



A gender-equitable school index for secondary schools in Nepal and beyond

Authors: Irina Bergenfeld, Emma Jackson, Kathryn M. Yount¹

Overview

Expanding girls' access to education in low- and middle-income countries (LMICs) has been a critical component of the Sustainable Development Goals (SDGs) (UN General Assembly, 2015). While it cannot be assumed that schooling provides a 'silver bullet' for addressing development challenges, quality secondary education can play a vital role in delivering positive change. By equipping girls with relevant skills and knowledge for the future, and promoting their agency and voice, it can enable girls to realise their rights and achieve equality. Yet despite substantial progress toward achieving gender parity at primary school level, secondary schooling for girls still lags behind that of boys in many countries (UNICEF, 2017).

In Nepal, a complex set of interrelated social and structural barriers contribute to girls' greater dropout, especially when they reach secondary school. These barriers include restrictions on girls' movement during menstruation and lack of access to menstrual supplies due to taboos. These barriers not only prevent girls from attending school consistently, but also result in lower performance in exams compared to boys (Stash and Hannum, 2001; Oster and Thornton, 2009). Son preference is also widespread, which means that families are less likely to invest in their daughters' education – particularly in poorer communities that rely on agricultural production, with which girls can help. Early marriage and pregnancy are also correlated with girls' school dropout rates. Girls do not tend to marry while still studying, but because many families encourage early marriage, even in childhood, girls may come under pressure to leave school to do so (Choe et al., 2005; Raj et al., 2014; Delprato et al., 2015).

¹ Suggested citation: Bergenfeld, I., Jackson, E. and Yount, K.M. (2019) *A gender-equitable school index for secondary schools in Nepal and beyond*. Policy note. London: Gender and Adolescence: Global Evidence.

These issues present a number of challenges for development interventions concerned with promoting adolescent girls' retention and performance in school. Drawing on data from research in Nepal, this policy note explores how a gender-equitable school index for secondary schools could inform a multifaceted approach to developing the policies, programmes and infrastructure necessary for adolescent girls to stay in school – and reap the benefits it can provide, for themselves and their families.

Developing a gender-equitable school index for secondary level

UNICEF's Child-Friendly Schools Manual emphasises the need for gender-sensitive pedagogy that dismantles discrimination and allows girls equal participation in the learning process; the need to take action to prevent sexual violence; and the need to foster positive relationships between students and teachers (Wright et al., 2006). Schools that do this effectively can create better learning environments (Meyer-Adams and Conner, 2008; Wang et

al., 2014; Schacter and Juvonen, 2018). However, to close the gender gap in secondary school, there is a need to improve understanding of the factors that contribute to a gender-equitable school environment. This research sought to capture what it is that makes schools 'gender-equitable' and which factors were most effective in promoting girls' schooling attainment.

The research involved data collection from July to September 2018 in 159 secondary schools in Nuwakot and Tanahun districts² of Nepal. Interviews with school administrators explored school characteristics such as numbers of students, infrastructure, staffing, disability policies and dropout rates. We created a measure of gender equity, the Gender-Equitable School (GES) Index, based on relevant survey questions (Table 1 shows all of the input variables considered and retained in the GES Index). The data was then analysed to see if there was any association between how well schools scored in the GES Index and the percentage of girls passing their grade 8 examinations.

Table 1: Input variables considered for the Gender-Equitable School (GES) Index, 159 secondary schools in Tanahun and Nuwakot districts

Variable	Mean	SD	Min	Max
<i>Retained</i>				
Room available for students to change menstrual pads: proportion	0.42	0.50	0	1
Presence of clubs for girls only: proportion	0.06	0.24	0	1
Extra hours of sexual and reproductive health instruction	5.60	8.00	0	40.00
Girls can travel safely to school: proportion	0.89	0.32	0	1
Policies to retain married, pregnant, and postpartum girls: proportion	0.06	0.23	0	1
Proportion of female toilets	0.46	0.13	0	0.67
Proportion of girls enrolled	0.51	0.08	0.04	0.71
Retention rate for girls: proportion	0.98	0.03	0.86	1
Proportion of female teachers	0.51	0.17	0.11	0.86
<i>Dropped</i>				
Policy allowing married girls to stay in school: proportion	0.98	0.14	0	1
Policy allowing pregnant girls to stay in school: proportion	0.97	0.18	0	1
Policy allowing postpartum girls to return to school: proportion	0.97	0.18	0	1
Actions taken to enroll all eligible girls: proportion	0.92	0.27	0	1

² Three schools in Tanahun-adjacent areas of Lamjung and Gorkha districts were grouped with Tanahun schools.

Key findings: linking gender equity, the school environment and girls' attainment

The first component of the GES Index was a generalised measure of gender equity (Table 1). Although the overwhelming majority of schools reported having policies that allowed married, pregnant and postpartum girls to stay in school, only a small minority had policies aimed at actively keeping these girls in school. Most schools reported taking action to enroll all eligible girls, and overall retention rates for girls were high. The variables contributing most to this component were girls-only clubs, hours of instruction on sexual and reproductive health (SRH), retention policies, and the proportion of female students.

The second component considered the impact on girls' attainment of: the proportion of female toilets; whether girls could travel safely to school; the availability of a private room to change menstrual pads; and retention rates for female students. A large majority of school administrators reported that girls could travel safely to school. While the average proportion of female students matched the proportion of female teachers, at just above half, the average proportion of toilets designated for female students lagged slightly behind. Less than half of schools had a room for students to change menstrual pads, and few had girls-only clubs, or gave information on SRH beyond the required curriculum. However, most schools did have mixed-gender clubs. The third component of the GES Index looked at the effects on girls' attainment of other features of the school environment, such as the proportion of female teachers and extra hours of SRH education.

Separate from the GES Index, a School Economic Condition (SEC) Index also was created, which looked at factors, such as toilet-to-student ratios, whether schools had water, and the conditions of the buildings (Table 2). While there is little conclusive evidence to suggest that such factors have an impact on learning and time spent in school – apart from potentially having enough toilets to meet student needs (Cuesta et al., 2016) – the development of the SEC Index allowed the influence of these variables to be factored into the overall analysis.

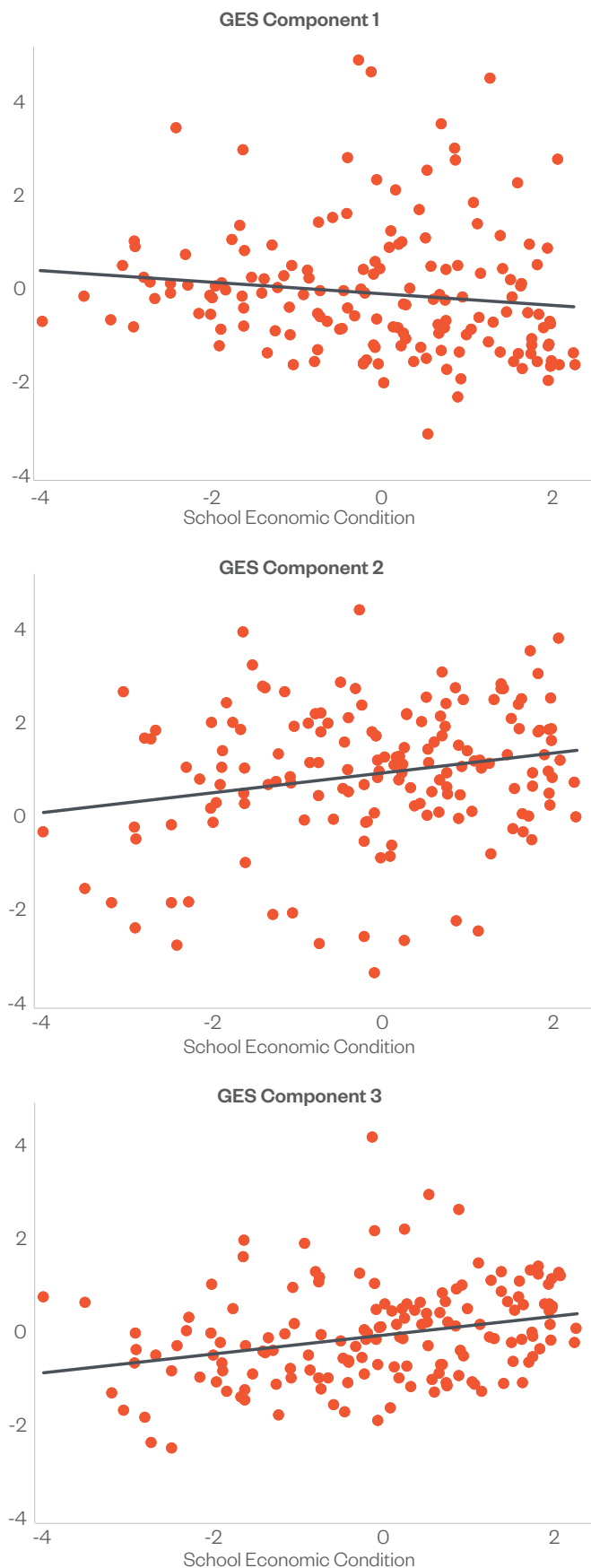
About half of the schools in the study needed repairs; just over half had roofs made of cement or concrete, while the rest had roofs made of galvanised iron (Table 2). Most had walls made of concrete, bricks or stone with lime, although some used natural materials such as wood, cane or bamboo. Most had computers, soap, water and electricity available all day. The variables contributing most strongly to this measure were the need for repairs, the roof material of the school, and the availability of soap. Component 1 of the GES Index, which focused on policies, was not significantly correlated with how highly a school scored on the SEC Index, but components 2 and 3 showed weak positive correlations with the SEC score (Figure 1).

The grade 8 pass rate for girls was positively associated with the second component of the GES Index, with the most important variables being the proportion of female toilets, the provision of a place to change menstrual pads, safety in travelling to school, and whether other girls stayed in school. However, there was no significant relationship between pass rates and the first and third components (Table 3). Indeed, a one-point increase in score on component 2 was associated

Table 2: Input variables for School Economic Condition (SEC) Index, 159 secondary schools in Nuwakot and Tanahun districts

Variable	Mean	SD	Min	Max
Walls of cement, concrete, or stone/lime (vs. natural materials): proportion	0.87	0.34	0	1
Cement or concrete roof (vs. galvanised iron roof): proportion	0.53	0.50	0	1
Electricity on all day: proportion	0.90	0.30	0	1
Toilets per student: ratio	0.02	0.01	0.003	0.07
School repairs needed: proportion	0.53	0.50	0	1
Water available: proportion	0.84	0.37	0	1
Soap available: proportion	0.62	0.49	0	1
At least one computer available: proportion	0.84	0.37	0	1
Presence of mixed-gender clubs: proportion	0.70	0.46	0	1
Teacher–student ratio	0.06	0.03	0.005	0.17

Figure 1: Gender Equitable School Index, components 1-3 vs School Economic Condition Index, 159 secondary schools in Tanahun and Nuwakot districts



with an 11% increase in the pass rate (Table 4). When adjusted for the impact of the school's economic condition (SEC), this association was attenuated to just under 10% – still a significant positive relationship.

Policy recommendations

The data shows a clear link between particular school policies and provisions and adolescent girls' academic achievement. This means there are a number of actions that schools in Nepal can take now to improve girls' retention rates.

Ensuring girls' safety in travelling to school

The School Sector Development Plan (SSDP) (2016/17 to 2022/23) does not specifically recognise or address adolescent girls' safety either in school or when travelling to and from school. As the Plan was developed in the post-2015 earthquake context, it was focused on disaster resilience and physical safety/infrastructure of schools. Yet safety is a barrier for girls attending school; the further a school is from home, the greater the risk, which means parents may be less likely to send their daughters (Leach and Sitaram, 2007; Jamal, 2016). Thus, girls' safety in getting to school needs to be prioritised within provincial and municipal-level policies and interventions. Making sure that quality secondary education is available in all areas, and that routes are safe for girls, is key to improving girls' consistent attendance, and grade 8 pass rates.

Establishing safe, girl-only spaces within schools

The SSDP details plans to develop girl-friendly spaces in schools, with a provision to 'progressively include all aspects of a gender-sensitive learning environment, including segregated toilets, water and sanitation facilities, and list of minimum conditions'. To make this environment a reality, there is a need to incorporate components of this plan into provincial and municipal-level policies and programmes. In addition, the National Adolescent Health and Development (NAHD) Policy (2019) highlights comprehensive sexuality education (CSE) as one of the opportunities for enhancing adolescent development. Under the broader umbrella of CSE, priority should be given to raising awareness of the need to provide female toilets and menstrual-hygiene facilities. This provision will be key to encourage more consistent attendance during girls' menstrual cycles. Creating female-only spaces helps girls to attend school during menstruation and prevents them from falling behind, which is likely to have a knock-on effect on exam performance. These school-based interventions also contribute to dismantling taboos around menstruation and broader norms of social exclusion

Table 3: Mean percentage of girls passing grade 8 exam in the prior year by GES score, 156 secondary schools in Nuwakot and Tanahun districts**

		Level of GES Component			
		Low	Moderate	High	
GES Component 1	Mean % Passing (SD)	71.74 (33.92)	70.63 (34.99)	62.98 (33.28)	p=0.37
GES Component 2	Mean % Passing (SD)	54.02 (38.71)	67.47 (30.43)	84.02 (25.40)	p<0.0001
GES Component 3	Mean % Passing (SD)	66.14 (32.08)	71.95 (34.56)	67.31 (35.82)	p=0.66

Low=first tertile, Moderate=second tertile, High=third tertile of the GES components score

***Three schools were missing data on girls' grade 8 pass rates.*

(Amatya et al., 2018), which should benefit women and girls in future generations.

Using the Gender-Equitable School Index

There are a number of gender-equity measures embedded in government policies that could be complemented by the introduction of the GES Index. The NAHD policy 2019 has provisioned some indicators, such as the percentage of schools with separate toilets for girls and boys, the percentage of schools providing menstrual pads for girls, and the percentage of schools having pad disposal facilities. Likewise, the SSDP incorporates an equity strategy which will be embedded in annual strategic implementation plans and annual work plans and budgets. The GES Index has a broader set of indicators and can therefore support the rollout of gender mainstreaming provisions in provincial and municipal-level policies and programmes. This rollout would provide a strong basis for identifying which schools could benefit most from interventions to improve girls' educational outcomes.

Using the GES Index to monitor and evaluate programmes

The SSDP has set annual targets for gender equity and separate sanitation facilities in model schools, starting with

50 schools in 2016/17 and increasing to 150 by 2021/22. The NAHD policy also has indicators on the percentage of schools with adolescent-friendly information centres, the percentage of schools that provide primary health care, health education and counselling, and the percentage of adolescents continuing education up to secondary level. It recommends programmes to address adolescent issues at the individual, family, community, municipal, provincial and federal levels. There is a need to develop indicators for these interventions to ensure effective implementation. Using the GES Index to monitor and evaluate programming will help ensure that educational interventions for adolescents address gender issues and support gender equality.

Acknowledgements

This research brief was supported by a grant from the Gender and Adolescence: Global Evidence (GAGE) consortium to Dr. Kathryn Yount. The authors thank the staff of Emory University, the Center for Research on Environment, Health and Population Activities (CREHPA), and GAGE for their support, in particular Cari Jo Clark, Kusum Wagle, Mahesh Puri Dev C Maharajan, Kate Pincock and Sudeep Uprety. We also thank Kathryn O'Neill for her editorial assistance with this brief and Jojoh Faal Sy for layout assistance.

Table 4: Association of percentage of girls passing grade 8 exam and GES components 1-3, 156 secondary schools in Tanahun and Nuwakot districts

		Level of GES Component			
		Unadjusted Coef.	95% C.I.	Adjusted for SEC	95% C.I.
GES Component 1		-1.60	[-5.21, 2.00]	-0.84	[-4.39, 2.70]
GES Component 2		11.29	[6.87, 15.71]	9.74	[5.32, 14.17]
GES Component 3		-2.86	[-7.83, 2.09]	-4.96	[-9.98, 0.07]

References

- Amatya, P., Ghimire, S., Callahan, K., Baral, B.K. and Poudel, K. (2018) 'Practice and lived experience of menstrual exiles (*Chhaupadi*) among adolescent girls in far-western Nepal' *PLoS ONE* 13(12): e0208260
- Choe, M.K., Thapa, S. and Mishra, V. (2005) 'Early marriage and early motherhood in Nepal' *Journal of Biosocial Science* 37(2): 143–162
- Cuesta, A., Glewwe, P. and Krause, B. (2016) 'School infrastructure and educational outcomes: a literature review, with special reference to Latin America' *Economia* 17(1): 95–130
- Delprato, M., Akyeampong, K., Sabates, R. and Hernandez-Fernandez, J. (2015) 'On the impact of early marriage on schooling outcomes in Sub-Saharan Africa and South West Asia' *International Journal of Educational Development* 44: 42–55
- Jamal, A. (2016) 'Why he won't send his daughter to school – barriers to girls' education in northwest Pakistan: a qualitative Delphi Study of Pashtun men' *SAGE Open* 1–14
- Leach, F. and Sitaram, S. (2007) 'Sexual harassment and abuse of adolescent schoolgirls in South India' *Education, Citizenship and Social Justice* 2(3): 257–277
- Meyer-Adams, N. and Conner, B.T. (2008) 'School violence: bullying behaviors and the psychosocial school environment in middle schools' *Children & Schools* 30(4): 211–221
- Oster, E. and Thornton, R. (2009) *Menstruation and education in Nepal*. Working Paper No. 14853. Cambridge, MA: National Bureau of Economic Research
- Raj, A., McDougal, L., Silverman, J.G. and Rusch, M.L. (2014) 'Cross-sectional time series analysis of associations between education and girl child marriage in Bangladesh, India, Nepal and Pakistan, 1991–2011' *PLoS ONE* 9(9): e106210
- Schacter, H.L. and Juvonen, J. (2018) 'You've got a friend(ly school): can school prosocial norms and friends similarly protect victims from distress?' *Social Development* 27(3): 636–651
- Stash, S. and Hannum, E. (2001) 'Who goes to school? Educational stratification by gender, caste, and ethnicity in Nepal' *Comparative Education Review* 45(3): 354–378
- United Nations Children's Fund (UNICEF) (2017) *The state of the world's children 2017: children in a digital world*. New York: UNICEF (www.unicef.org/sowc2017)
- United Nations General Assembly (2015) *Transforming our world: the 2030 Agenda for Sustainable Development*. 21 October 2015, A/RES/70/1 (www.refworld.org/docid/57b6e3e44.html)
- Wang, W., Vaillancourt, T., Brittain, H.L., McDougall, P., Krygsman, A., Smith, D. et al. (2014) 'School climate, peer victimization, and academic achievement: results from a multi-informant study' *School Psychology Quarterly* 29(3): 360–377
- Wright, C., Mannathoko, C. and Pasic, M. (2006) *Child-friendly schools manual*. New York: UNICEF