

Researching the research enthusiasts: examining their motivation and the impact of a successful role model

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SUMMARY

This study delved into the motivations driving young students in Bangladesh to embrace research activities and explored the pivotal influence of successful role models on their research aspirations. We aimed to test the hypothesis that aspiring young researchers are primarily motivated by a desire to enhance their prospects of studying abroad and the successful role models positively influences and motivates these students. Through a survey of students in Bangladeshi high schools and universities, we uncovered that a substantial number of respondents are driven by the prospect of studying abroad and perceive research experience as a valuable asset for university applications. Remarkably, the success stories of role models who leveraged research to secure admissions to prestigious foreign universities have a profound impact on these students, serving as a powerful catalyst for their own research pursuits. Furthermore, this study revealed a remarkable level of interest in research opportunities among Bangladeshi students, even among those who are relatively new to research. These findings shed light on the factors driving the emergence of a burgeoning community of research enthusiasts in Bangladesh and suggest strategies to further promote and support research activities among young students.

INTRODUCTION

The universal aspiration of pursuing knowledge and academic excellence is unavoidable and transcends borders (1). In an era where the global landscape of education is expanding and becoming increasingly competitive, the significance of research activities for students cannot be understated (2,3). By participating in research, students not only develop their critical thinking and problem-solving abilities but also get themselves ready for the demands of the modern workforce (4,5). Moreover, engaging in research activities allows students to contribute to their fields, fostering a deeper understanding and appreciation of their studies, which is essential in a competitive educational environment (6). This study explored the motivators that fuel young researchers in Bangladesh and examines the influence of successful role models on their aspirations.

We hypothesized that young students in Bangladesh aspiring to engage in research activities are primarily motivated by a desire to enhance their prospects of studying abroad and view research experience as a valuable asset

for university applications and extracurricular activities. Additionally, the success stories of role models who leveraged research to gain admission to prominent foreign universities influences and motivates these students greatly to pursue research endeavors.

Through a survey conducted among students in Bangladeshi high schools and universities, our findings revealed that a considerable number of respondents are motivated by the prospect of improving their chances of studying abroad. It was also discovered that they perceive research experience as an extracurricular asset for university application. This study found that the successful role models serve as powerful catalysts for aspiring researchers for their own research pursuits. Furthermore, this study uncovered a remarkable level of interest in research opportunities among students, even among those who are relatively new to the research landscape. These revelations shed light on the driving factors behind the burgeoning community of research enthusiasts and suggest strategies to promote and support research activities among young students.

The findings of this research not only shed light on the motivations and aspirations of young Bangladeshi researchers but also emphasize the potential of positive role models to inspire and propel students toward meaningful research endeavors. Additionally, they underscore the broader impact of research on university applications, extracurricular activities, and, ultimately, the pursuit of studying abroad, a dream cherished by many. This study uncovered a tapestry of ambitions, motivations, and inspirations that contribute to the burgeoning research landscape.

RESULTS

A total of 467 Bangladeshi students completed an online survey designed to collect data on participants' demographic characteristics, research motivations, the impact of a successful role model on their motivation to do research, and perceptions of the value of research for their future goals. Among the responders, 269 were male, 195 were female, 1 identified as other, and 2 preferred not to disclose their gender (Figure 1).

Initially, we focused on the research experience level of survey respondents, with the majority (81.15%; n=379) identifying as beginners. Around 10.06% of respondents (n=47) positioned themselves at level 2 out of 5 on the scale. Conversely, only a small percentage claimed high expertise (rating 3–5) in research (Figure 2).

Diving into the motivations behind engaging in research, our findings expose a multifaceted landscape. The primary driver, reported by 60.60% (n=283) of respondents, was the enhancement of their university application's activities section. This was closely followed by a curiosity-driven desire

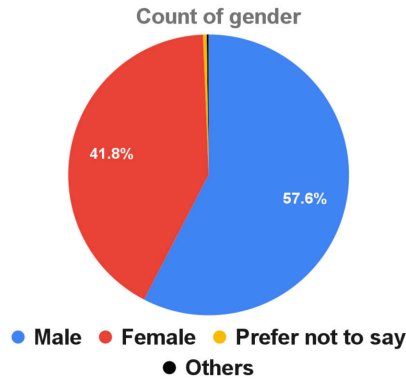


Figure 1: Gender of the respondents. Blue, red, yellow and black denote the number of male, female, those who didn't want to disclose their gender and others respectively.

to learn something new (48.80%) (n=228) and the perception that research bolsters their university application process (46.40%) (n=217). Additional motivations encompassed a passion for research (40.70%) (n=190), a thirst for honing problem-solving skills and embracing new challenges (44.10%) (n=206), and the long-term aspiration of becoming a researcher (36.20%) (n=169) (**Figure 3**).

We also explored respondents' plans for studying abroad. Strikingly, an overwhelming 89.1% (n=416) expressed a desire to pursue education overseas. In contrast, a mere 0.6% (n=3) declared a firm decision against studying abroad, while 10.3% (n=48) remained undecided (**Figure 4**).

Examining the perceived utility of research in the context of study abroad plans and university applications, the majority (67.23%) (n=314) rated research as "very helpful" (5 on the scale). Conversely, a minimal 1.49% (n=7) dismissed its utility with a rating of "not helpful" (1 on the scale) (**Figure 5**). Lastly, the study delved into the sources of inspiration for initiating research endeavors. A substantial 83.5% (n=390) of respondents acknowledged being motivated by the success stories of students with research experience gaining admission to top-tier universities (**Figure 6**).

DISCUSSION

Our investigation into the reasons behind student research motivation has yielded intriguing findings that highlight the

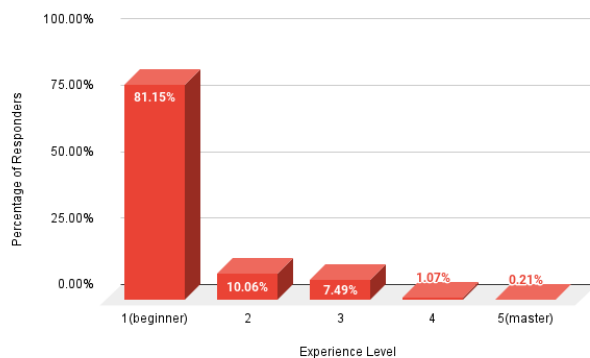


Figure 2: Experience level of the respondents in the field of research. Beginner (1) denotes new to research/no prior experience and Master (5) denotes highly experienced.

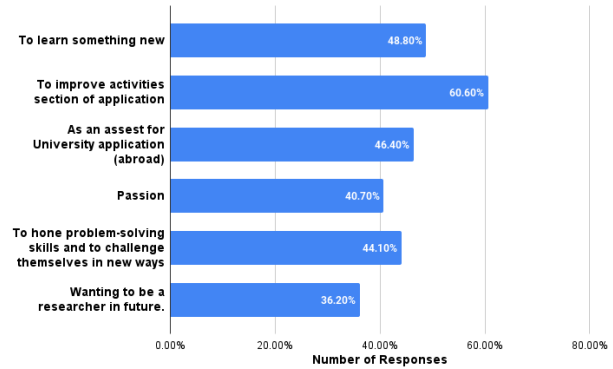


Figure 3: Respondent motivation for wanting to engage in research activities. This was a question where the respondents could choose multiple answers regarding their motivation for wanting to participate in research activities.

underlying relationship between extracurricular activities, academic goals, and the appeal of studying abroad. The results speak loudly and clearly, painting a vivid picture of the motivations underlying the desire of students for research projects.

At the forefront, our study illuminates the prevalent desire among students to leverage research experiences as a strategic catapult for embarking on international academic journeys. The majority of the respondents (89.1%) expressed a keen interest in studying abroad, with an overwhelming majority crediting research as a pivotal factor in shaping their global educational dreams. This aligns with the findings of a previous study, where the allure of enriching extracurricular activities, the desire to learn anew, and the belief in research as a stepping stone to academic success is evident (7). This nexus between research and international ambitions paints a vivid canvas, emphasizing the strategic importance students attribute to research in the broader context of their academic trajectory.

The pursuit of academic excellence and the desire to enhance university applications emerged as dominant themes and a surprising 60% of respondents indicated a compelling interest in research to improve the extracurricular activities section of the university application. This intriguing trend suggests a paradigm shift, where students view research not only as an academic pursuit but also as a dynamic tool for enriching their holistic university applications.

The influence of positive role models on students' research motivations emerged as a powerful undercurrent in our findings. The success stories of individuals who navigated the intricate path from research experiences to prestigious international admissions wield a substantial impact, with 83.5% of respondents expressing inspiration or motivation triggered by such exemplars. This highlights the importance of fostering a culture that celebrates and shares success stories, potentially serving as a motivator for a broader engagement with research opportunities in Bangladesh.

This study also illuminates a noteworthy trend—the rise of a dynamic community of research enthusiasts in Bangladesh, challenging the traditional notion that significant research contributions only come from experienced, older students. Even those in the early stages of their research journey exhibit a profound interest and engagement, signaling the

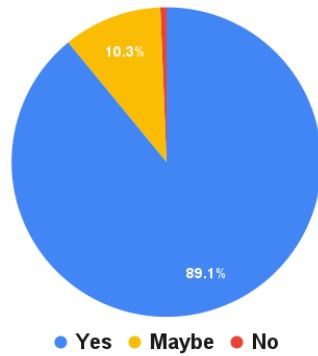


Figure 4: Whether subjects plan to study abroad or not. Blue, yellow and red denote the number of respondents who responded affirmatively, who were unsure and negatively respectively.

emergence of a vibrant research culture among Bangladeshi students. The underlying reasons for this surge in interest take center stage, offering valuable insights into strategies that can foster and sustain research activities among these bright minds.

Despite our findings, it is crucial to acknowledge the limitations inherent in our study. The diverse age range of participants, spanning from high school to graduate levels, introduces a layer of complexity that demands further exploration: a more homogeneous participant age range or separate analyses by educational level. Additionally, conducting longitudinal studies with repeated measures across different age groups can help to better understand the impacts of age and educational background on the results. Unfortunately, due to survey design, time constraints, and limited resources, a detailed breakdown analysis by grade level was not feasible in this study. Conducting a more detailed analysis based on grade levels may reveal insightful patterns, shedding light on how academic aspirations and motivations for research transform across different educational milestones, younger students might show higher curiosity-driven motivations, while older students might exhibit goal-oriented aspirations related to career or academic advancement. As grade levels increase, we might also see a shift from broad interest to more specialized research focuses. Additionally, exploring the potential impact of cultural

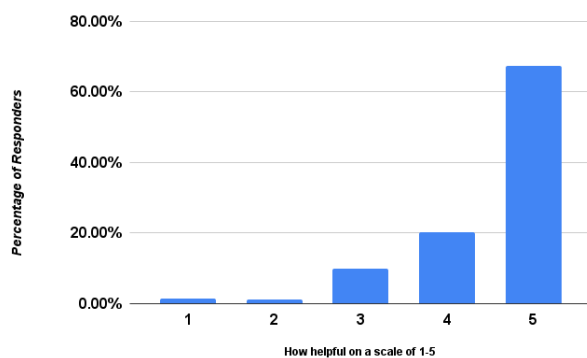


Figure 5: How helpful respondents believe research experience will be for their abroad study/University admission. Here, 1 denotes not helpful and 5 denotes highly helpful.

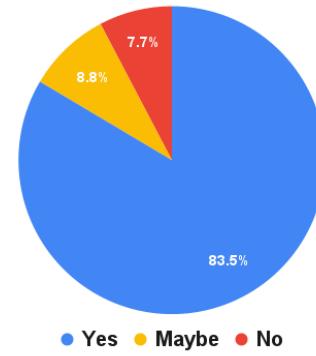


Figure 6: Whether respondents were inspired to do research by the recent success of Bangladeshi students in top universities where their research experience aided them. Red, blue, and yellow denote the number of respondents who responded negatively, affirmatively, and who were unsure respectively.

and regional factors on students' attitudes toward research could offer valuable insights with broader applicability. A longitudinal study could be beneficial to track the persistence and evolution of research motivations, providing a dynamic understanding of how students' aspirations and involvement in research activities unfold throughout their academic journeys. Giving the responders more options to choose from or giving them the chance to add their own options in some questions would be also beneficial. These methodological refinements would hopefully enhance the precision and relevance of our research, contributing to a more nuanced understanding of the intricate relationship between academic phases, cultural influences, and research motivations among students.

In conclusion, our study not only reports student research motivators but also highlights the noteworthy relationship between research, international aspirations, and the influence of role models. As we navigate the landscape of student engagement with research, these insights inspire further exploration, paving the way for a more comprehensive understanding of the factors that propel students toward academic excellence and global pursuits.

MATERIALS AND METHODS

The study involved young students in Bangladesh who were interested in research activities. Participants were recruited through multiple social media platforms (Facebook, LinkedIn), and email invitations. The inclusion criteria for the study were: (1) being a Bangladeshi student studying in either high school or university and (2) expressing an interest in research activities. In total, there were 467 respondents that met the criteria for inclusion in this study.

A Google Forms survey was designed to gather information on participants' demographic characteristics, research motivations, the impact of a successful role model on their motivation to do research, and perceptions of the value of research for accomplishing their future goals. The survey consisted of six questions in total, including three multiple-choice questions and three rating scales, ranging from one to five. The data were collected between April 3 and April 8, 2023. Prior to completing the survey, the participants were provided with information about the purpose of the study and gave their voluntary consent to participate.

Ethical concerns were also considered during this study. To ensure participant confidentiality and anonymity, participants were informed that their responses would be kept confidential and that their data would only be used for research purposes. The survey was also voluntary, with participants being informed that they could withdraw from the study at any time without any negative consequences. An online consent form was required for participating in this study. Other ethical concerns (e.g., the purpose of the study) were followed as per the Helsinki Declaration of 2013 put forth by the World Medical Association (8).

Google Sheets was used for data analysis, which included organizing responses and generating descriptive statistics and visual representations, such as graphs and charts, to illustrate key findings.

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