WOMEN'S PARTICIPATION IN SCIENCE, TECHNOLOGY ENGINEERING AND MATHEMATICS (STEM) EDUCATION: A REVIEW OF LITERATURE

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A b s t r a c t

The participation of females in Science, Technology, Engineering and Mathematics (STEM) fields has diminished globally. Although their participation in higher education is increasing, they are still significantly underrepresented in STEM fields. It is important to understand the forces at play, which drive women's choice of STEM education. A variety of factors impact the choice of females to take STEM path including personal (i.e. self-concept, self-efficacy, personal preferences, self-stereotyping and intrinsic motivation) as well as the external factors (i.e. role models, family, teacher's influence as well as low recruitment of women in STEM fields). This paper systematically reviews the literature on young women's intention to undertake STEM education in Malaysian context. The paper has adopted the PRISMA protocol for Systematic Literature Review (SLR). The paper has identified 10 research papers which have attempted to identify the factors effecting female participation in STEM education in Malaysian context. Furthermore, the paper has also highlighted the factors which have been identified by these studies as well as those personal and external factors which have not been studied extensively in Malaysian context. This paper can give readers a novel insight about factors influencing women's participation in STEM education in Malaysian context.

R e s e a r c h   H i g h l i g h t s

- This research paper systematically reviews the existing literature on young women's intention to undertake STEM education in Malaysian context.

- By using the PRISMA protocol for systematic literature review, the research has identified 10 studies which have attempted to identify the factors effecting female participation in STEM education in Malaysian context.

- Several factors have been discussed in the identified studies. However, several other important factors have been overlooked in Malaysian context.

- The study emphasizes the importance of conducting more research in the domain of gender disparity in STEM education in Malaysia

G r a p h i c a l   A b s t r a c t

Methodology	Factors Studied in Existing Studies	Less Studied Factors
PRISMA methodology for systematic literature review. Identified 10 studies in Malaysian context	27 factors identified such as Governmental Policies, Interest, Family Influence, Role Models, Self-efficacy, High Salary, Health, Safety, Learning experience, Educational choice, Opportunity equality, duration in school, Work-family conflict , Technostress, Mentorship	Self-concept, self-efficacy, personal factors, stereotyping, intrinsic motivation, role model influence, family and teacher's influence, low recruitment levels

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R e s e a r c h   O b j e c t i v e s

The present research work aims to provide an overall picture of the literature on factors effecting female participation in STEM education in Malaysia. Following are the objectives of this research:

- To determine the factors which have been studied in prior literature as for their influence on female participation in STEM education in Malaysian context

- To identify factors which have not been discussed extensively in Malaysian context.

M e t h o d o l o g y

In order to conduct the systematic review, a protocol was adopted from the Preferred Reporting Items for Systematic reviews and Meta-Analysis (PRISMA) (Moher et al, & the PRISMA Group, 2010). The protocol includes determining the search string, execution of search, screening, eligibility and inclusion.

R e s u l t s

Majority of the research work on factors influencing female participation in STEM education in Malaysia began after the year 2012. The result of the study highlighted 10 studies in Malaysian context which have studied the factors effecting female participation in STEM education in Malaysia. These factors include Governmental Policies, Interest, Family Influence, Role Models, Self-efficacy, High Salary, Health, Safety, Learning experience,

Educational choice, Opportunity equality, duration in school, Work-family conflict, Technostress, Mentorship, Self-Determination, Grade Motivation, Career Motivation, Governmental Investment, Family structure and women's commitment to family, Low Recruitment at the Point of Entry, Access & Skills, Relevance, Empowerment, Combating Stereotypes.

On the other hand, the study has also shed light on the factors which are important but are relatively less studied. These include self-concept, self-efficacy, personal factors, stereotyping, intrinsic motivation, role model influence, family and teacher's influence, low recruitment.

Findings

The findings of the present research illustrated the current situation of the literature on female participation in STEM education in Malaysian context by using systematic literature review approach. It is evident from the results that the research work on this topic in Malaysian context is not sufficient and more needs to be done in this regard. Furthermore, important factors need to be studied extensively in Malaysian context, in order to generate reliable and generalizable results.

Acknowledgement

References

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