in various disciplines of general science and religious knowledge.

The existence of IAIN Madura cannot be separated from the two institutions that preceded it, namely the Faculty of Tarbiyah IAIN Sunan Ampel in Pamekasan (1966) and STAIN Pamekasan (1997). Since its establishment until the beginning of 1987, this branch faculty has only organized one department, namely the Department of Islamic Religious Education (PAI), for the Baccalaureate Program, which later graduates will have a Bachelor of Arts (BA) degree. Then, in 1988, the baccalaureate program was abolished and switched to the Bachelor's program (S-1). This change is intended to improve graduates' quality to society's

needs and the demands of the times. After 31 years of being a branch faculty of IAIN Sunan Ampel, the government changed the status of the Faculty of Tarbiyah to an Independent University under the name of Sekolah Tinggi Agama Islam Negeri Pamekasan (STAIN Pamekasan). This change is based on the Decree of the President of the Republic of Indonesia No. 11 of 1997 concerning establishing the Negri Islamic Religious College on March 21, 1997 (12 dzulqo'dah).

During its time as a STAIN, various efforts and achievements have been achieved, of course, with many responses and enthusiasm from the community to the existence of STAIN Pamekasan. Finally, the existence of STAIN, which, according to Constitution No. 2 of 2012, concerns Higher Education in charge of organizing higher education "in one cluster of sciences," is no longer adequate to answer the needs of the community, the needs of national development, the growth of the number of students, and the rapid development of science and technology. Departing from the above needs, efforts were made to transfer the status from STAIN to the Madura State Islamic Institute (IAIN Madura) to have a wider authority, namely as an organizer of higher education in "several certain clusters of sciences."

This transformation effort was realized on April 5, 2018, and was signed by the President of the Republic of Indonesia. Officially, STAIN Madura changed its form to the Pamekasan State Islamic Institute (IAIN Pamekasan). Various changes continue to be made within IAIN Madura to facilitate a process of self-adjustment to the community's needs. However, these changes have not been satisfactory to the organizers of this Islamic Higher Education Institution, so the idea of changing the status from IAIN to UIN has emerged. The most popular reason is that it is related to market demand and saves the future of IAIN.

## CONCLUSION

This approach strengthens the involvement of four key elements in the Quadruple Helix to improve the quality of Higher Education. Through the synergy of these four actors, the Quadruple Helix approach strengthens the foundation and relevance of UIN as an institution that is adaptive and oriented to social and economic change, relevant, and highly competitive. This collaboration creates a mutually supportive partnership so that UIN can become an institution that is not only academically superior but can positively impact the wider community. Not only is the quality of education and research at UIN improving, but the collaboration between the four Quadruple Helix actors also helps ensure that UIN can act as an educational center that is adaptive, innovative, and able to answer the challenges of the times. This study is limited by the scope of data collection and contextual factors that may affect the generalizability of the findings. Future research should explore the long-term impact of Quadruple Helix collaborations on other higher education institutions in different regions to understand their potential and scalability better.

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