

A Billion Readers (BIRD)

Same Language Subtitling (SLS) in India



ITU workshop: The Future of Television for
South Asia, Arab, and Africa Regions



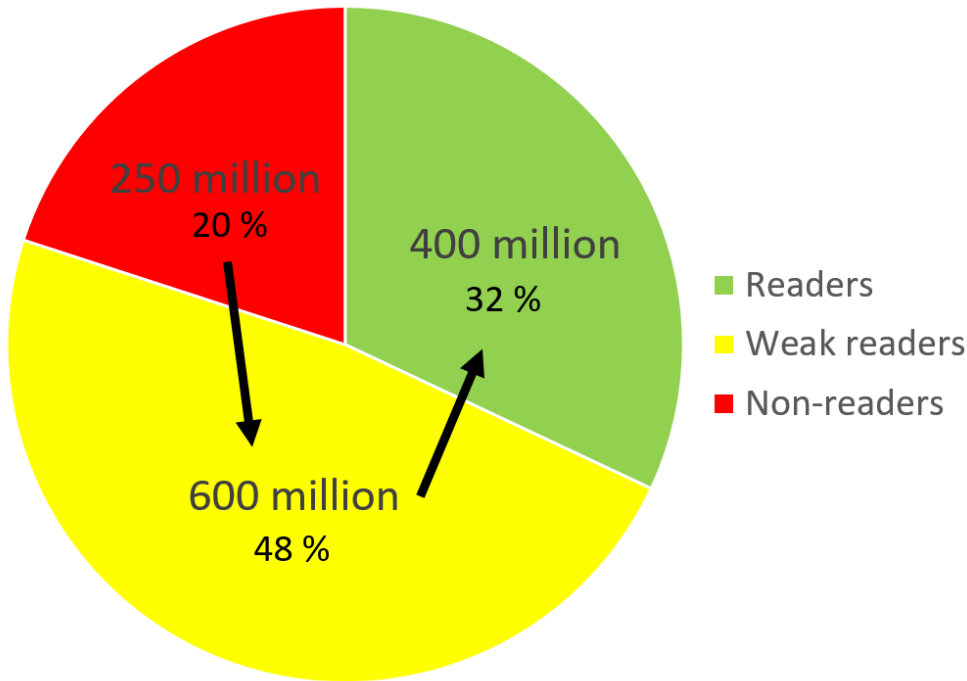
Brij Kothari
May 11, 2023

Supported by:



BIRD: 1.4 B Indians on a lifelong pathway:

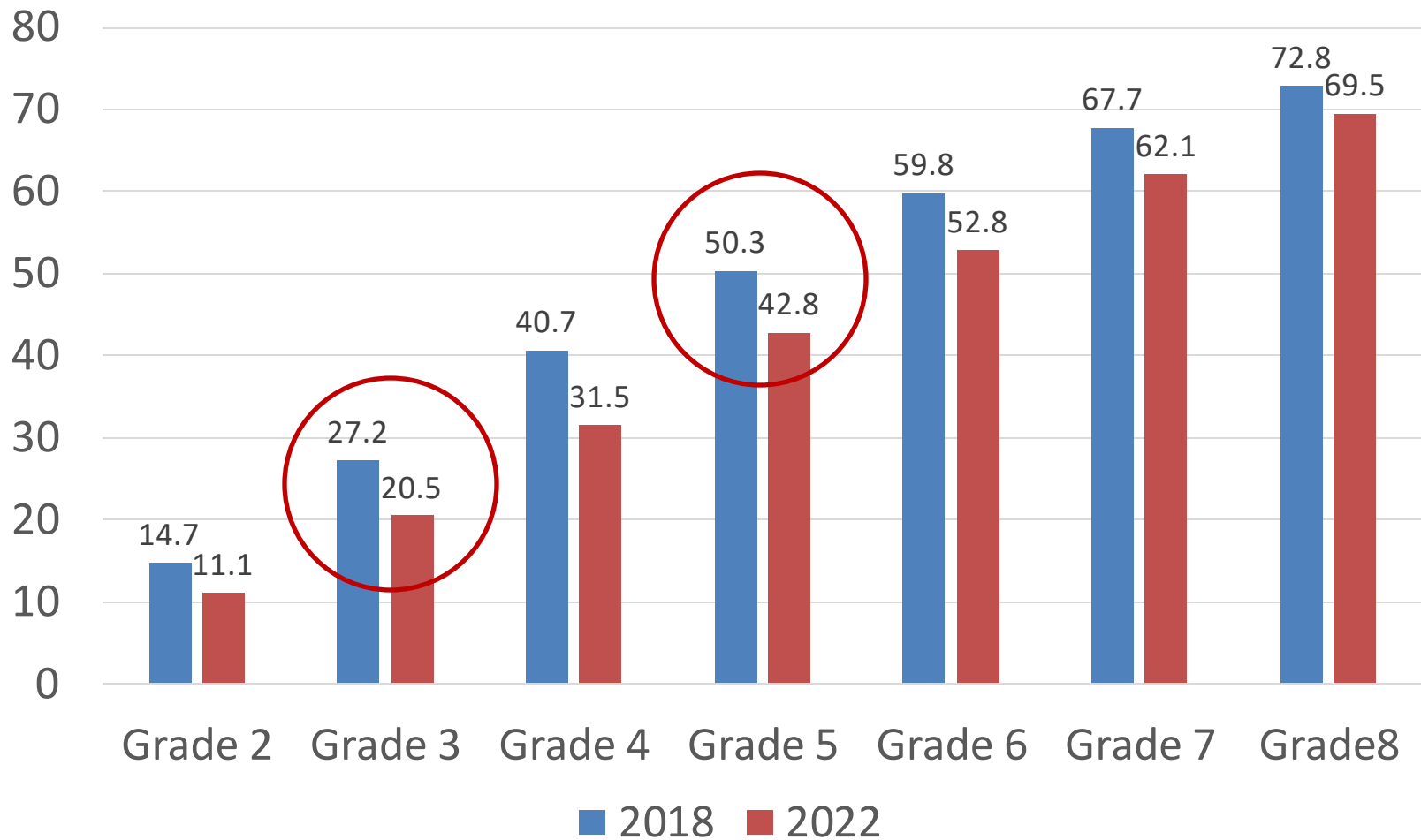
- ↑ Reading literacy (600 M)
- ↑ Language learning (1 B)
- ↑ Media Access (70 M)



Intermittent schooling, lack of reading after schooling will be the norm.

Poor reading outcomes made worse by the pandemic

Can read at 2nd Grade level (ASER)



TV in India



- Viewers: 1 B
- Average daily TV viewing: 3h 43m (2022)
- Average life span: 70 years

Same Language Subtitling (SLS)



Same Language Subtitling:
22 Official Indian Languages



சர சர சார காத்து வீசம் போது



Today's your day



Theory of Practice

Informed by research

- SLS causes automatic and inescapable reading
- Lifelong practice leads to automaticity and fluency
- Scaffolded reading, builds on a learner's knowledge

High passion context

- Strong motivation to learn, low anxiety
- Success & instant gratification
- Direct feedback on improvement
- Weak-reading skills can remain private while still improving

Is there anything else?

- *Guarantees* lifelong access to reading in one's language

Songs: Eye-tracking sample, weak reader

No SLS

SLS



वो तुझे कैसे बयाँ करें

Subject: Sugna, female, age 24, Umarni village, Rajasthan

Eye-tracking sample, weak-literate

No SLS



SLS



Subject: Sugna, female, age 24, Umarni village, Rajasthan

Watching Subtitled Television

Automatic Reading Behavior

When foreign movies are subtitled in the local language, reading subtitles is more or less obligatory. Our previous studies have shown that knowledge of the foreign language or switching off the sound track does not affect the total time spent in the subtitled area. Long-standing familiarity with subtitled movies and processing efficiency have been suggested as explanations. Their effects were tested by comparing American and Dutch-speaking subjects who differ in terms of subtitling familiarity. In Experiment 1, American subjects watched an American movie with English subtitles. Despite their lack of familiarity with subtitles, they spent considerable time in the subtitled area. Accordingly, subtitle reading cannot be due to habit formation from long-term experience. In Experiment 2, a movie in Dutch with Dutch subtitles was shown to Dutch-speaking subjects. They also looked extensively at the subtitles, suggesting that reading subtitles is preferred because of efficiency in following and understanding the movie. However, the same findings can also be explained by the more dominant processing of the visual modality. The proportion of time spent reading subtitles is consistently larger with two-line subtitles than with one-line subtitles. Two explanations are provided for the differences in watching one- and two-line subtitles: (a) the length expectation effect on switching attention between picture and text and (b) the presence of lateral interference within two lines of text.

Do weak readers in rural India automatically read same language subtitles on Bollywood films? An eye gaze analysis

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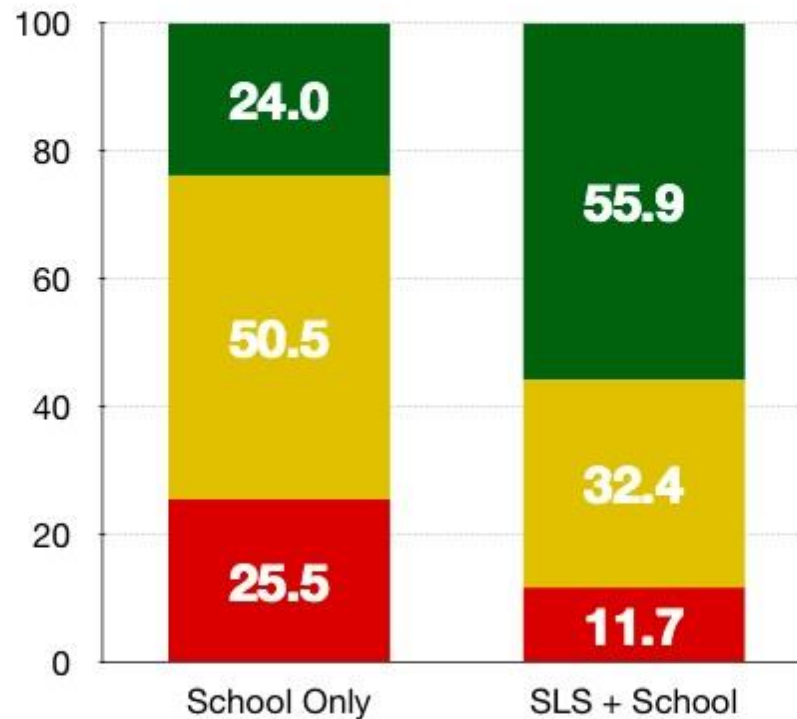
Nirav Kumar Shah
PlanetRead,
Pondicherry, India

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Same Language Subtitling (SLS) of audio-visual content on mainstream TV entertainment to improve mass reading literacy was first conceived and piloted in India. SLS is now being scaled up nationally to ensure that the reading skills of one billion TV viewers, including 600 million weak readers, remain on a lifelong pathway to practice, progress, and proficiency. Will weak readers ignore or try to read along with SLS? Our eye-tracking study investigates this question with 136 weak readers drawn from a remote village in Rajasthan state by showing them popular Hindi film clips of dialog and songs, with and without SLS. We developed an interactive web-based visual analytics tool for exploring eye-tracking data. Based on an analysis of fixations, saccades, and time spent in the subtitle and non-subtitle areas, our main finding is that 70 percent of weak readers engaged in unprompted reading while watching film clips with SLS. We observed that saccadic eye movement is a good indicator to quantify the amount of reading with SLS, and saccadic regression can further differentiate weak readers. Eye-tracking studies of weak readers watching subtitles are rare, and ours may be the first with subjects from rural India.

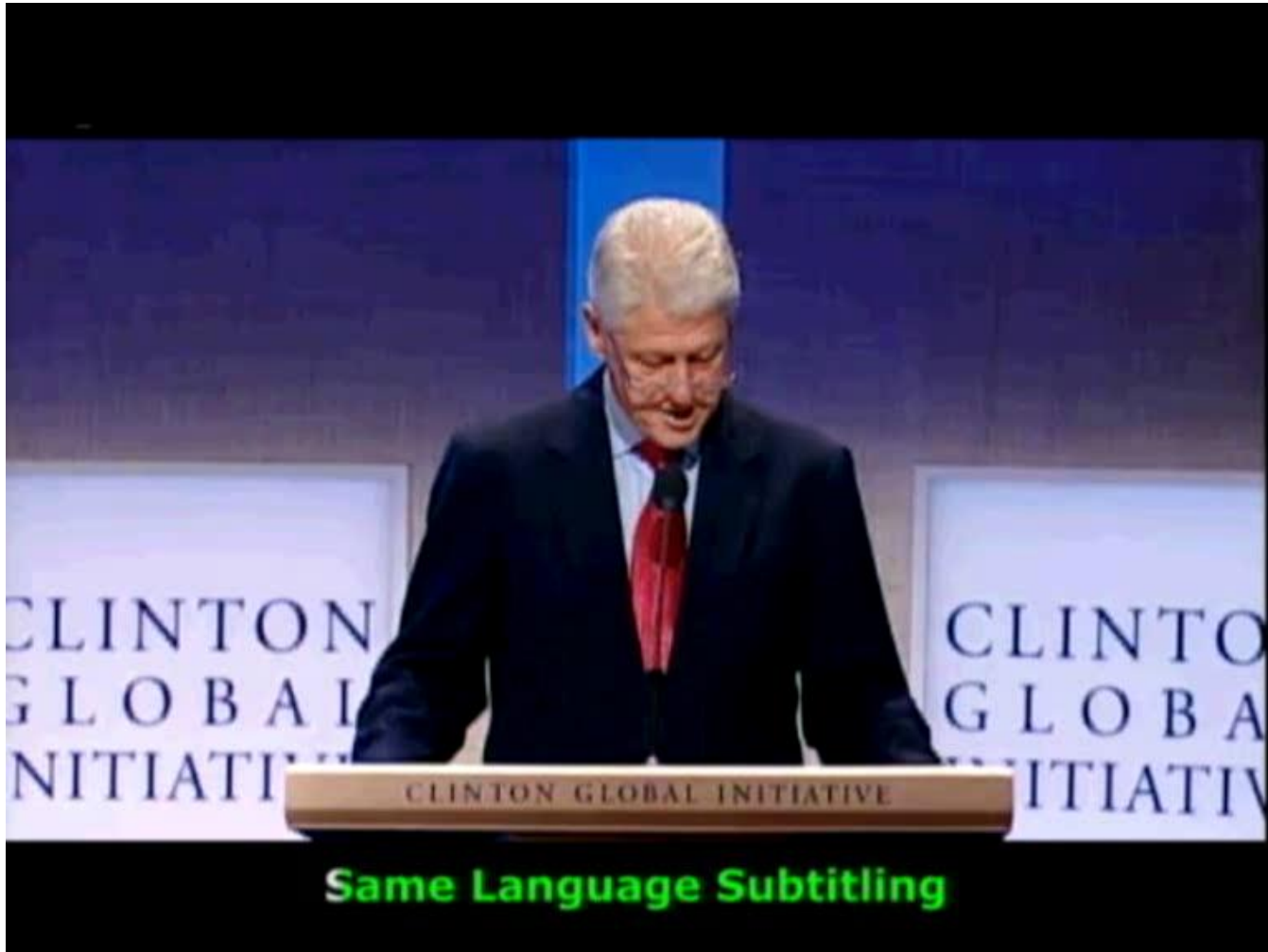
Impact of SLS

on illiterate students



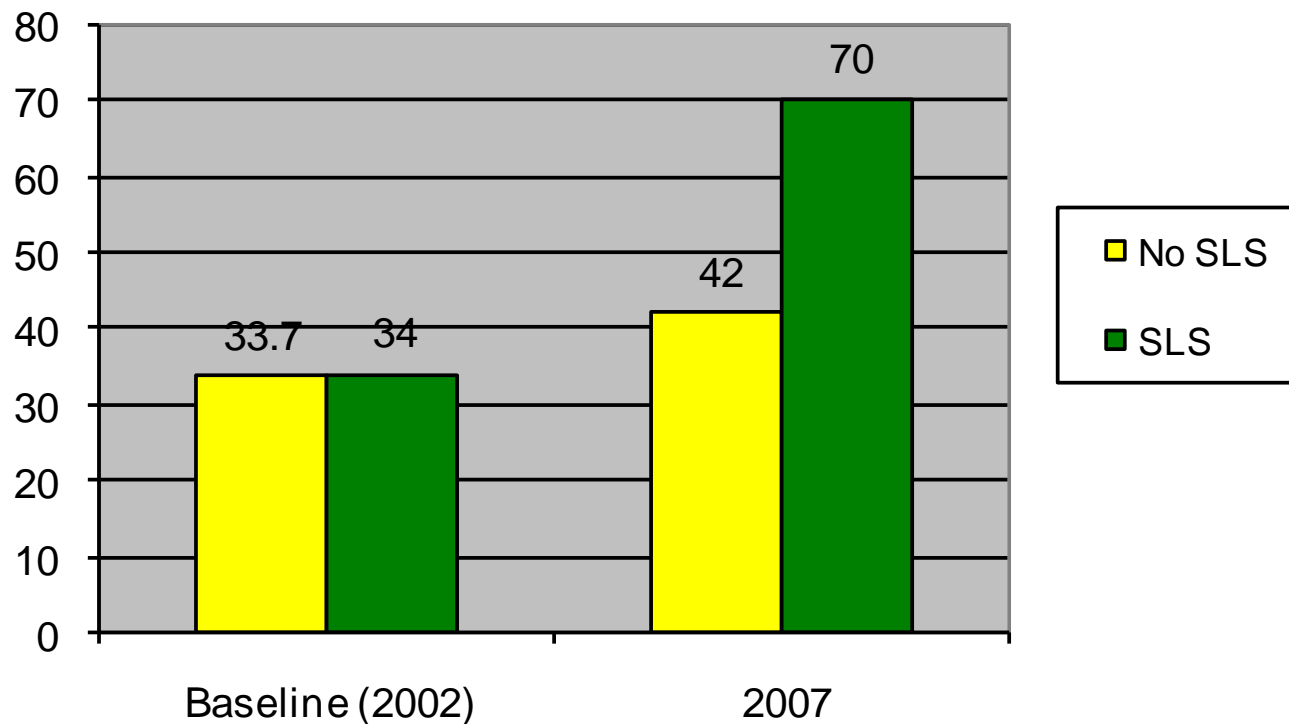
■ Good-Reader ■ Early-Reader ■ Non-Reader

Bill Clinton (2009)



% Reading at least once
a week

Newspaper reading among early-readers



Data collected independently, after 4.5 years of SLS
on national TV, by AC Nielsen (ORG-CSR)

Same Language Subtitling of Bollywood Film Songs on TV: Effects on Literacy

Brij Kothari

Tathagata Bandyopadhyay

Indian Institute of Management, Ahmedabad

Abstract

In addition to 273 million illiterates (2001 Census), India has an estimated 389 million officially “literate” people who cannot read a simple text. Same Language Subtitling (SLS), the concept of subtitling audiovisual content in the same language as the audio, has been promoted as a low-cost solution to addressing functional illiteracy using existing film songs on television that 740 million viewers already watch regularly. SLS was implemented for five years on Rangoli, a nationally telecast, popular weekly TV program of Bollywood film songs in Hindi. Data collection for the baseline (2002) and endline (2007) was conducted by Nielsen’s ORG-CSR on a number of literacy skill indicators in reading, writing, and self-perception. The agency drew a random sample from five Hindi states ($n = 7,409$). Self-reported regular Rangoli viewers (treatment or SLS group) were compared to those who saw it rarely or never (control or no-SLS group). For children in school (6–14) and youth/adults (15+), the SLS group showed substantially greater mean improvement on all the indicators of literacy skill than the no-SLS group. Regression analyses confirmed the significant effect of SLS on literacy.

Research Article

Reading Out of the “Idiot Box”: Same-Language Subtitling on Television in India

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Abstract

Same Language Subtitling (SLS) is the idea of subtitling the lyrics of song-based television programs (e.g., music videos), in the same language as the audio. Situated in a literature review of subtitling, this article describes the first-ever implementation of SLS on a TV program of film songs, specifically for first-language literacy. Chitrageet, a weekly 30-minute TV program of Gujarati film songs, was telecast across Gujarat state in India, with the lyrics subtitled in Gujarati. We discuss the results of the pilot study to test the effectiveness of SLS of film songs on the reading skills of out-of-school people. With limited exposure to SLS within a telecast period of 6 months, SLS was found to make an incremental but measurable contribution to decoding skills, across the group that generally saw the subtitled TV program (as compared to those who did not). Viewer testimonies further strengthen the case for SLS beyond quantifiable improvement, as a simple and economical idea for infusing everyday television entertainment with reading and writing (or scriptacy) transactions. The potential of SLS in India and other countries is enormous. The idea is especially powerful in popular culture for scriptacy skill improvement, motivation of nonscriptates, increasing viewers' exposure and interaction with print from early childhood, and increasing media access among the deaf.

Benefits of SLS for Reading and Language Learning



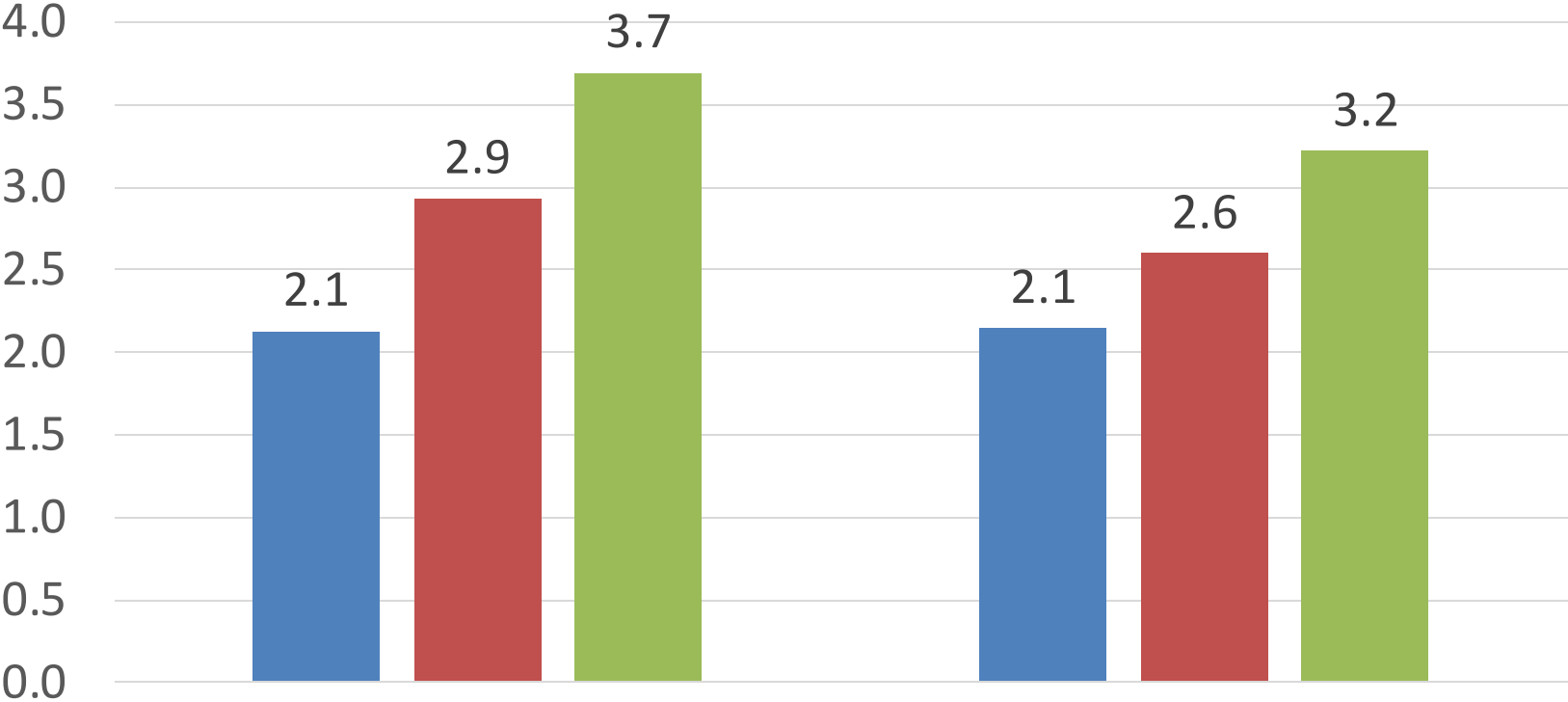
Were you able to read what you saw?

Benefits of SLS for Reading and Language Learning



Bihar: Daily TV consumption: Girls watch more

Hours



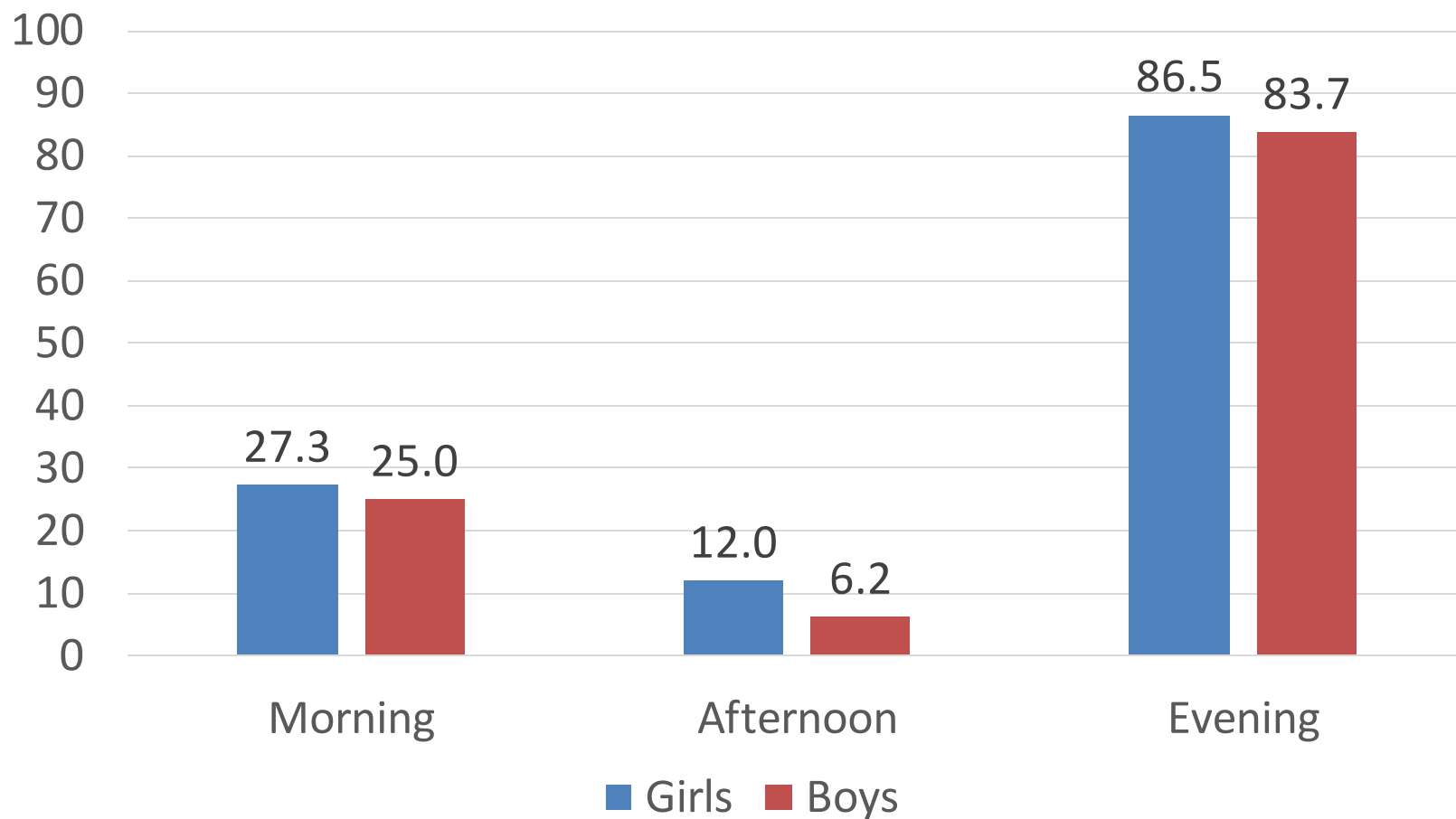
Girls

Boys

■ School Day ■ Sunday/Holiday ■ Summer Vacations

Bihar: Higher proportion of girls watch

When do children watch TV (%)?





10 cents for a lifetime of reading to one person



Policy context

- Accessibility Standards for TV under the Rights of Persons with Disabilities (RPwD) Act, 2016
 - 50% entertainment content with SLS by 2025
- Push for FLN under NEP, 2020
- Pandemic: Reading has dropped to 2012 levels (ASER)

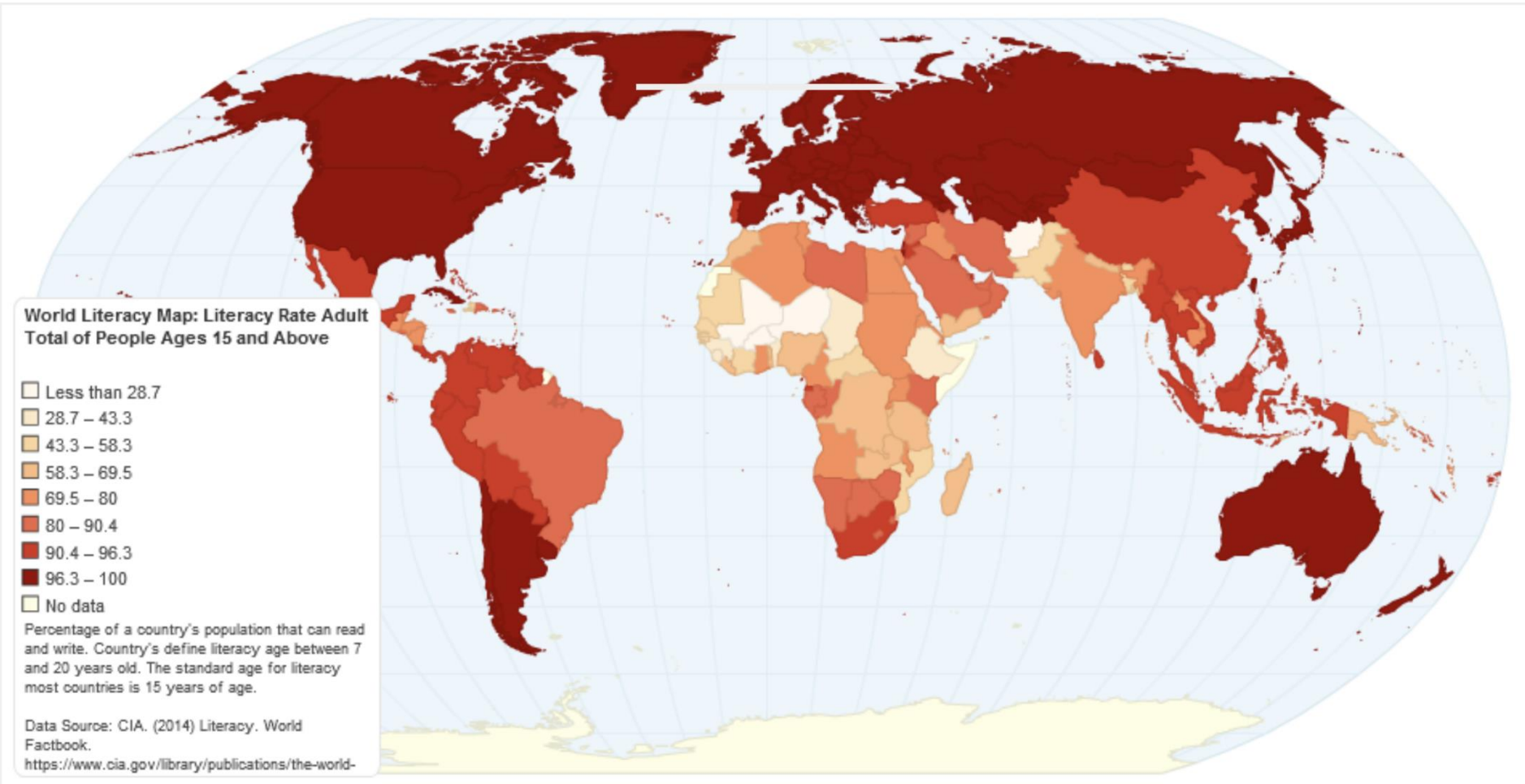
A Billion Readers (BIRD)



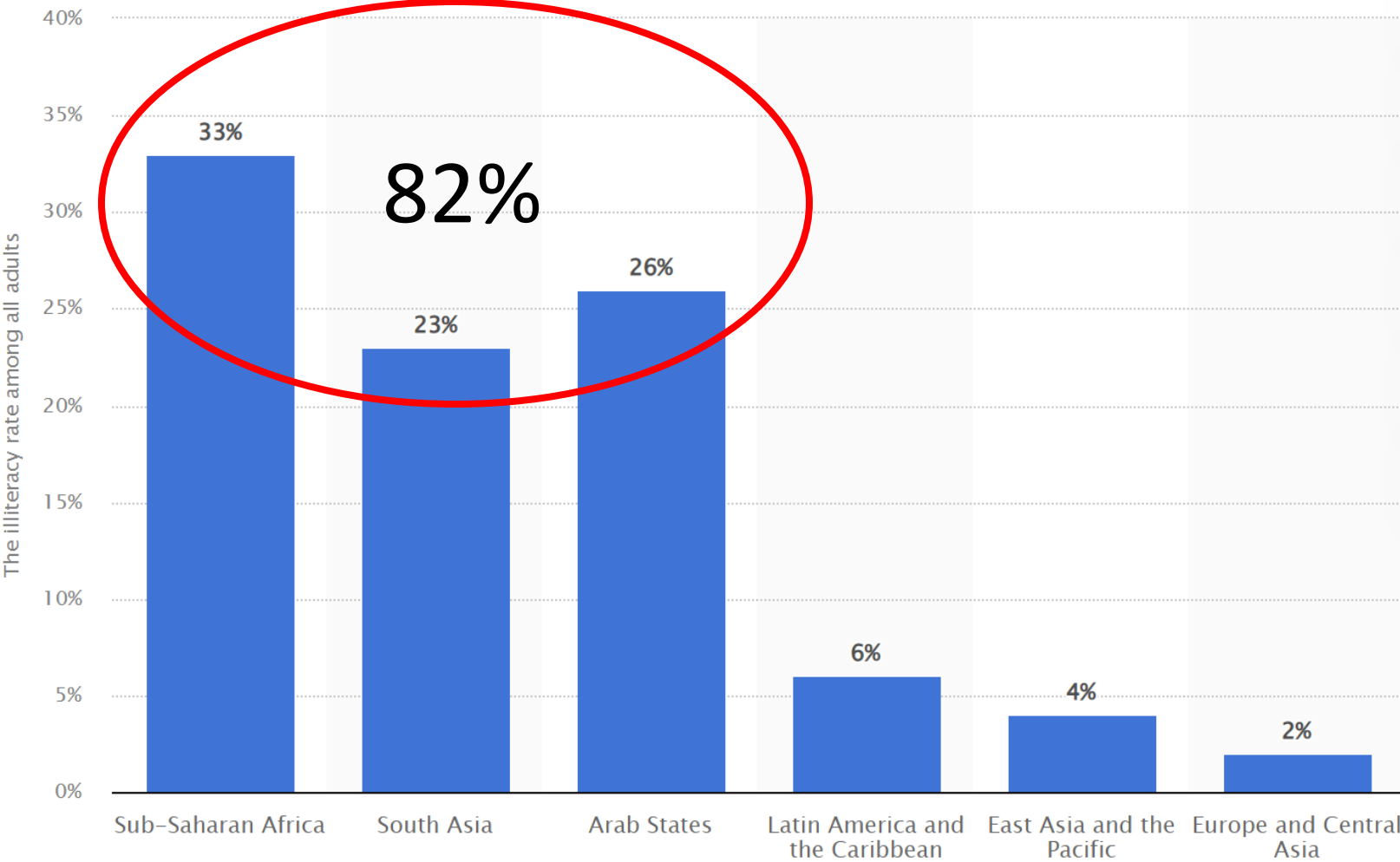
Strategy

- **Video = A + V → Video = A + V + SLS**
- Strong gender focus
- Policy leverage points for TV and streaming
- Evidence directed at system change
- Matching funding for states and center

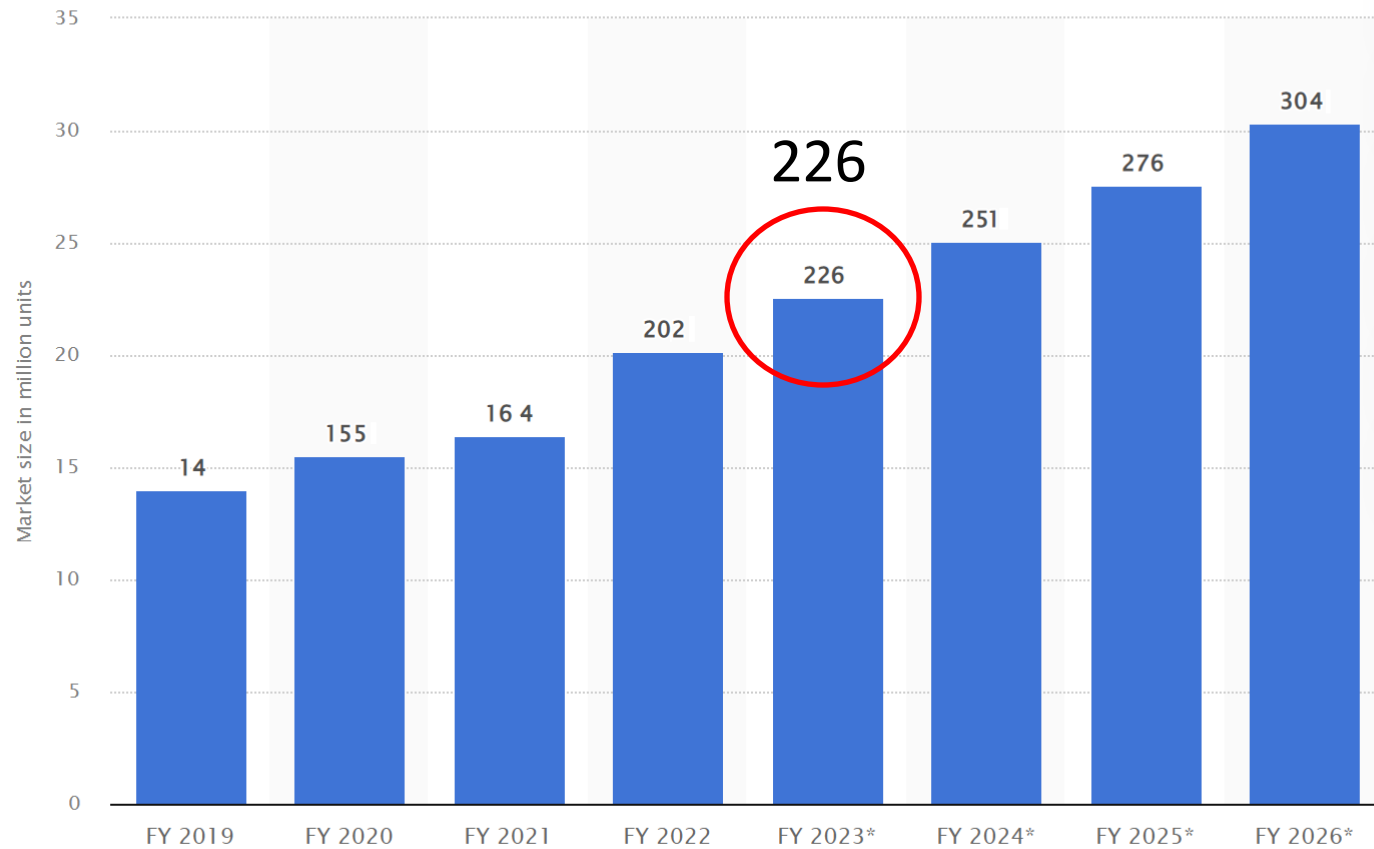
Literacy in South Asia, Arab and Africa Regions



The illiteracy rate among all adults (over 15-year-old) in 2020, by world region

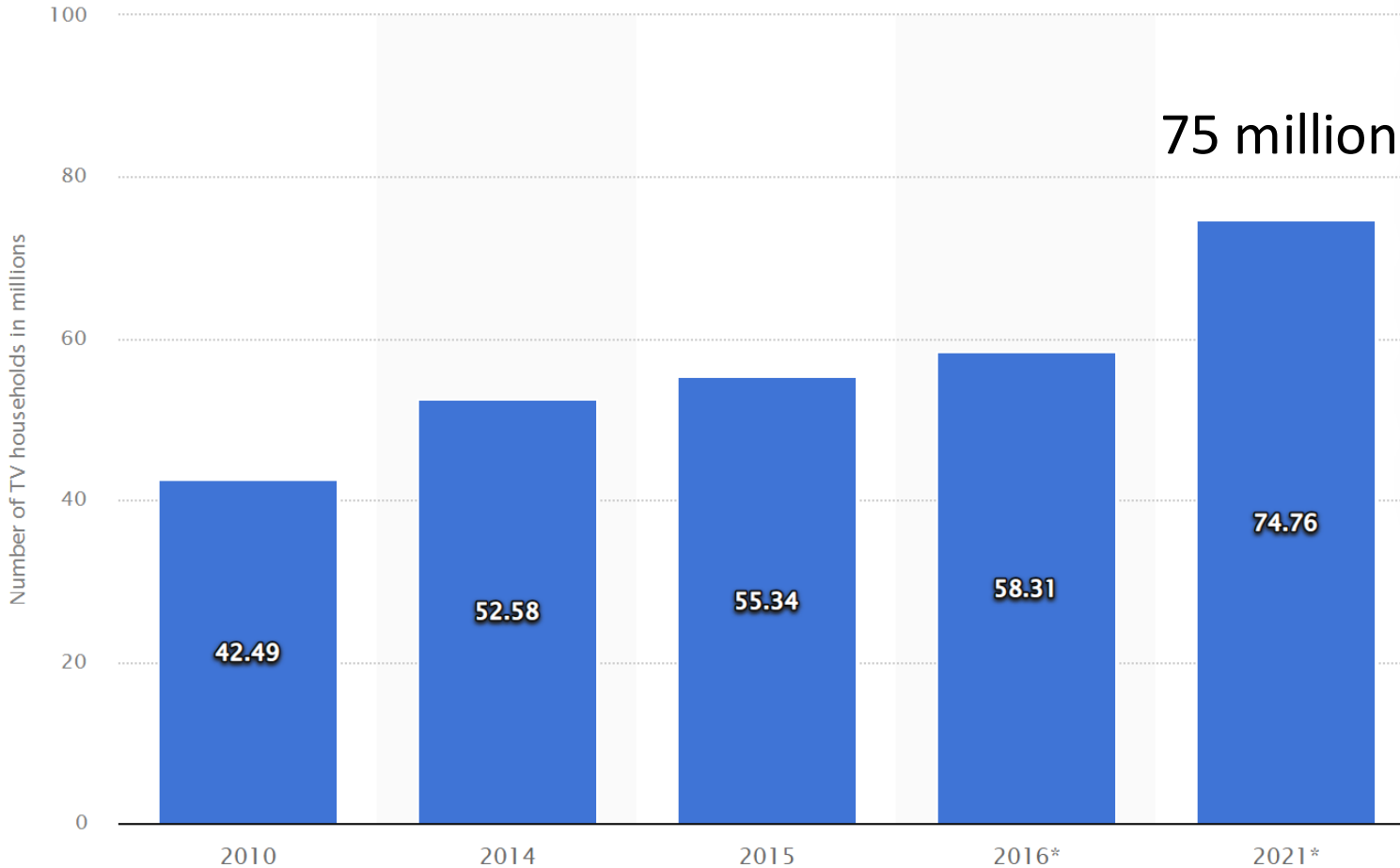


Size of the television market in India from FY 2019 to FY 2022, with estimates till FY 2026 *(in million units)*



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Number of TV households in Sub-Saharan Africa from 2010 to 2021 *(in millions)*







Cape Town, South Africa, May 2017



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