



Brain drain or brain circulation: exploring scholar views on working abroad in the era of global mobility

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Abstract

This study seeks to understand the causes and obstacles faced by graduates in the context of brain drain and brain circulation among alumni of Maulana Malik Ibrahim State Islamic University Malang. Brain drain describes the migration of educated people to other places, both regions and countries, due to better job opportunities and quality of life. This study uses a descriptive quantitative approach by collecting data through questionnaires distributed to 100 alumni from various faculties in 2025. The data were analyzed using IBM SPSS Statistics software with descriptive analysis methods. The findings show that the driving and restraining factors have a significant impact on graduate mobility, with averages of 3.69 and 3.85 (high category), respectively. The main driving factors consist of limited research facilities and career opportunities, while the restraining factors mainly include attractive financial income and international meetings. The study concluded that the brain drain phenomenon can be transformed into brain circulation if there are policies that strengthen research and involve alumni globally.

Keywords:

Brain Circulation; Brain Drain; Islamic Higher Education; Scholar Mobility

A. INTRODUCTION

The phenomenon in which college graduates leave their place of origin, either to other regions or abroad, is referred to in scientific studies as brain drain. This topic is the focus of research on the migration of educated workers in the era of globalization. According to several studies, a person's decision to move is not only influenced by a single factor, but is the result of a combination of conditions in the place of origin (factors that push people to move) and conditions in the destination (factors that pull people to move). For example, research shows that salaries that are not commensurate with knowledge and effort, limited career development opportunities, and an unsupportive work environment are important factors that encourage high-achieving graduates to consider moving (Santoso et al., 2022).

On the other hand, attractive factors such as adequate research facilities, extensive international networks, and a better quality of life are often the main reasons for educated people to move to other places. However, the majority of studies still only pursue certain professional groups or between countries, without an in-depth analysis of graduates from state universities, including Islamic universities, and how the interaction between push and pull factors arises in

the phenomenon of brain drain and the possibility of brain circulation(Mustika et al., 2022). Based on this, this study was conducted on graduates of the Maulana Malik Ibrahim State Islamic University Malang (UIN Malang), with the aim of understanding the factors that drive and attract alumni to switch, as well as analyzing the influence of the relationship between these two factors on the dynamics of loss and movement of experts in their home institutions (Yunitasari et al., 2021).

This is also in line with the opinion that emphasizes that brain drain in Indonesia occurs due to a combination of economic and structural factors, such as low research funding allocation, limited professional employment opportunities, and the attractiveness of other countries or regions that offer better facilities and compensation. At UIN Malang, it is important to note that alumni who have the potential to move outside the region or abroad can cause the loss of human resources that have been supported by their home institutions, but it does not rule out the possibility of brain circulation if these alumni return or remain involved in cooperation(Sarjito, 2024).

Although many studies discuss brain drain involving professionals or migration between countries, specific explanations regarding Indonesian public university graduates and clear analysis of the factors that drive and attract them in their interactions are still limited. (Chiky Cinta Aprillia et al., 2025).

Based on the above explanation, this study aims to identify and examine the factors that encourage UIN Malang graduates to move to other regions or abroad, which can lead to a loss of competent personnel (brain drain), as well as the factors that encourage them to stay and work outside their region of origin. This study also explores the relationship between these two groups of factors and how the dynamics that occur can affect the possibility of brain drain or brain circulation among UIN Malang graduates.

Theoretically, this study contributes to the development of studies on human resource management and academic mobility by broadening the understanding of the interaction between motivating and attracting factors in the context of Islamic educational institutions. Practically, the results of this research are expected to serve as a reference for universities and policy makers in formulating effective alumni management and development strategies, in order to reduce the risk of brain drain and strengthen brain circulation in the academic environment of UIN Malang.

B. METHODS

This study uses a quantitative approach with descriptive statistical methods. This approach was chosen because it provides a complete picture of the trends in the pushing and pulling factors that influence the decision of Maulana Malik Ibrahim State Islamic University Malang (UIN Malang) alumni to move outside the region or abroad. This study uses a quantitative descriptive approach, aiming to describe the phenomenon of brain drain in real terms through the collection and analysis of numerical data from survey results. Push factors refer to domestic limitations motivating migration, while pull factors refer to external attractions encouraging overseas mobility. The researcher used a questionnaire as a data collection tool with a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The research population consisted of alumni of UIN Maulana Malik Ibrahim Malang who graduated in 2025. To select the sample, the researcher used random sampling, so that each alumnus had an equal chance of becoming a respondent. In this study, there were 100 respondents from various faculties, namely FITK, Sharia, Economics, Science and Technology, Psychology, Humanities, and FKIK.

The main instrument used in this study was a closed questionnaire based on the Likert scale, which was designed to measure respondents' perceptions of the factors that made them want to transfer academically. The push factors were measured through several indicators, namely the perception that salaries and financial rewards in Indonesia are not commensurate with academic abilities, research facilities or academic support in Indonesia are still inadequate, job opportunities in their field of study in Indonesia are still limited, the working environment in Indonesia is uncomfortable due to complicated bureaucracy and inadequate facilities, and the

desire to gain international experience in order to improve their abilities and competencies. Meanwhile, pull factors are measured through indicators such as the perception that salaries, rewards, and research facilities abroad are better, more complete education and research facilities, greater opportunities to build international networks, a more professional work environment abroad, and the availability of work program support in the destination country.

The research data was collected by distributing printed questionnaires directly to alumni of UIN Maulana Malik Ibrahim Malang. Data collection was conducted during the UIN Malang graduation ceremony, which was held continuously at the end of 2025. This method was chosen so that researchers could obtain direct answers from recent graduates, thereby ensuring that the data obtained was more accurate and representative. In addition, this method also made it easier for researchers to ensure that all questionnaires were answered completely and according to instructions. The questionnaire consisted of closed statements used to measure two main variables, namely driving factors and pulling factors. The assessment was carried out using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The analysis was performed using descriptive statistics through the SPSS version 24 program. This descriptive analysis method was used to calculate the mean, frequency, percentage, and standard deviation for each indicator. The explanation of the average score results was based on predetermined categories:

Average Score	Interpretation Category
1.00 – 1.80	Strongly Disagree / Very Low
1.81 – 2.60	Disagree / Low
2.61 – 3.40	Neutral / Moderate
3.41 – 4.20	Agree / High
4.21 – 5.00	Strongly Agree / Very High

The research was conducted at Maulana Malik Ibrahim State Islamic University, Malang, during September and October 2025. This time period was chosen because graduation ceremonies are considered the best opportunity to meet alumni in person, allowing researchers to obtain representative and accurate responses from recent graduates.

C. RESULT & DISCUSSION

Descriptive Analysis of Driving Factors

This study aims to understand the dynamics of alumni mobility through an analysis of the factors that drive (push factors) and inhibit or attract (barriers/pull factors) the phenomena of brain drain and brain circulation. The analysis was conducted using descriptive statistical methods through the IBM SPSS Statistics program to determine the respondents' perceptions of each statement item on the questionnaire using a Likert scale (1–5).

Push factors reflect domestic conditions that cause alumni to feel the need to seek career, education, or research opportunities abroad.

Table 1. Results of Descriptive Analysis of Driving Factors

No	N	Minimum	Maximum	Mean	Std.Deviation
1. Salaries and financial rewards in Indonesia are not commensurate with my qualifications	10	1.00	5.00	3.63	1.00156
2. Research facilities or academic support in Indonesia are still Limited	100	1.00	5.00	3.71	0.98775

3	Job opportunities in my field of study are still limited	100	1.00	5.00	3.54	1.08637
4	The work environment in Indonesia is not conducive (bureaucracy, facilities, etc.)	100	1.00	5.00	3.76	1.00624
5	I want to gain international experience to improve my skills	100	1.00	5.00	3.79	0.98775

Mean Value: 3.69 (high category)

Interpretation:

An overall average score of 3.69 (high category) indicates that most respondents are likely to look for opportunities abroad due to various driving factors. This phenomenon reflects the structural and psychological conditions that encourage alumni to move abroad. Factors such as low salaries ($M = 3.63$), limited research facilities ($M = 3.71$), and a less supportive work environment ($M = 3.76$) indicate that there is pressure from institutions that encourage the desire to move. This result is in accordance with the research of (Muna Yastuti madrah, Warsiyah, 2023) who found that the limitations of research infrastructure and the lack of appreciation for scientific achievements are important variables in the intellectual migration decision of alumni of Islamic universities in Indonesia. (Muna Yastuti madrah, Warsiyah, 2023).

The research also supports the push-pull migration theory popularized by Todaro (1980), where migration occurs due to rational considerations regarding economic and career opportunities between the country of origin and the destination country. Furthermore, the highest score on the indicator of desire to gain international experience ($M = 3.79$) indicates that the mobility of alumni is not only influenced by inadequate conditions in the country, but also by the encouragement from within themselves to improve the quality of human resources. (Todaro, 1980)

Based on the theory of human capital proposed by Becker (1993), education and experience working abroad are considered a form of long-term investment that can improve one's ability and competitiveness in the global job market. This is supported by research by Irawan (2021) who researched the academic mobility of Indonesian students in Europe and found that the main reason they study abroad is to expand their academic abilities and network professional connections internationally. Thus, the theory of human capital not only explains why people move for economic reasons, but also as part of an effort to develop themselves and careers in a planned manner.

From a global perspective, the theory of intellectual mobility put forward by Castles and Miller (2009) provides a broader context to this phenomenon. They explained that modern academic mobility is part of the *brain circulation* process, not just a *brain drain*. This means that individuals who migrate bring with them the potential to transfer their knowledge and professional networks back to their home countries. These findings are consistent with the research of Castles and Miller (2009) which observed the significant contribution of the academic diaspora to strengthening cross-border research collaboration and increasing innovation in the home institution. In the context of this research, UIN Maulana Malik Ibrahim Malang alumni who are looking for international experience have the potential to become knowledge agents when they return to Indonesia, as explained by *the brain circulation* theory.

In addition, research by (Muna Yastuti madrah, Warsiyah, 2023) shows that the motivation of Indonesian students to study abroad is related to their desire to pursue global career opportunities and the hope of improving the quality of education, in accordance with human capital theory that emphasizes the importance of international experience. The study also

supports the conclusion that globally oriented graduates consider academic mobility as a way to improve their professional reputation and access scientific resources more broadly. Thus, the combination of structural factors (such as poor educational facilities and an imperfect meritocratic system at home) and personal factors (such as self-development drive and global career ambition) reinforces the truth of the push-pull migration theory and the human capital theory in explaining the phenomenon of intellectual migration.

Descriptive Analysis of Restraining Factors

Restraining factors are conditions abroad that attract alumni to continue their studies, research, or work in other countries.

Table 2. Results of Descriptive Analysis of Restraining Factors

No	N	Minimum	Maximum	Mean	Std.Deviation
1. Salaries and financial rewards abroad are more promising	10	1.00	5.00	3.9000	0.89330
2 Better overseas education and research facilities	100	1.00	5.00	3.89	0.986334
3 Opportunity to build a larger national network abroad	100	1.00	5.00	3.82	0.91431
4 The work environment abroad is more professional	100	1.00	5.00	3.84	0.89578
5 There is support for work programs in the destination country	100	1.00	5.00	3.79	0.85629

So the average pull factor result is: 3.85 (Fairly High Category)

Interpretation:

The overall average score of 3.85 indicates that respondents have a very positive perception of various pull factors from abroad. This shows that destination countries, especially those that are economically and academically developed, offer broader opportunities in terms of career, research, and professional competency improvement. In this case, better financial rewards are the main factor that attracts alumni, as they feel they are being rewarded appropriately for their abilities, with an average score of 3.90. In addition, modern and comprehensive research facilities in the destination country are supported by the latest technology, which scored 3.89. More extensive career opportunities and an international job market that values individual expertise and academic achievements received an average score of 3.82. A professional, open, and collaborative work environment is also a factor that encourages alumni to develop, with an average score of 3.84. In addition, an extensive global network provides opportunities to foster international relationships and access resources and opportunities at the global level, as seen in the average score of 3.79. In general, these attractive factors show that foreign appeal is very influential in determining alumni mobility decisions.

In terms of driving factors, it was found that limited research facilities, narrow career opportunities, inefficient bureaucracy, and an inadequate financial reward system were the main causes of alumni's desire to seek experience and self-development abroad. This condition indicates the existence of internal barriers within Indonesia's academic and professional ecosystem that have not been able to optimize the potential of alumni, thereby encouraging brain drain (Pangestoeti, 2025).

According to Saxenian, (2000), the pessimistic view of the brain drain phenomenon needs

to be reviewed because the mobility of educated personnel does not always lead to the loss of human resources, but can create productive brain circulation. Academic mobility, in this case, has the potential to result in knowledge exchange, innovation, and cross-border professional networking. In the context of UIN Maulana Malik Ibrahim Malang alumni, this theory is relevant to explain that some alumni who work or continue their studies abroad are not completely disconnected from their home institutions. They can still establish academic relationships through research collaborations, joint publications, or participation in international scientific activities. Therefore, universities need to view the alumni diaspora not as a loss, but as a strategic asset that can be used as a bridge of global science and innovation. This approach is in line with the spirit of knowledge circulation, where experience and knowledge gained abroad can flow back to strengthen the academic capacity and reputation of the institution at the international level.

Meanwhile, pull factors (positive external barriers) show that countries or institutions abroad offer modern research facilities, professional work systems, and more competitive financial rewards. High average scores in these aspects confirm that global opportunities are considered more promising for developing academic capacity, expanding international networks, and advancing professional careers. This appeal is a strong driver of alumni mobility across regions and countries (Bagdanavicius & Jodkoniene, 2008).

However, the results of this study not only describe the phenomenon of brain drain, but also provide insight into the potential dynamics of brain circulation. Alumni who move abroad have the potential to contribute back to their original institutions through knowledge transfer, research collaboration, or the international networks they build. With thus, alumni mobility does not always mean a loss of human resources, but can be a strategy for strengthening academic capacity if managed properly (Nevena Krasulja, Milica Vasiljevic Blagojevic, 2016).

Overall, these results show that the mobility of UIN Maulana Malik Ibrahim Malang alumni is a dynamic phenomenon influenced by the interaction between drivers (push factors) and barriers (pull factors). This dynamic needs to be understood not only as a challenge but also as an opportunity for Islamic universities to create an educational ecosystem that supports innovation, global collaboration, and cross-border scientific circulation. Therefore, future institutional policies should not only focus on preventing brain drain, but also on strategic efforts to optimize brain circulation through international alumni networks (Jumantoro et al., 2025).

The findings of this research are also consistent with international studies showing that pull factors often have a more significant impact than push factors in the decision-making process of educated labor mobility. Mujiburrahmad states that individuals with higher education are usually more sensitive to global opportunities that offer better career prospects, research, and professional recognition. This supports the findings of studies showing that although domestic conditions play a role as one of the driving factors, the more competitive attractiveness of foreign countries is the main reason for graduates to move abroad. (Ahmad Humam et al., 2021)

Furthermore, this brain drain phenomenon should be viewed not only as a loss of human resources, but also as an opportunity for brain circulation. From a global perspective, Yusuf's research reveals that graduates who have studied abroad have a significant ability to contribute to their home countries through knowledge transfer, research collaboration, and social innovation. This finding is in line with the results of this study, which indicate that graduates' motivation to pursue international experiences has the highest score (mean = 3.79), showing a desire to expand their global capabilities and networks (Yusuf Ikbal, 2023).

In addition, the findings of this study support the theory of diaspora engagement, whereby people who migrate for education can still actively contribute to the development of their home institutions. The participation of scientists from the diaspora not only reduces the negative effects of brain drain, but also strengthens national research capacity through international networks and collaborative projects between countries. This is relevant to the situation at UIN Malang, which can form a global alumni community to encourage knowledge exchange and joint research (Bonilla et al., 2022).

From a human capital perspective talent retention in higher education institutions is highly

dependent on high-performance human resource management practices, such as research support, financial incentives, and a professional work environment. This supports the findings of this study that alumni tend to move abroad due to a lack of research facilities and financial rewards in their home country (mean = 3.63 and 3.71). Thus, efforts to strengthen academic HR policies are an important step in stemming the brain drain in Islamic higher education (Zheng Xinhua & Anbalagan Marimuthu, 2024).

In terms of talent management and academic retention, recent research emphasizes that it is not only financial incentives that are important, but a combination of factors such as work-life balance, organizational reputation, career development, and international collaboration opportunities that impact personnel's intention to stay or move (Ahmad Saufi et al., 2023).

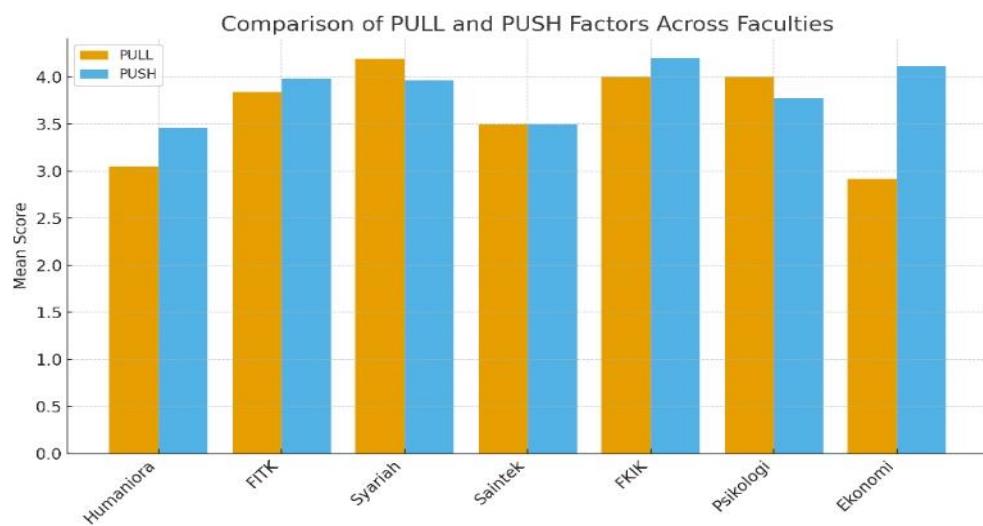


Figure 1. Comparison of PULL and PUSH Factors Across Faculties

This bar chart analyzes the comparison of the average scores of the PULL (pulling, orange) and PUSH (pushing, light blue) factors across the six faculties. Overall, the PUSH score is more dominant, looking higher than PULL in many faculties such as Humanities, FITK, FKIK, and especially in the Faculty of Economics which recorded the highest PUSH score (around 4.15). On the other hand, the PULL factor is more prominent in the Faculty of Sharia, which also recorded the highest PULL score (around 4.15), as well as in the Faculty of Psychology. Only the Faculty of Science showed an equilibrium of values between the two factors (around 3.5). These results show that in most faculties, the motivating factor is more influential as the main motivation compared to the attraction that comes from the faculty itself.

The results of the analysis of seven faculties showed significant variation in the motivation of international mobility of alumni. In general, there is a tendency that some faculties are more influenced by pull factors, while other faculties are more influenced by push factors. The faculty with the highest PULL score is Sharia (4.19), which shows a strong interest in academic and professional opportunities abroad. This indicates a great interest in global competency development, access to international research, and more competitive career opportunities. On the other hand, the faculties with the highest PUSH scores are FKIK (4.20) and Economics (4.12). These findings show that international mobility for alumni from these two faculties is more triggered by domestic pressures, such as limited facilities, stagnant career access, or an academic environment that is perceived as less supportive.

The Faculty of FITK is also in the high category for both factors (Pull: 3.84; Push: 3.98), so that FITK alumni show a strong motivation for migration from two directions: interest in the international world and dissatisfaction with domestic factors. Meanwhile, the faculty of Science (Pull: 3.50; Push: 3.50) displays the most moderate pattern. Saintek alumni do not show the

dominance of certain factors, which can indicate a relatively stable perception of career opportunities both at home and abroad. Faculty of Psychology (Pull: 4.00; Push: 3.77) is more inclined towards the pull factor, indicating a high interest in global opportunities for competency development and professionalism.

The Faculty of Humanities recorded the lowest score on the pull factor (3.05) but still moderate on the driving factor (3.46), which indicates lower international motivation overall. Overall, these findings support (Everett S. Lee, 1966) theory of migration, in which a person's decision to move is influenced by the balance between the pulling force in the destination country and the motivating force in the home country.

D. CONCLUSION

Based on the results of the research and descriptive analysis conducted, it can be concluded that the phenomenon of Drivers and Barriers of Alumni Mobility: Understanding Brain Drain and Brain Circulation Dynamics at Maulana Malik Ibrahim State Islamic University in Malang is influenced by a combination of push factors and pull factors, both of which are high. The main push factors that encourage alumni to move are limited research facilities, low financial rewards, and limited career opportunities in their field of study. On the other hand, the dominant pull factors include better financial rewards, modern research support, and a professional work environment abroad. These findings show that alumni's decision to move is not only caused by internal weaknesses but also by more promising external attractions. However, this dynamic does not solely reflect a loss of human resources (brain drain) but also opens up opportunities for brain circulation through academic collaboration, international research, and global networks built by alumni. The implications of this study emphasize the importance of institutional policies in Islamic universities, particularly UIN Malang, to strengthen career support, research facilities, and build a system of cross-border alumni engagement. Thus, alumni mobility can be a strategic means of expanding academic influence and strengthening the university's position in international scientific networks.

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