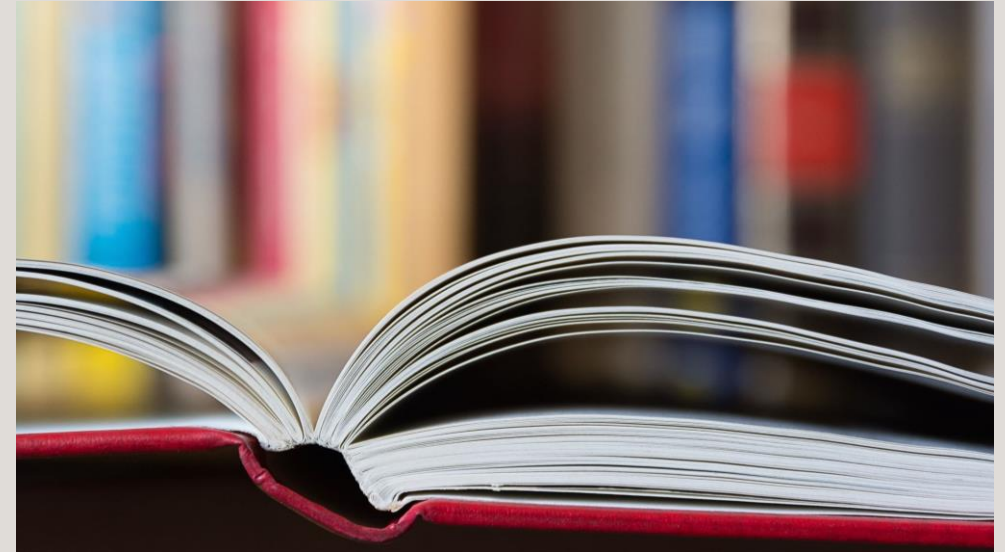


# STEM-POWER Literature Review:



Key authors and themes

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# Background/context

- The efficacy of the pipeline supporting women's progression to STEM research leadership in Indonesia is under-researched.
- Few tools exist for which could assist Indonesian Universities to help interrogate local cultures and practices in relation to research leadership and understand the health of the researcher development pipeline.
- The World Bank estimates that women's participation in STEM based higher education has plateaued. In 2018 only 37.4% of graduates with STEM degrees were women representing a marginal decrease from 37.5% in 2014 the first year of data available. This is very similar to the number of women represented as post-doctoral researchers.
- The voids in the research literature make it difficult to understand women researcher's experiences of points of transition in the pipeline and potential progression to leadership roles in research.
- Drawing on research from the wider field of leadership in Indonesia they note a "dearth of studies" (Arquisola and Rentschler 2023). This is where we commence our review (e.g. Mulya and Sakhiyya, 2021; Priyatna, 2013; McClaren et al. 2019 and Andajani et al's; 2016).

# Search Parameters

**Main focus:** What is known about women's career progression to STEM research leadership in Indonesia?

**Literature type:** Published and grey literature

**Dates:** 2000 to present date

## Search process:

- Follow references from seven items referenced and 4 items mentioned in the original bid (daisy-chaining/snowballing)
- New searches:
  - Databases: Science Directs, WebofScience , DOAJ, PLOSjournals, IETjournals , BEI, SpringCompact, ERIC, HW Wilson Abstracts, Scopis, Proquest, Emerald Insight), specific journals, Google Scholar and Social Media
  - Searches of Researchgate and Google Scholar

**Results:** 111 items identified in and 42 identified as eligible to go forward to full reading

## Keywords used in the search process

Indonesia South-East Asia Global South	Leadership Women Career Progression Career advancement Gendering career capital
Academia Higher education University	Gender Diversity Inequality Bias
STEM Maths Engineering Science	



# **Women's career progression to Higher Education leadership in Indonesia**

# Key authors/sources – Journal Articles

Cubillo and Brown (2003)  
Barriers to leadership

Kholis (2012a)  
Career advancement, progression criteria

Andajani et al. (2016)  
Gender, women's leaderships, collective leaderships, barriers.

Toyibah (2018)  
Gender gap, academic career path

Haeruddin et al. (2019)  
Women academic identity and organisational barriers

McLaren et al. (2019)  
Women's career advancement

Sakhiyya and Locke (2019)  
Meritocracy and empowerment discourses

Arquisola (2020)  
Constraints for female leadership progression

Arquisola et al. (2020)  
Religion; gender perceptions

Muflichah (2020)  
Muslim women academics; barriers; feminism

Toyibah (2020)  
Gendered career advancement

Cahyati et al. (2021)  
Women leadership, Constrains, Opportunities

Isnaini (2021)  
Barriers and enablers

Mulya and Sakhiyya (2021)  
Islamic notion of leadership (Amanah); neoliberalism

Mustakim (2021)  
Patriarchal culture as a barrier

Puspitasari and Sushandoyo (2022)  
Female career progression; Barriers

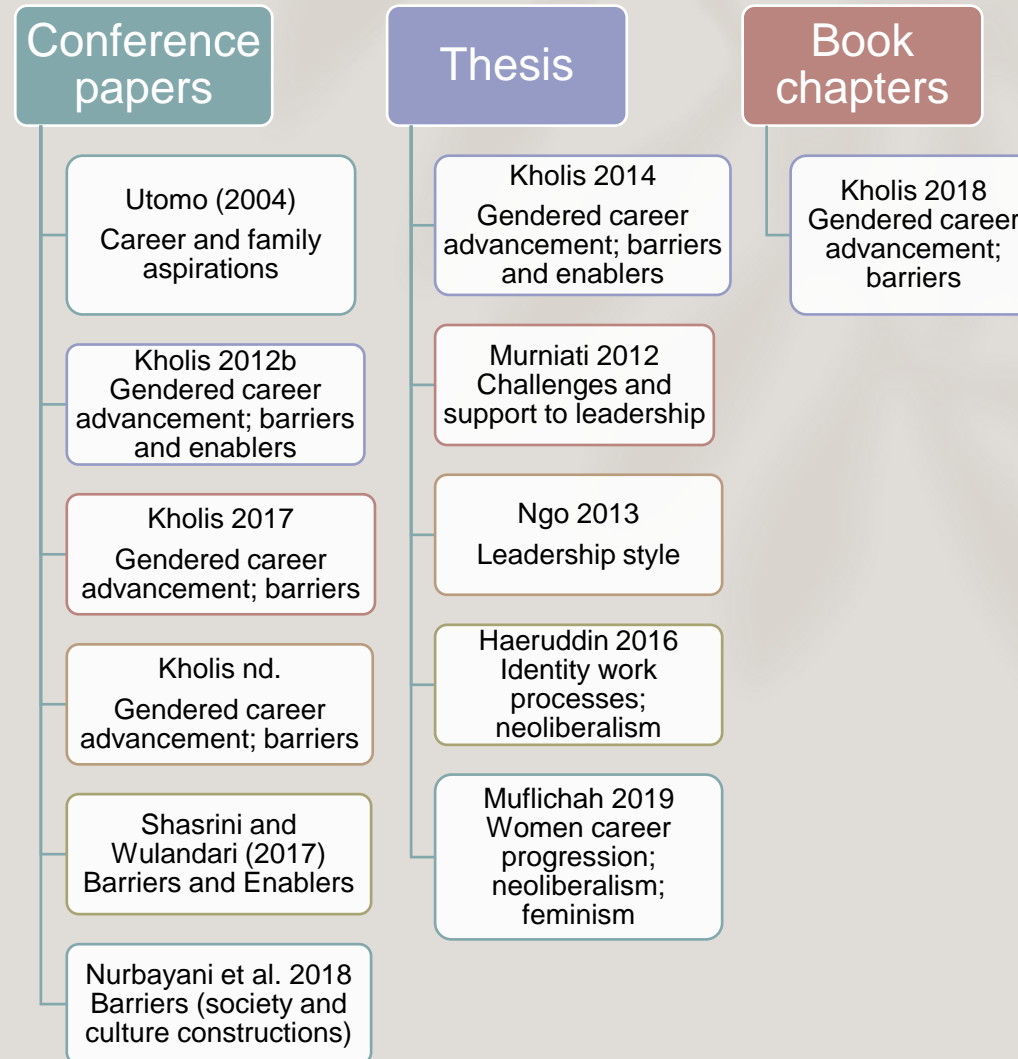
Wijayanti et al. (2021)  
Glass ceiling; women career advancement

Arquisola and Rentschler (2023)  
Gendered in-role behaviours; patriarchal society

Gaus et al. (2023)  
Cognitive process, gender stereotypes

McLaren et al. (2023)  
Civil servant, career progression, self-perceptions

# Key authors/sources – Conference Papers, Thesis, Book chapters





# Key themes (starting with themes from EnPOWER)

- **Government policies and expectations:**

- Retirement age
- Ownership of universities
- Communist Party Membership
- Equality policies
- Strategies and solutions
- 'Not everyone complained'

- **University processes and cultures:**

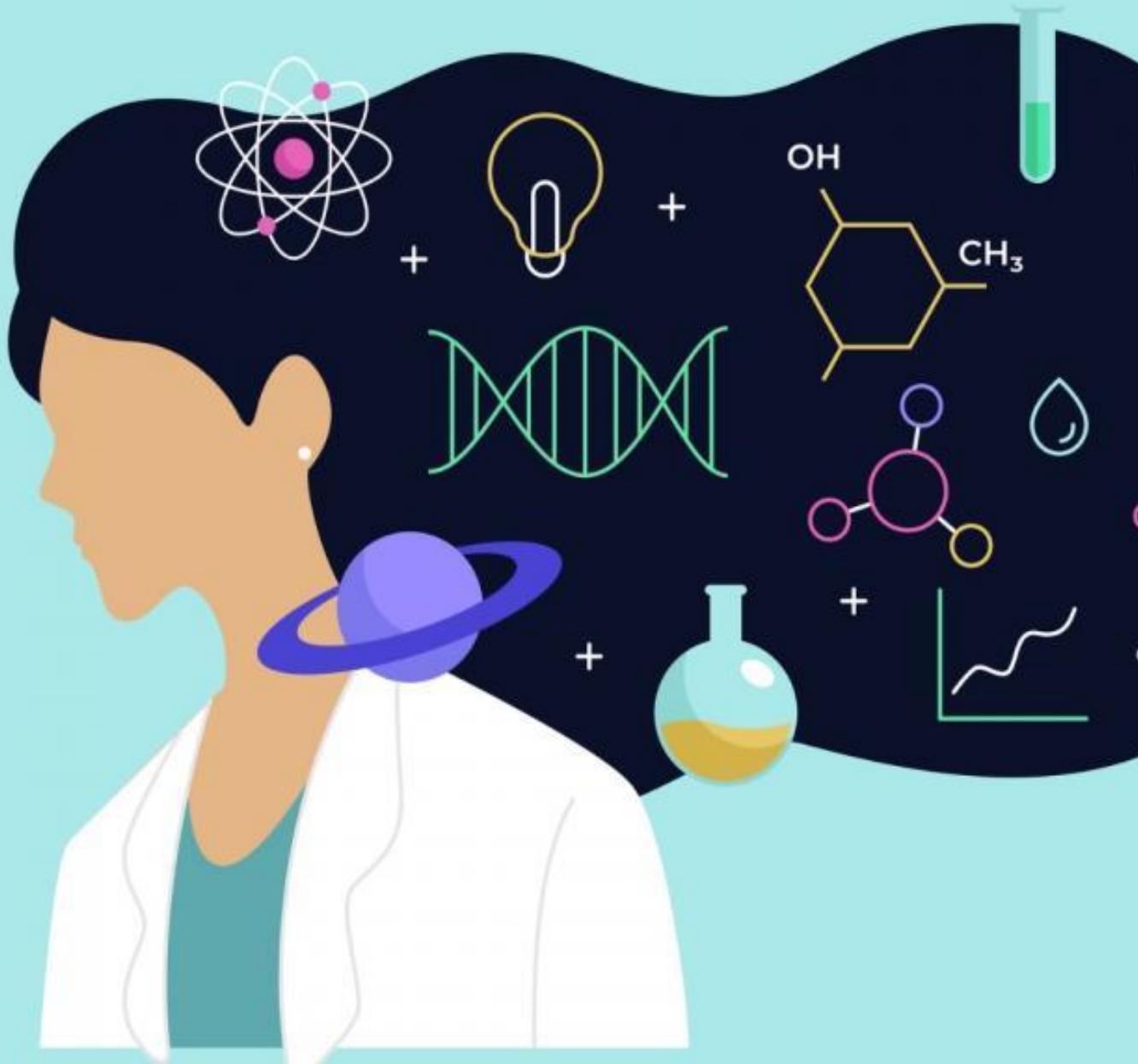
- Age and length of employment
- Recruitment processes
- Leadership and management style
- Mentor/role model/sponsor/line manager
- Other leader's paths / predecessor or subordinates
- Merit schemes and leadership guides
- Opportunities, networking and skills development
- 'Want to do it, just lack of time'
- Neoliberalism
- Progression policies and academic standards
- Women empowerment
- Work-family combination policies

- **Socio-cultural norms and beliefs:**

- Age and respect for elders
- Drinking and networking
- Body politics and stereotypes
- Collectivism (merits)
- What women can aspire to
- 'Think manager, think male'
- Patriarchal culture
- Religious beliefs and values
- Social values
- Traditional gender role attitudes

- **Personal factors / mindsets / attributes:**

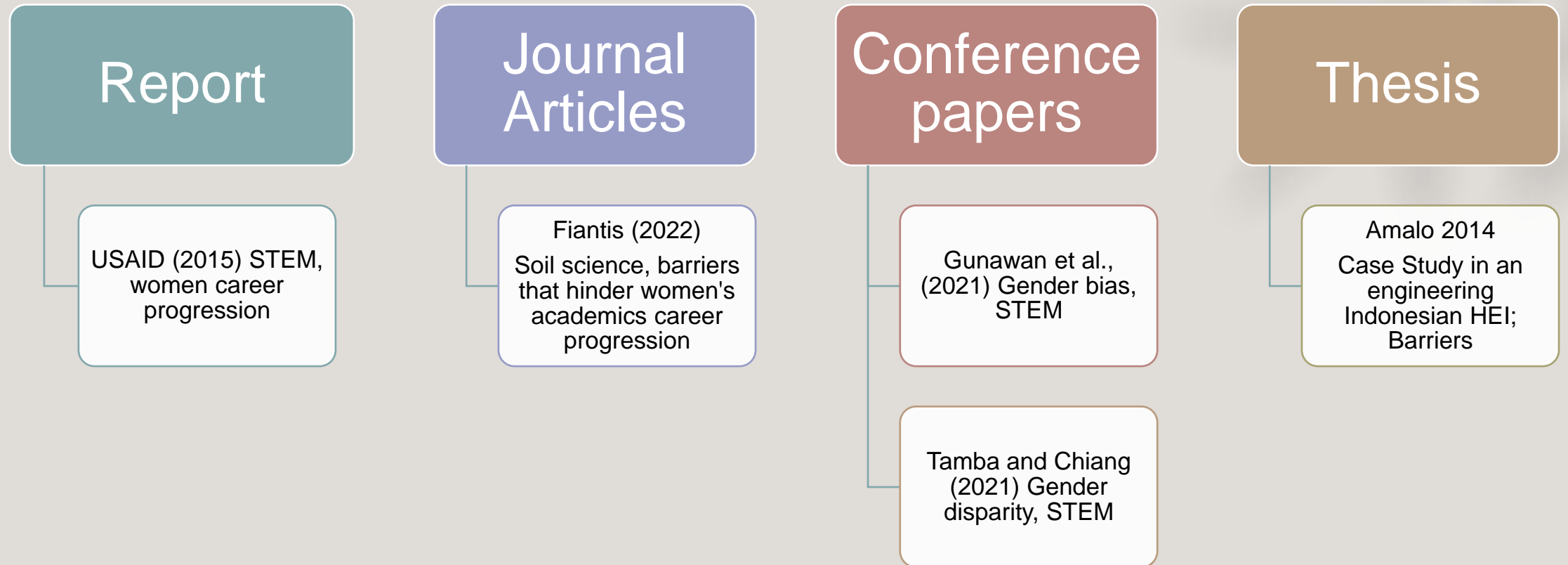
- Ongoing education and training
- Family background and support
- External roles and memberships
- Career plan / path
- Double shift and maternity leave
- Confidence/ assertiveness / save face
- Luck/serendipity
- 'Happy where I am'
- Gender equality and social inclusion awareness



**Women's career progression to STEM research leadership in Indonesia?**



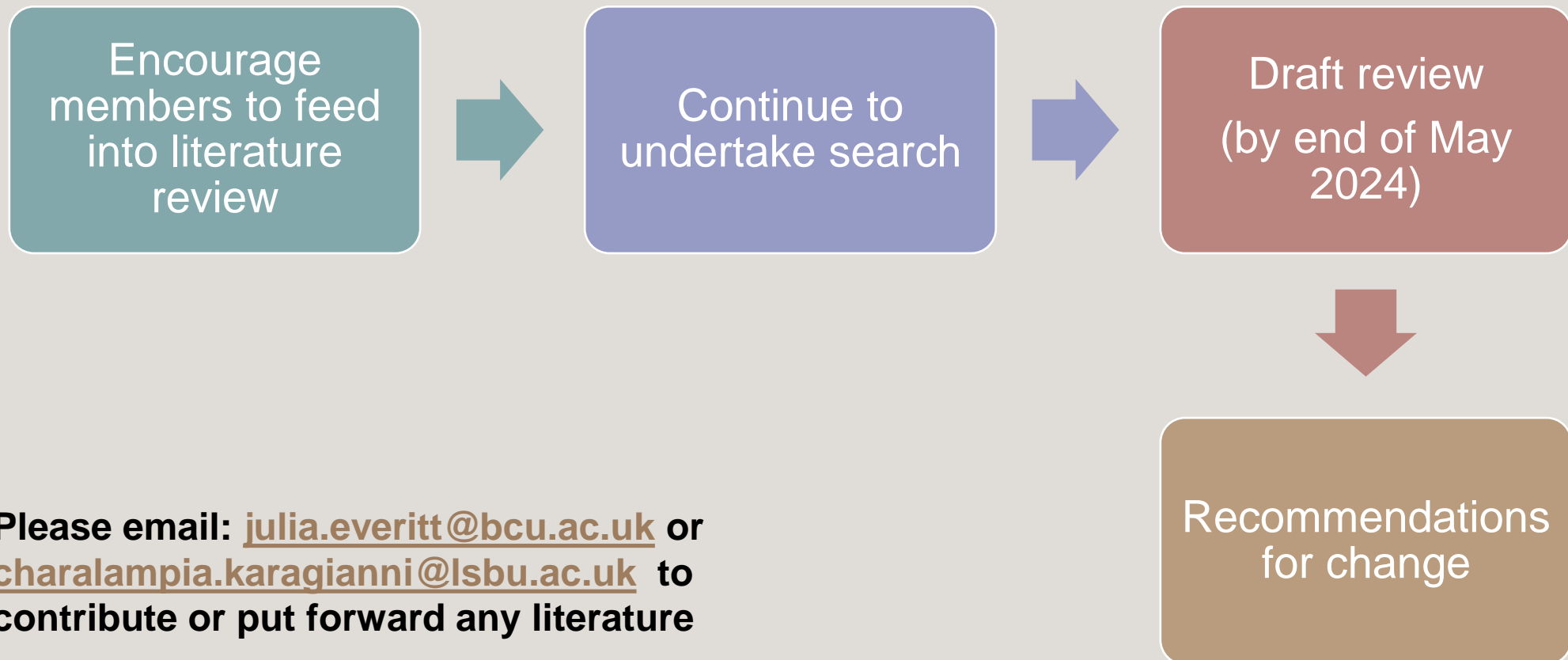
# Limited sources related to STEM



# STEM context specific themes

- The lack of interest of women in the STEM fields itself; (Gunawan et al. 2021)
- Women's confidence to have a career in STEM; (Gunawan et al. 2021)
- Gender-academic stereotypes that occur, where female talent is considered lacking in the STEM fields (Gunawan et al. 2021)
- Gender preferences: Male lecturers preferred above female lecturers in field/university majoring in engineering (Tamba and Chiang, 2021)
- Students in soil science preferred to be taught by men (Fiantis, 2022)
- Labour and education life cycle – barriers, challenges and lack of resources (USAID, 2015)
- Leaky academic pipeline (USAID, 2015)

# Next steps



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