

Empowering Women through Education: Trends of Literacy Rate and Its Impact on Fertility and Mortality in Nepal

Shanta Upadhya (Adhikari)

Orcid ID: <https://orcid.org/0009-0009-2160-216X>
Mahendra Ratna Campus TU, Kathmandu
adhikarishanta010@gmail.com

Surya Prasad Adhikari

(Corresponding author)
Orcid ID: <https://orcid.org/0009-0000-2927-9429>
Central Campus, TU, Kirtipur, Kathmandu
suryapdad@gmail.com

Abstract

This study examines the relationship between female literacy and key demographic indicators, fertility and mortality over the period 1971 to 2021. The main objective of this study is to explore trends in female literacy and examine their association with national fertility and mortality patterns in Nepal. Employing a descriptive and analytical research design, this study utilizes secondary data from national population censuses, the National Demographic Health Survey (NDHS), peer-reviewed journals, academic texts, and authoritative online sources. The findings demonstrate a marked increase in female literacy rates alongside significant declines in fertility and mortality rates. The evidence of this study supports that improved education of females contributes to improved reproductive health outcomes, including delayed marriage, increased use of family planning, childbearing, and reductions in maternal mortality and child mortality. Furthermore, the study situates Nepal's progress within the regional and global context, highlighting the importance of continued investment in female education to address demographic challenges like the reduction of fertility and mortality rates. This study explores the important role of female education as a catalyst for population management and health improvements in maternal and child health in Nepal.

Keywords: Empowering women, gender equality, literacy rates, patriarchal societies, quality of life.

Background of the Study

Women's education is very important because it gives them the knowledge, skills, and confidence to take part in building a better society (Dhakal & Rana, 2023). We, as a nation, dream of becoming a superpower, to achieve this, every part of our society must help in building the nation. Women make up a large part of our society, and if they are not educated, we cannot expect to reach our goal. So, it is very important to understand why women's education matters. It plays a key role in empowering women and helping the country move forward (Sundaram et al., 2014). When women go to school and learn, they can make better choices in their lives, find good jobs, and take care of their families and communities. This not only helps women live better lives but also helps the whole society grow and improve.

Empowering women is a key priority of the nation, showing progress in their participation in health, education, training, jobs, and social life. Education is the base tool of this change, giving women the knowledge, skills, and confidence to take part in all areas of life (Varghese, 2011). The empowerment of women is an important factor in achieving gender equality and societal development. Women's empowerment refers to increasing and improving the social, economic, political, and legal strength of women, to ensure equal rights for women (Nasima & Shalini, 2019). So, empowering women enables them to reach their full potential, take part actively in political and social decision-making, believe in themselves, and contribute meaningfully to their families, communities, and the nation as a whole (Kala & Govindaraju, 2024).

Women have the full right to get a good education. When women are educated, they can live better lives, support their families, earn money, and help their communities grow. Education gives them the confidence and skills to bring positive change in society (Ullah et al., 2025). Educating women is a powerful way to improve their position in society and bring about positive change. It helps women gain knowledge and skills that allow them to make decisions in their families, schools, and communities. Education plays a key role in giving women the knowledge, skills, and confidence they need to take part in the growth and progress of society (Dhakal & Rana, 2023).

Education plays a crucial role in reducing social and economic inequality by empowering women with the knowledge, skills, and confidence necessary to improve their status. It enables them to gain respect, make informed decisions, and take on leadership roles within their families and communities, thereby fostering greater gender equality and social progress (Kala & Govindaraju, 2024). While the constitution of Nepal gives equal rights to education for men and women but society often denies women basic rights. Education is essential for women as it provides them with the knowledge, skills, and confidence needed to actively contribute to society's development. When women are

educated, they can make informed decisions, pursue better opportunities, and support their families and communities. This not only improves their own lives but also helps in the overall progress of society (Dhakal & Rana, 2023). Women's education is essential for the progress of society. As Pt. Jawaharlal Nehru wisely said, "Educating a man helps one person, but educating a woman helps the whole family." This highlights the powerful ripple effect of educating women; not only does it transform their own lives, but it also uplifts their families and entire communities (Jaysawal & Saha, 2023).

In the case of Nigeria, the scholars like Ibhate et al. (2025) reveal that there is a notable decline in fertility rates, which was 5.2 children per woman in 2000 AD and gradually declined to 3.4 children per woman in 2024 AD. This shift of the TFR is closely linked to socio-economic changes, increased urbanization, and improved female literacy, particularly in Edo State of Nigeria. Nepal is also seeing a strong decline in TFR, along with improvements in the education of females. The Infant Mortality Rate (IMR) and Child Mortality Rate have also gradually declined. (Adhikari, 2023). Information on infant and child mortality reflects a country's development and quality of life. Female education is crucial in this context, as educated mothers are more likely to make informed health decisions, access medical care, and ensure proper nutrition for their children. This greatly reduces child mortality rates, showing that investing in female education improves both family well-being and national development (Ministry of Health and Population, 2023).

Higher levels of female education are strongly associated with lower fertility rates, as well as reductions in infant mortality rate (IMR), child mortality rate (CMR), and under-five mortality. Educated women are more likely to adopt healthier reproductive behaviors, access healthcare services, and make informed decisions that contribute to better outcomes for themselves and their children (Snopkowski et al., 2016; Zang et al., 2022).

The total literacy rate of Nepal has shown an increasing trend over the period, reaching 76.2 percent in the 2021 census. The male literacy rate increased from 34 percent in 1981 to 55.1 percent in 1991, 65.1 percent in 2001, 75.1 percent in 2011, and further to 83.6 percent in 2021. Similarly, the female literacy rate has demonstrated significant progress, increasing from 12 percent in 1981 to 25 percent in 1991, 42.8 percent in 2001, 57.4 percent in 2011, and reaching 69.4 percent in 2021. This kind of increase in female literacy highlights the growing effectiveness of national policies and international support aimed at promoting girls' education and closing the gender gap in literacy (Central Bureau of Statistics, 2021).

There is a well-established inverse relationship between female literacy and fertility and mortality rates. Women with higher education levels tend to marry later, use contraceptives more effectively, and have fewer children. In Nepal, the total fertility rate (TFR) declined from 6.3 in 1981 to 2.1 in 2021, reaching the replacement level fertility

(Central Bureau of Statistics, 2021). This decline is closely linked with improved female literacy, increased educational attainment, and greater access to reproductive health services. Education, particularly among women, has contributed to a significant decline in both maternal and child mortality rates in Nepal. Educated mothers are more likely to seek antenatal care, institutional delivery, and postnatal services, which directly reduce maternal mortality (UNICEF, 2021). According to the Nepal Demographic and Health Survey (Nepal Ministry of Health and Population, 2023), In Nepal, the maternal mortality ratio (MMR) is 151 per lakh live births, with 66 percent of deaths occurring postpartum, 33 percent during pregnancy, and 6 percent during delivery. Nepal aims to reduce the MMR to 70 per lakh live births by 2030 under the Sustainable Development Goals (SDGs), requiring accelerated improvements in maternal health services. The current neonatal mortality rate (NMR) is 21 per thousand live births. To meet the SDG target of 12 per thousand by 2030, an annual reduction rate of 4.8 percent is needed higher than the 4.0 percent observed from 2000 to 2018 (Pandey et al., 2025)

Literacy rates vary significantly across Nepal's geographical regions. The Hill region consistently reports the highest literacy rates, while the Mountain and Terai regions lag. For instance, in 2021, female literacy in the Hill region was 74.3 percent, compared to 64.8 percent in the Mountain region and 66.1 percent in the Terai region (Central Bureau of Statistics, 2021). These disparities reflect differences in access to education, infrastructure, and socio-cultural factors. The main objective of this study is to explore trends in female literacy and examine their association with national fertility and mortality patterns in Nepal.

Methods and Materials

This article is based on descriptive and analytical methods applied to secondary sources of data. This data and information were collected through a comprehensive review of academic books, census reports from the Central Bureau of Statistics (CBS), Nepal Demographic Health Surveys (NDHS), World population data sheets, scholarly articles, theses, and research reports. These are related to women's empowerment through education, with particular emphasis on trends in female literacy and their impact on fertility and mortality in Nepal.

Discussions and Results

The improving female literacy rate in Nepal has played a central role in the decline of fertility and mortality rates over recent decades. Increased education among women improves their knowledge of reproductive health and family planning, leading to delayed marriage, fewer births of children, and improved maternal and child health outcomes. Currently, Nepal's female literacy rate stands at 69.4 percent, which corresponds with a

Total Fertility Rate (TFR) of approximately 2.1 children per woman. Alongside this decline in fertility, there have been reductions in maternal mortality, infant mortality, and under-five mortality rates. Educated women are more likely to access healthcare services and adopt healthier practices, contributing to these positive trends. Although Nepal's female literacy rate remains lower than males and some neighboring countries. So, it is necessary to increase and continue investment in girls' education for the development and welfare of the Nation.

Table 1

Trends in Literacy Rate in Percent by Gender in Nepal (1971AD–2021AD)

Trends in Literacy Rate in Percent by Gender in Nepal						
Gender	1971	1981	1991	2001	2011	2021
Male	23.6	34	54.5	65.5	75.1	83.6
Female	3.9	12	25	42.8	57.4	69.4
Total	13.9	23.3	39.6	54.1	65.9	76.2

Sources. CBS 2014 and CBS 2021

Table 1 explored that still there has been some progress, the literacy rate for women in Nepal is still much lower than that of men. In 1971, only 3.9 percent of women were literate, compared to 23.6 percent of men (Central Bureau of Statistics, 2021). Female literacy had increased to 69.4 percent, but the gap with male literacy, which reached 83.6 percent, remains significant. This gap shows that many barriers, like cultural norms, poverty, and lack of access to education, still prevent women from receiving the education they deserve. Educating women is crucial for the development of society, as it leads to healthier families, better economic conditions, and stronger communities. Therefore, it is essential to focus on overcoming these obstacles and ensuring that women have equal access to education.

Table 2

Literacy Rates by Gender and Geographical Region in Nepal (2001AD–2021AD).

Census Region	2001			2001			2021		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Mountain	56.9	30.4	43.5	71.7	50.1	60.5	81.1	64.8	72.8
Hill	70.6	47.3	58.6	81.5	64.2	72.4	87.9	74.3	80.9
Terai	62.1	40.1	51.3	70.4	52.4	61.2	80.5	66.1	73.1
Total	65.5	42.8	54.1	75.1	57.4	65.9	83.6	69.4	76.2

Sources. CBS 2014 and CBS 2023

Table 2 presents the trends of literacy rates of males, females, and the total literacy rate across three geographical regions of Nepal: Mountain, Hill, and Terai over three census years: 2001, 2011, and (Central Bureau of Statistics, 2021). Across all years and regions, male literacy rates are consistently higher than female literacy rates. However, the gender gap has gradually narrowed over time.

In the Mountain region, the total literacy rate has increased significantly from 43.5 percent in the 2001 census and 72.8 percent in (Central Bureau of Statistics, 2021), with female literacy improving from 30.4 percent to 64.8 percent.

Similarly, hilly regions consistently show the highest literacy rates, reaching 80.9 percent in (Central Bureau of Statistics, 2021). The Terai region also shows steady progress, with total literacy increasing from 51.3 percent in 2001 to 73.1 percent in 2021. Nationally, literacy improved from 54.1 percent in 2001 to 76.2 percent in (Central Bureau of Statistics, 2021), reflecting significant gains in educational access and gender parity across Nepal.

Table 3
Literacy Rate of Nepal of Rural and Urban Areas

Area	Literacy Rate (percent)		
	Total	Male	Female
Urban	78.5	85.4	71.9
Rural	71.9	79.8	64.4
Nepal	76.2	79.8	69.4

Sources. CBS 2023

Table 3 presents literacy rates in Nepal, disaggregated by geographical location (municipality and rural municipality) and gender. Overall, literacy rates are higher in urban areas (municipalities), where the total literacy rate stands at 78.5 percent, with male literacy at 85.4 percent and female literacy at 71.9 percent. In contrast, rural municipalities exhibit lower literacy rates, with a total of 71.9 percent, male literacy at 79.8 percent, and female literacy at only 64.4 percent. At the national level, the overall literacy rate is 76.2 percent, with males at 79.8 percent and females at 69.4 percent. These figures reveal a consistent gender disparity in literacy, with males outperforming females across all geographic locations. Moreover, the gender gap is more pronounced in rural areas 15.4 % compared to urban areas 13.5 %.

Table 4*Impact of Mother's Educational Qualification on Fertility Rate (TFR) in Nepal, 2022*

Literacy Rate (Percent)	TFR (Per thousand population)				
	2001AD	2006 AD	2011AD	2016 AD	2022
Illiterate	4.8	3.9	3.7	3.3	3.3
Primary education	3.2	2.8	2.7	2.7	2.3
Secondary education	2.3	2.3	2.1	2.1	1.8
SLC or above	2.1	1.8	1.7	1.9	1.6

Sources. NDHS 2022

Table 4 emphasizes the educational qualification of mothers and its impact on the Total Fertility Rate (TFR) per thousand population. The data reveals a strong inverse relationship between the literacy level of mothers and their fertility rates, highlighting the critical role of education in shaping reproductive behavior. In 200 AD, illiterate women had the highest TFR at 4.8 children per woman. This situation gradually declined over time, reaching 3.3 per women in 2022 AD. The primary education of mothers seems to decrease TFR, which was 3.2 per woman in 2001 AD, and dropped to 2.3 per woman by 2022 AD. Similarly, mothers with secondary education (up to grade 10) exhibited a decline from 2.3 in 2001 to 1.8 in 2022.

Women with SLC and above, their TFR declined from 2.1 in 2001 to 1.6 in 2022 AD. This consistent trend indicates that higher levels of maternal education are associated with delayed marriage and childbearing, and use of contraception methods, and overall lower fertility.

Overall, the data highlights that improvements in female education are directly linked to reductions in fertility rates, suggesting that educational empowerment is a key strategy for addressing population management and improving maternal and child health in Nepal.

Table 5*Relationship of Mothers Educational Status with Infant, Child, and Under-Five Mortality Rates in Nepal (2011 AD–2022 AD)*

Educational Status of Mother	Infant Mortality Rate		Child Mortality Rate		Under Five Mortality Rate	
	2011	2022	2011	2022	2011	2022
Illiterate	62.2	41	12	10	73	50
Primary Education	53	44	9	6	62	49
Secondary Education	37	25	4	4	41	39
SLC and above	31	13	1	3	32	16

Source. NDHS 2011 and NDHS 2022.

Table 6 presents the relationship between mothers' educational status and mortality rates of infant mortality rate (IMR), child mortality rate (CMR), and under-five mortality Rate (U5MR) in Nepal of the NDHS survey of 2011 AD and 2022 AD. The data clearly shows that higher maternal education is associated with lower child mortality rates.

In the survey of NDHS 2011 Ad, illiterate mothers had the highest IMR at 62.2 per thousand and U5MR at 73 per thousand, which decreased to 41 per thousand and 50 per thousand, respectively, by the survey of 2022 AD. Meanwhile, mothers with SLC and above had significantly lower mortality rates, with an IMR of 31.0 and U5MR of 32 in 2011, dropping to just 13 per thousand and 16 per thousand, respectively, by the NDHS survey of 2022 AD. Similarly, child mortality among mothers with higher education remained very low across both years.

This trend highlights the crucial role of maternal education in improving child health and survival. Educated mothers are more likely to access healthcare services, adopt proper child-rearing practices, and understand nutrition and hygiene factors that significantly reduce the risk of child mortality. The data emphasizes the importance of investing in female education to enhance public health outcomes.

In educational and demographic research, literacy rates are essential for assessing the effectiveness of a country's educational system, the distribution of educational opportunities, and the broader implications for socio-economic development. A higher literacy rate is generally associated with improved health outcomes, lower fertility and mortality rates, enhanced civic participation, and greater economic productivity (UNESCO Institute for Statistics, 2019).

In Nepal, the female literacy rate has shown significant progress over the years, currently reaching 69 percent. However, it remains lower than that of some neighboring South Asian countries and significantly behind more developed nations (Population Reference Bureau, 2022). Education is closely linked to key health indicators such as fertility, maternal health, and child survival. There is a strong inverse relationship between women's educational attainment and fertility rates, with educated women consistently bearing fewer children than their uneducated counterparts. This trend is evident across both developed and developing countries, though its magnitude varies depending on the socio-economic and cultural context (Jungho, 2023).

Among South Asian countries, Sri Lanka and the Maldives report the highest female literacy rates, at 92 percent and 99 percent, respectively. In contrast, Pakistan and Afghanistan have much lower rates, at 47 percent and 28 percent, respectively (Population Reference Bureau, 2022). These gaps in literacy reflect broader differences in reproductive health. For example, Sri Lanka, with high female literacy, has a Total Fertility Rate (TFR)

of 2.2 per women in Nepal, despite a similar TFR of 2.1, reports a higher MMR of 186 per lakh live births (Population Reference Bureau, 2022).

Female education also influences infant and child mortality. Nepal's Infant Mortality Rate (IMR) is 23 per thousand live births, Child Mortality Rate (CMR) is 8, and Under-5 Mortality Rate is 28. In contrast, Sri Lanka's IMR is 6, CMR is 1 per thousand, and under-5 mortality is 7 per thousand. The Maldives reports an IMR of 7 per thousand, CMR of 1, and under-5 mortality of 8. Meanwhile, countries with lower female literacy, like Afghanistan and Pakistan, have significantly higher mortality: Afghanistan's IMR is 46 and under-5 mortality is 60, while Pakistan's IMR is 55 and under-5 mortality is 67 per thousand (Population Reference Bureau, 2022).

In more developed countries, female literacy rates are nearly universal at 99 percent. Countries like Germany, Japan, and Sweden illustrate how education relates to improved health outcomes. Japan has a TFR of 1.3 and MMR of 5, Germany has a TFR of 1.6 per thousand and MMR of 7 per lakh, while Sweden shows a TFR of 1.7 per thousand and MMR of 4 per lakh (PRB, 2022). IMR in these countries is also low: Japan reports 2 per thousand, Germany 3 per thousand, and Sweden 3 per thousand live births. Their under-5 mortality rates are 23 per thousand and 3 per thousand, respectively (Population Reference Bureau, 2022).

Nepal's adolescent birth rate is 62 births per thousand girls aged 15–19, much higher than Japan's 7 per thousand and Germany's 4 per thousand. Adolescent pregnancy is often linked to lower levels of education and higher health risks for both mother and child (Population Reference Bureau, 2022).

In terms of population growth, Nepal has a growth rate of 0.92 percent per year, in contrast to Japan (−0.3%) and Germany (−0.2%), which are experiencing population decline (Population Reference Bureau, 2022). This growing young population in Nepal can be an asset if adequate investments are made in girls' education and women's empowerment.

The above discussion revealed that female literacy is a fundamental determinant in reducing fertility and mortality rates, as evidenced by trends in Nepal and comparative countries. In Nepal, the female literacy rate has increased to 69.4 percent, contributing to a decline in fertility with a Total Fertility Rate (TFR) of 2.1 children per woman. However, Nepal's maternal mortality ratio (MMR) remains relatively high at 151 per lakh live births compared to neighboring Sri Lanka (TFR 2.2; MMR much lower) and the Maldives, where female literacy exceeds 90 percent and mortality rates are significantly lower (Population Reference Bureau, 2022). This demonstrates that while increased literacy improves reproductive health outcomes, gaps remain that need to be addressed through broader health interventions alongside education.

Similarly, infant and under-five mortality rates in Nepal (IMR 25, under-5 mortality 29 per 1,000 live births) are higher than those in countries with higher female literacy, such as Sri Lanka and the Maldives, which report IMRs below 10 and under-five mortality rates under 10 per 1,000 (Population Reference Bureau, 2022). In contrast, countries like Pakistan and Afghanistan, with much lower female literacy rates (47% and 28% respectively), experience substantially higher fertility and mortality rates, underscoring the strong inverse relationship between women's education and reproductive health outcomes.

In developed countries such as Japan, Germany, and Sweden, near-universal female literacy (around 99%) aligns with very low fertility rates (TFR between 1.3 and 1.7) and minimal maternal and child mortality, illustrating how advanced education contributes to improved health and longevity (Population Reference Bureau, 2022). Nepal's higher adolescent birth rate (62 per 1,000 girls aged 15–19) compared to developed nations further highlights the role of education in delaying childbirth and reducing health risks.

In a developing country like Nigeria, scholars like Ibhaté et al. (2025) claim that the fertility rate declined from 5.2 children per woman in 2000 AD to 3.4 per woman in 2024 AD, reflecting increased access to family planning services, higher educational attainment among women, and changing economic realities, especially in places like Edo State.

Overall, the evidence underscores that continued investment in female literacy in Nepal is essential to further reduce fertility and mortality rates. Achieving parity with higher-literacy countries could significantly improve maternal and child health outcomes, contributing to sustainable socio-economic development.

Conclusion

This study underscores the transformative power of education in empowering women and advancing public health and demographic outcomes in Nepal. Education helps not only as a fundamental human right but also as a catalyst for broader social change. As women gain access to education, they acquire the knowledge, skills, and confidence needed to make informed decisions about their reproductive health, family well-being, and participation in socio-economic development. The findings affirm that female educational attainment is closely linked with reductions in fertility and mortality, contributing to improved maternal and child health and sustainable population growth.

Furthermore, the expansion of educational opportunities for women is essential for fostering gender equity and reducing entrenched social inequalities. An empowered female population is more likely to challenge patriarchal norms, participate actively in the public

sphere, and contribute meaningfully to national development. While progress has been made, persistent regional and gender disparities in literacy highlight the need for continued investment in inclusive and equitable education systems. Ultimately, empowering women through education is not only a strategic approach to managing population dynamics but also a critical pathway toward building a just, healthy, and sustainable society.

References

- Adhikari, S. U. (2023). The demographic situation of ageing population in Nepal. *Shanti Journal*, 3(1-2), 79-92. <https://doi.org/10.3126/shantij.v3i1-2.60816>
- Central Bureau of Statistics. (2021). *National Population and Housing Census 2021*: Nepal: Government of Nepal.
- Dhakal, A., & Rana, A. (2023). *The empowerment of nepalese women through employment* Centria University of Applied Sciences]Global.
- Ibhate, G. O., Opoggen, E., & Bondoi, M. B. (2025). Effects of shifting family structures and declining fertility rates on population growth and composition in uromi, edo state nigeria. 2(1). <https://doi.org/10.5281/zenodo.14910700>
- Jaysawal, N., & Saha, S. (2023). Role of education in women empowerment. *International journal of applied research* 9(4), 8_13. <https://doi.org/10.22271/allresearch.2023.v9.i4a.10710>
- Jungho, K. (2023). Female education and its impact on fertility. 2. <https://doi.org/10.15185/izawol.228.v2>
- Kala, S., & Govindaraju, N. K. (2024). Women empowerment through education. *International Journal of Creative Research Thoughts (IJCRT)*, 12(4). <https://ijcrt.org/papers/IJCRT2404008.pdf>
- Ministry of Health and Population. (2023). *Nepal demographic and health survey 2022*. Ministry of Health and Population. <https://dhsprogram.com/pubs/pdf/FR379/FR379.pdf>
- Nasima, A., & Shalini, P. (2019). Empowering women through education. *International journal of research in engineering, IT and social sciences*, 9. https://www.indusedu.org/pdfs/IJREISS/IJREISS_2787_57732.pdf?utm_source=chatgpt.com
- Nepal Ministry of Health and Population. (2023). *Nepal Demographic and Health Survey 2022*. Ministry of Health and Population. https://dhsprogram.com/pubs/pdf/FR379/FR379.pdf?utm_source=chatgpt.com
- Pandey, A. R., Adhikari, B., Sangroula, R. K., Sapkota, P. M., Regmi, S., Sharma, S., Dulal, B., Lamichhane, B., KC, S. P., Dhakal, P., & Baral, S. C. (2025). Continuum of care

- for maternal and newborn health services in Nepal: An analysis from demographic and health survey 2022. 20(3). <https://doi.org/10.1371/journal.pone.0319033>
- Population Reference Bureau. (2022). *World Population Data Sheet*. <https://www.prb.org/resources/2022-world-population-data-sheet/>
- Snopkowski, K., Towner, M. C., Shenk, M. K., & Colleran, H. (2016). Pathways from education to fertility decline: a multi-site comparative study.
- Sundaram, M. S., Sekar, M., & Subburaj, A. (2014). Women empowerment: Role of education. 2(12). <https://doi.org/https://www.indianjournals.com/ijor.aspx?target=ijor:ijmss&volume=2&issue=12&article=008&type=pdf>
- Ullah, S., Gul, A., Shah, S. M., Uzair, M., Khan, K., Ismail, M., & Amjad, M. J. (2025). Impact of Female Education on the Economic Growth: A Case Study of Pakistan. *Journal of Asian Development Studies*, 14(1). <https://doi.org/10.62345/jads.2025.14.1.16>
- Varghese, T. (2011). Women empowerment in oman: A study based on women empowerment index. *Far east journal of psychology and business*, 2(2). https://www.researchgate.net/publication/50829269_Women_Empowerment_in_Oman_A_study_based_on_Women_Empowerment_Index
- Zang, E., Sariego, C., & Krishnan, A. (2022). The interplay of race/ethnicity and education in fertility patterns. 76(3). <https://doi.org/10.1080/00324728.2022.2130965>