International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

Analysis of determining the role of male domination in mathematics

Panchwate Shamrao Gangaram
Research Scholar, Faculty of Mathematics, OPJS University

Dr. Uma Shankar Yadav
Assistant Professor, Faculty of Mathematics, OPJS University

Abstract

Since all economic processes depend on information, mathematics lies at the center of the enterprise; however, the questions of how mathematics works, how it relates to the real world, and why some equations shouldn't have simple solutions remain unanswered. There are a plethora of fantastic mental benefits that come from studying maths. The clarity, analytical ability, speed, practicality, and applicability of our mental processes are all enhanced by this. The purpose of this research is to investigate the pervasiveness of male dominance in the field of mathematics. Secondary data from a wide range of print and digital sources (books, journals, blogs, papers) informed this study. This article demonstrates how human function, necessity, and benefit affect the use of mathematics. It discusses the role that societal expectations have in the mathematical decision-making process.

Keywords:*Role of mathematics; male domination; India*

Introduction

Culture has perpetuated the belief and image that males are uniquely equipped to solve most mathematical problems. The reasoning for this is based on the notion that doing well in mathematics requires a masculine, diligent guy with a strong will to succeed. Spacecraft engineering is only one example of the many technological and technical specialties. The fact that men run the world's governments and most of the world's largest enterprises only serves to reinforce this stereotype. This gives them an advantage in the most crucial areas of mathematics, giving them sway over the application of mathematics **(Roper 2019).**

What accounts for the widespread lack of female representation in STEM fields? Hiring discrimination against women is often cited as a rationale **(Rissler, et al., 2020).** A couple earlier tests **(Goris, 2020),** a current one using fictional resumes, and a recent lab experiment all lend credence to this hypothesis and show that the phenomena persists to this day..

But there are also scholars who dispute this, and a new experiment using fake resumes reveals a gender bias in favor of women when hiring for academic positions. Women had a better chance of being hired for tenure-track posts in STEM fields, according to studies based on real hiring practices **(Grogan, 2019).** Those studies, however, do not account for the caliber of applicants, and it is often argued that the results merely reflect the fact that only the most qualified female Ph.D. candidates apply for these positions, while a greater proportion of male candidates do **(Jansson, &Tyrefors, 2020).** One of us conducted research that partially controlled for application quality and found a bias in favor of women in traditionally male-dominated sectors **(Cimpian, 2020).**

The current analysis is skewed toward a male-centric viewpoint, with 56 samples standing in for the entire population. There were no entry requirements in terms of age, major, or academic level (undergraduate, graduate). The only prerequisite was that you be a student. There were a total of 92 invitations sent out, and 67 responses received from which 56 were representative of the community being studied. There are two major benefits that set this research apart from others.

International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

Methodology

Review of the relevant literature to get insight into what is already known about achieving the study aims. After looking at the available information, we decided to utilize a quantitative approach, thus we prepared a questionnaire. There were some Indian students among the populace. All students and people who have an interest in the function of mathematics in society and daily life constitute the target population. that is, taking part in group activities. In this case, 56 samples were taken to reflect the whole population. There were no entry requirements in terms of age, major, or academic level (undergraduate, graduate). The only prerequisite was that you be a student. There were a total of 92 invitations sent out, and 67 responses received from which 56 were representative of the community being studied. The final count of participants was 92. In keeping with what was anticipated, the usable response rate was 61% (56/92). Roughly 73% of those polled responded.

Results and analysis

The analysis and discussion of the questionnaire-based data will be covered in this chapter. To help with analytical comprehension, graphics will be used. In each of the four question categories—general questions, societal issues, cultural development questions, mathematics for everyday use, and educational development—the survey's results are analyzed and commentary is provided.

Commonconcerns:

Gender-based breakdowns of the survey's results allowed for some highly insightful subgroup analyses..

Gender

From a total of 92 sent out, we received replies from 67 different people in the form of the questionnaire. Sixty-nine percent (46) were males, while 31% (21) were females. Given these generally recognized ratios, we may conclude that the gender gap had no effect on the study's overall findings..

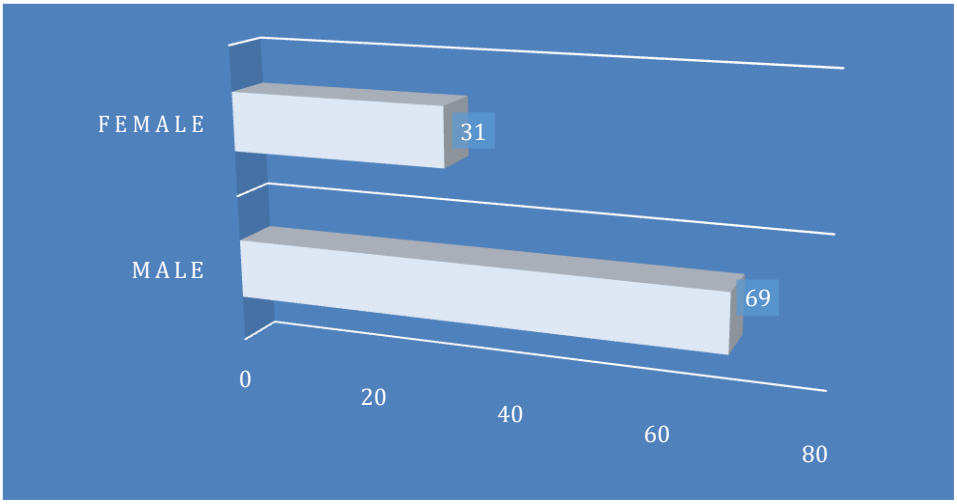

Figure 1.1: Gender Response Findings

International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

Age distribution

When asked which age group they belonged to, respondents divided themselves as follows: 58% (39 of 81) were between the ages of 21 and 24, 28% (19 of 81) were between the ages of 25 and 39, 11% (7) were in the group of 40 and over, and 3% (2) were at the age of 20 or younger..

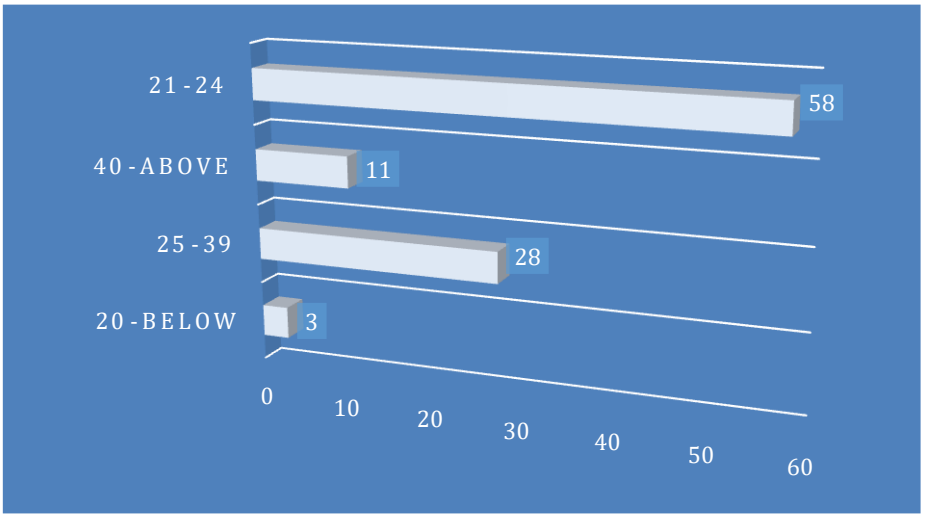

Figure 1.2: Age group findings

Educational Qualification

In the survey, respondents were asked whether they were undergraduates, graduates, or doctoral students. Sixty percent (40) of the participants were undergraduates, 37% (25) were graduates, and 3% (2) were doctoral students. The majority of responders were between the ages of 21 and 24, which is consistent with their being undergraduates.

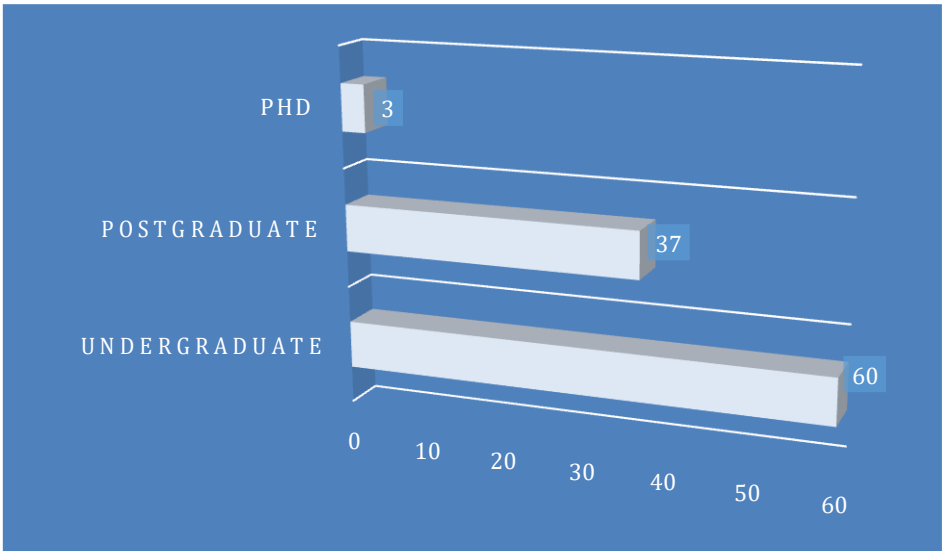

Figure 1.3: participant's educational status findings

International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

1.4 Job Status

Strategically the questionnaire had to request for Job Status and the results showed that 42% (28) were employed as maths and science teacher a, 25% (17) were maths and science students 16% (11) were non-technical employee, 11% (7) were technical employee and 6% (4) were others.

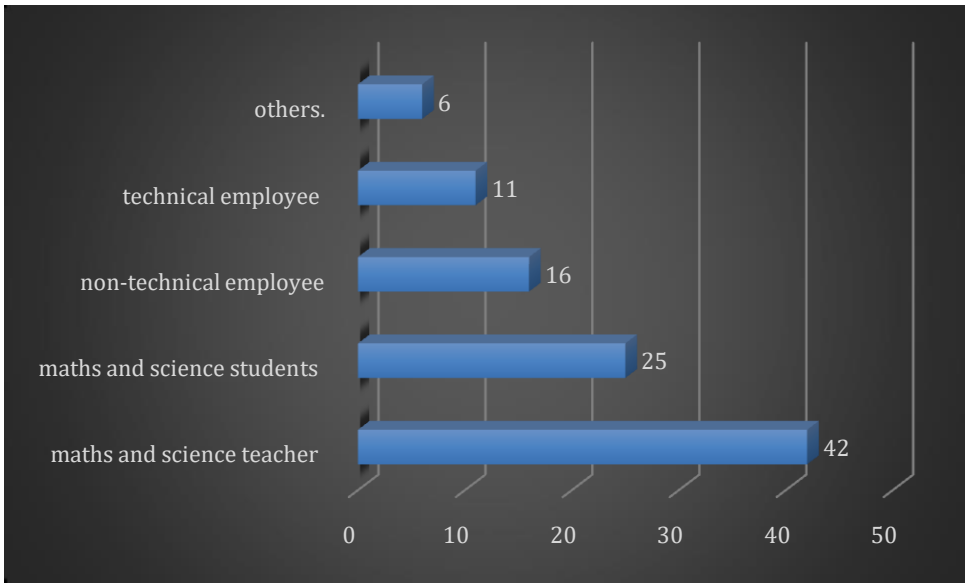

Figure 1.4: Job Status description

1.5 Location of Respondents

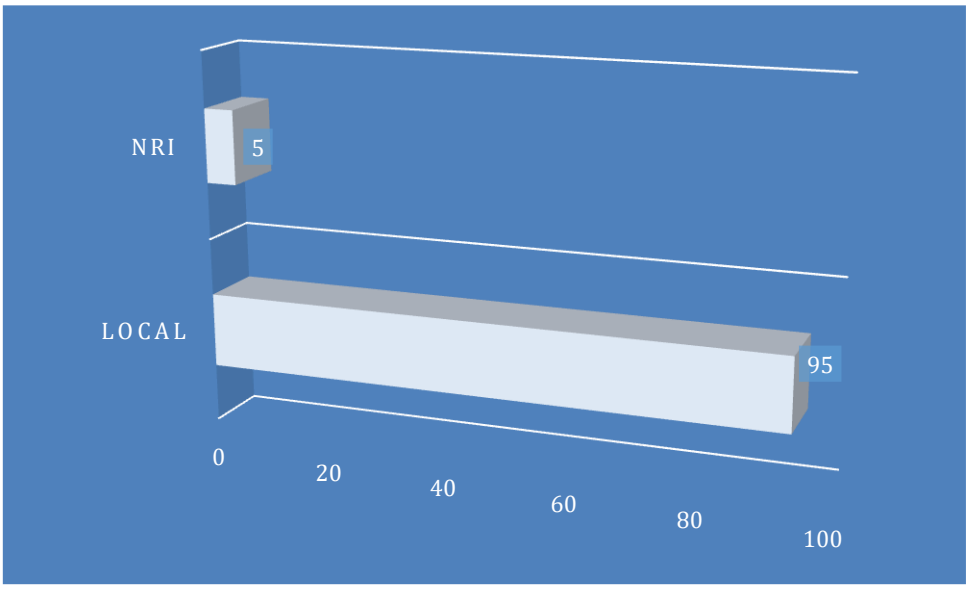

Figure 1.5: Location status description

International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

The questionnaire allowed us to learn where each participant lived, and we found that 96% (64) of them were Indian nationals and that only 5% (4) were foreign nationals living outside of India..

1. I like learning mathematics

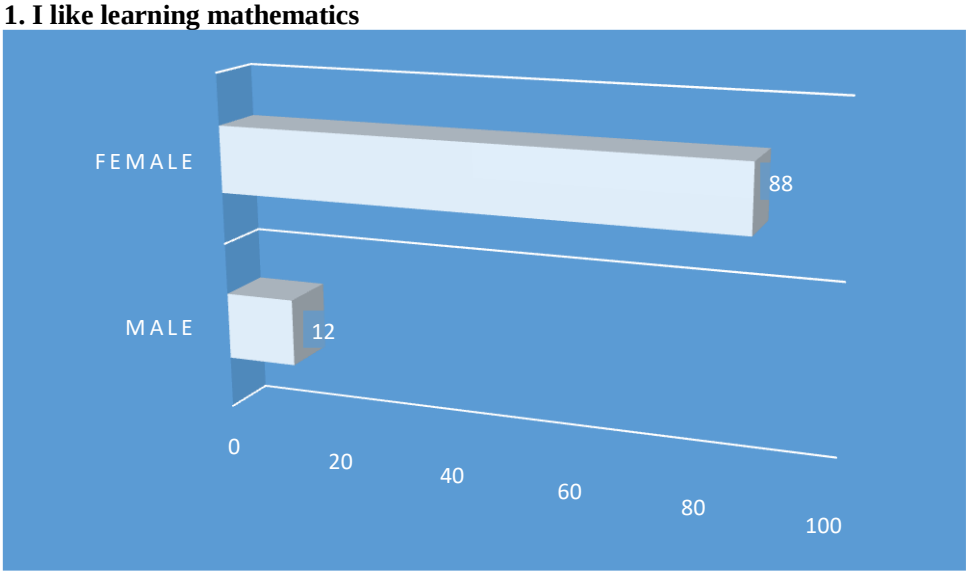

Figure 1.6 Mathematics learning interested gender ratio

These findings suggest that Male participants is in learning mathematics is higher than female participants.

I like to solve mathematics problems

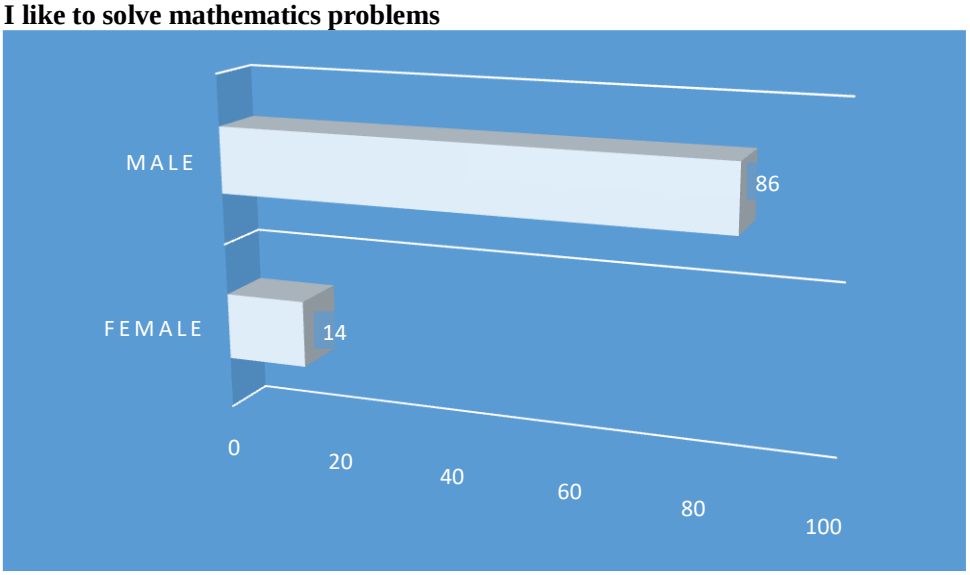

Figure 1.7 Mathematics learning solving mathematics problems
This findings suggest that Male participants is in learning mathematics is higher than female participants.
Mathematics is one of my favouritesubject

International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

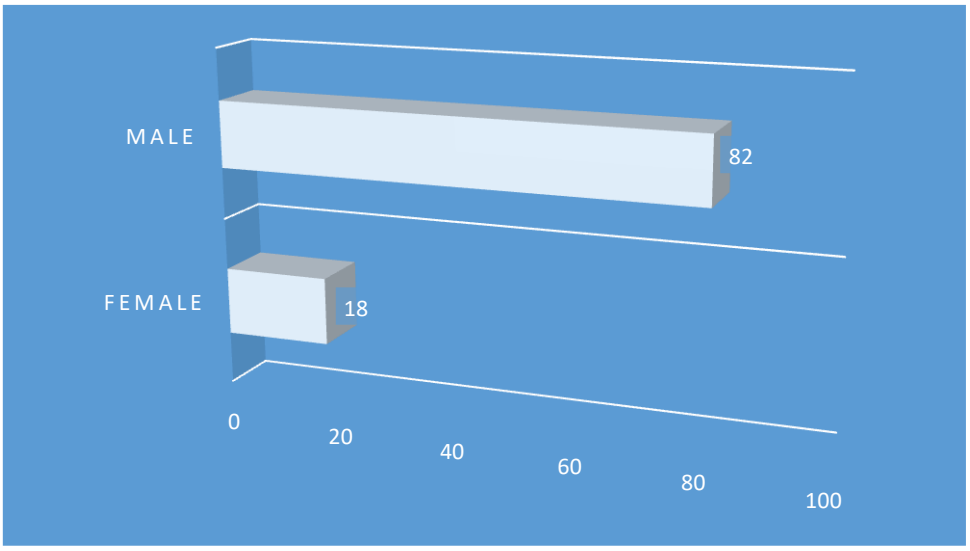

Figure 1.8 Mathematics learning solving mathematics problems

These findings suggest that Male participants is in learning mathematics is higher than female participants.

Conclusion

These results imply that boys and girls are comparable in their attitudes about mathematics, despite the fact that the degree and direction of gender differences can vary and have changed through time. We also discovered that gender parity in socio-cultural, political, and educational opportunities across countries does not always predict happiness for all individuals. Researchers discovered that even in nations with reduced gender discrepancies among adults, there were still significant variations in pupils' attitudes toward mathematics based on their gender.

The results from the first section of the survey show that more men than women filled out the survey. The evidence suggests that people between the ages of 21 and 24 are most receptive to the positive influence of mathematics in the classroom. Peer-reviewed research shows that those aged 18 to 29 actively engage with mathematics (87% of all users questioned), with those aged 30 to 49 coming in second.

The results of this study show that males, rather than girls, have traditionally held positions of leadership in mathematics-related fields (whether academic or professional). Recent research, however, has shown that women, not males, are more engaged in STEM fields and social networks. However, there is a shifting pattern of mathematical preeminence.

International Journal of Research in Engineering and Applied Sciences(IJREAS)
Available online at http://euroasiapub.org/journals.php
Vol. 12 Issue 11, November- 2022
ISSN(O): 2249-3905, ISSN(P) : 2349-6525 | Impact Factor: 8.202 |
Thomson Reuters ID: L-5236-2015

Reference

1. Roper, R. L. (2019). Does gender bias still affect women in science?. *Microbiology and Molecular Biology Reviews*, *83*(3), e00018-19.
2. Rissler, L. J., Hale, K. L., Joffe, N. R., & Caruso, N. M. (2020). Gender differences in grant submissions across science and engineering fields at the NSF. *Bioscience*, *70*(9), 814-820.
3. Goris, T. (2020). Where are they? Limited female presence in STEM professions. *The Midwest Quarterly*, *61*(3), 330-341.
4. Grogan, K. E. (2019). How the entire scientific community can confront gender bias in the workplace. *Nature Ecology & Evolution*, *3*(1), 3-6.
5. Jansson, J., &Tyrefors, B. (2020). *The Genius is a Male: Stereotypes and Same-Sex Bias in Exam Grading in Economics at Stockholm University* (No. 1362). IFN Working Paper.
6. Cimpian, J. R., Kim, T. H., & McDermott, Z. T. (2020). Understanding persistent gender gaps in STEM. *Science*, *368*(6497), 1317-1319.
7. National Research Council, Gender Differences at Critical Transitions in the Careers of Science, Engineering, and Mathematics Faculty (National Academies Press, Washington, DC, 2009)