



Exploring the Dynamics of Financial Inclusion

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What was the state of financial inclusion for women and adults with low income in different countries pre & during the first year of the COVID-19 pandemic?



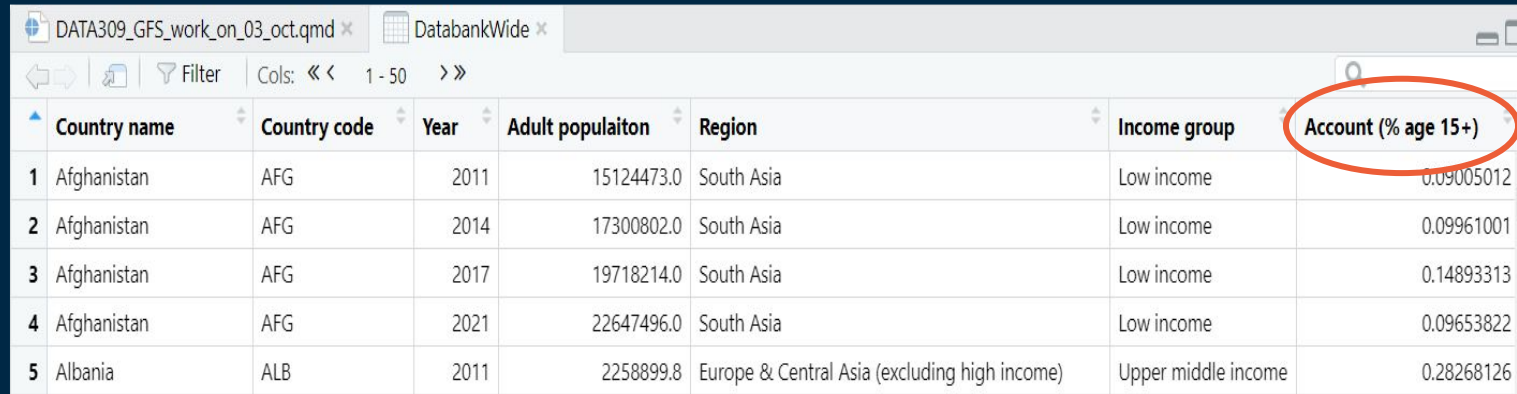
OUR MOTIVATION...

- Financial Inclusion (FI) → Better Health Outcomes
- Pre-Pandemic → Emerging Economies
- COVID-19 → Emphasised Importance of FI
- Women & Poor → MOST Vulnerable



DATA...

- World Bank's Global Findex Database (GFD)
- General, Women, and Low-Income Adults



	Country name	Country code	Year	Adult population	Region	Income group	Account (% age 15+)
1	Afghanistan	AFG	2011	15124473.0	South Asia	Low income	0.09005012
2	Afghanistan	AFG	2014	17300802.0	South Asia	Low income	0.09961001
3	Afghanistan	AFG	2017	19718214.0	South Asia	Low income	0.14893313
4	Afghanistan	AFG	2021	22647496.0	South Asia	Low income	0.09653822
5	Albania	ALB	2011	2258899.8	Europe & Central Asia (excluding high income)	Upper middle income	0.28268126

The Global Findex Database 2021

Methodology...

Table 4. Principal components' correlation with original Global Index variables.

Variable	Comp1	Comp2	Comp3	Comp4
Finance institution account	0.259	-0.030	0.197	-0.027
Borrowed from a financial institution or credit card	0.261	0.009	-0.012	0.155
Saved at a financial institution	0.268	0.058	-0.137	-0.051
Debit card ownership	0.264	-0.008	0.153	-0.056
Credit card ownership	0.263	-0.017	-0.069	0.098
Received wages into financial institution	0.267	-0.012	0.130	-0.011
Paid utility bills using financial institution account	0.267	0.012	0.006	0.053
Outstanding housing loan	0.248	0.080	0.030	0.032
Used the internet for online transaction	0.272	0.066	0.032	-0.021
Received wages through mobile phone	0.061	0.535	0.232	-0.259
Paid utility bills through mobile phone	0.179	0.427	0.081	-0.125
Made or received digital payments	0.264	0.086	0.170	-0.035
Saved for old age	0.255	0.002	-0.190	-0.030
Borrowed for health or medical purposes	-0.193	0.312	0.003	0.023
Coming up with emergency funds: possible	0.194	-0.234	0.014	-0.167
Main source of emergency funds: savings	0.246	-0.020	-0.275	-0.142
Main source of emergency funds: formal loan	0.077	0.173	0.269	0.850
Borrowed from family or friends	-0.163	0.368	0.251	-0.237
Main source of emergency funds: family/friends	-0.134	-0.247	0.620	-0.055
Main source of emergency funds: sale of assets	-0.138	0.361	-0.419	0.202

<https://doi.org/10.1371/journal.pgph.0001137.1004>

Retrieved from: Watkins, T. A., Nguyen, K., Ali, H., Gummakonda, R., Pelman, J., & Taracena, B. (2023). The impact of access to financial services on mitigate COVID-19 mortality globally. PLOS Global Public Health. 3(3), e0001137. 10.1371/journal.pgph.0001137

```
#--- Creating a single variable termed 'fin_inclusion_index'
#--- capturing all weights from Global Public Health article
#--- retrieved from first and second Principal Component
comp1_df3 = comp1_df2 |>
```

```
mutate(fin_inclusion_index = finacc * 0.259 +
  borrowing * 0.261 +
  savings * 0.268 +
  debit_card * 0.264 +
  credit_card * 0.263 +
  housing_loan * 0.248 +
  internet * 0.272 +
  digitalpayment * 0.264 +
  oldagesave * 0.255 +
  medical_needs * 0.312 +
  borrowed_familyfriends * 0.368 +
  emergency_fund * -0.234
)
```

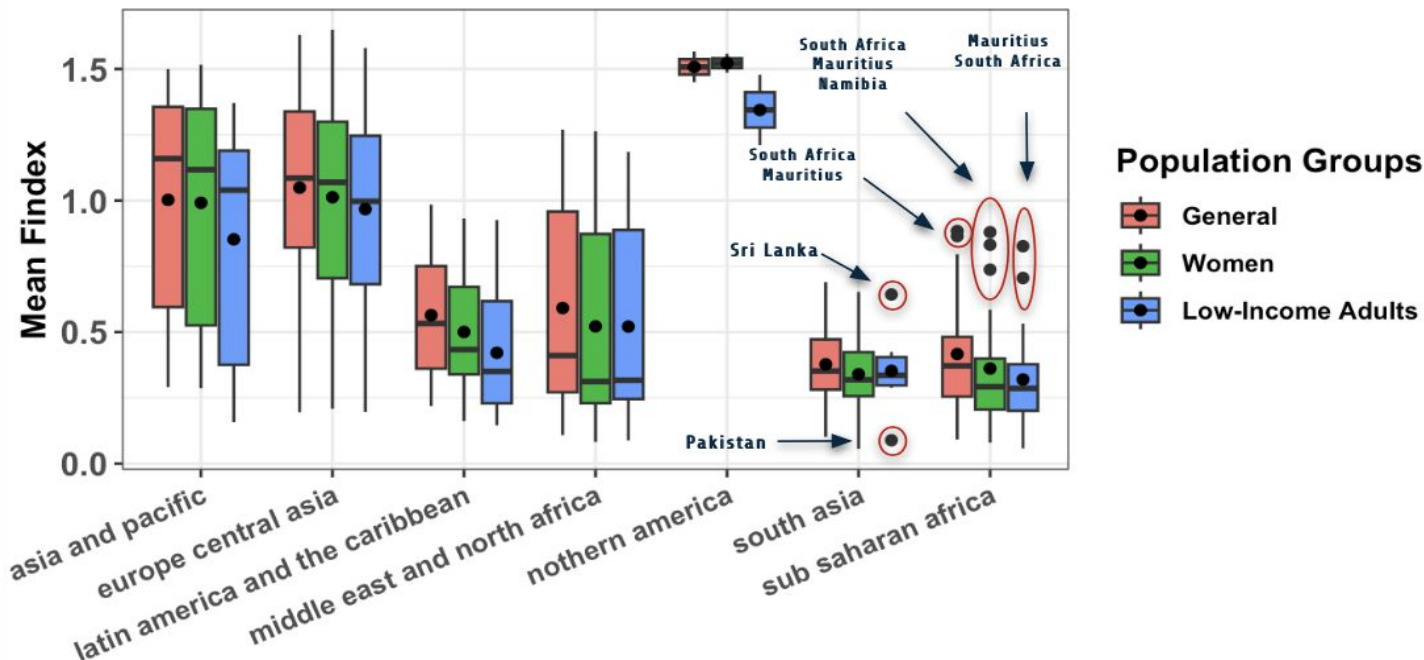
```
names(comp1_df3) ### variable names
#view(comp1_df3) ### view resulting data frame
```

country	year	fin_inclusion_index
South Africa	2017	0.77531445
South Africa	2021	0.88406032
South Sudan	2017	0.26856978
South Sudan	2021	0.09178656

Analysis of Regional Groups...

Mean Financial Inclusion Index for All Focus Groups

by Region | 2021



Countries by Region

Data: Global Findex Database, The World Bank 2023

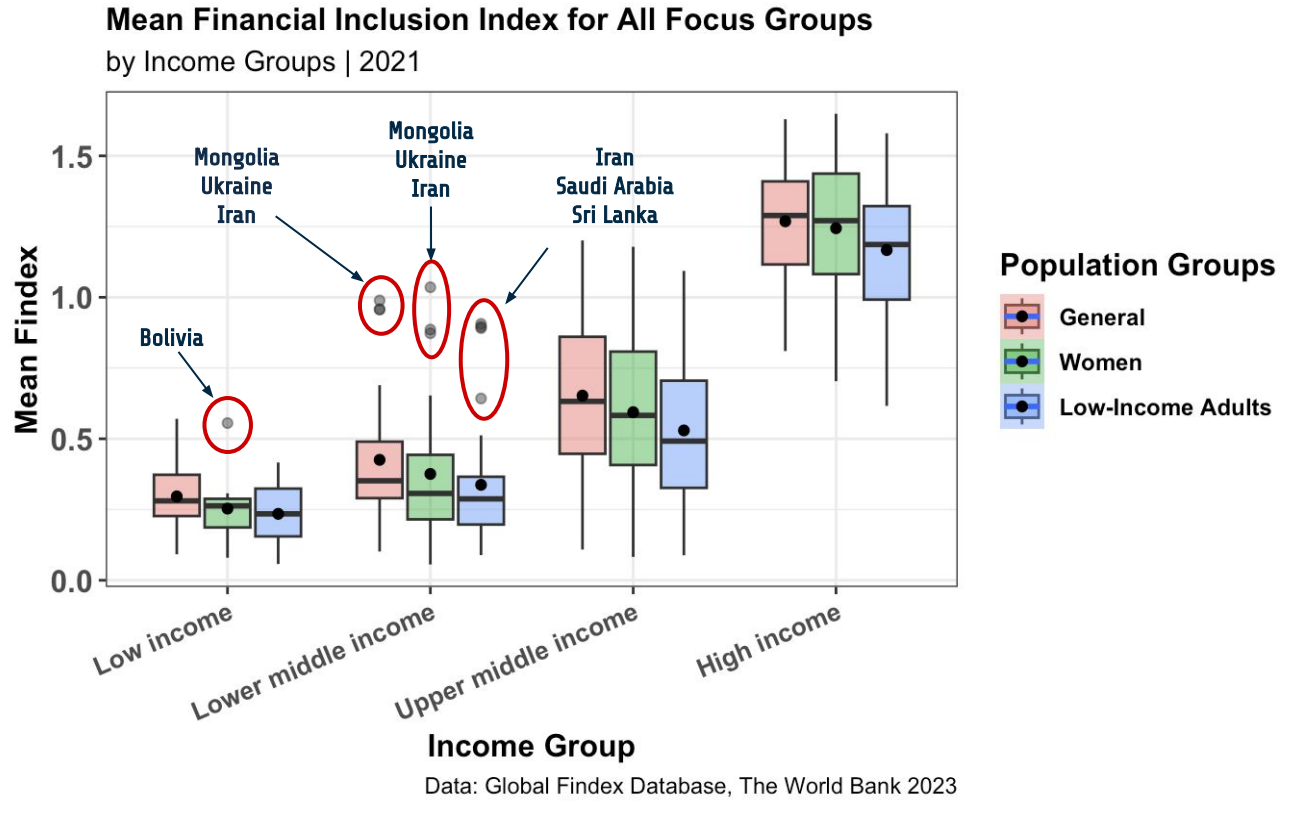
Varying Results

Outlying Countries

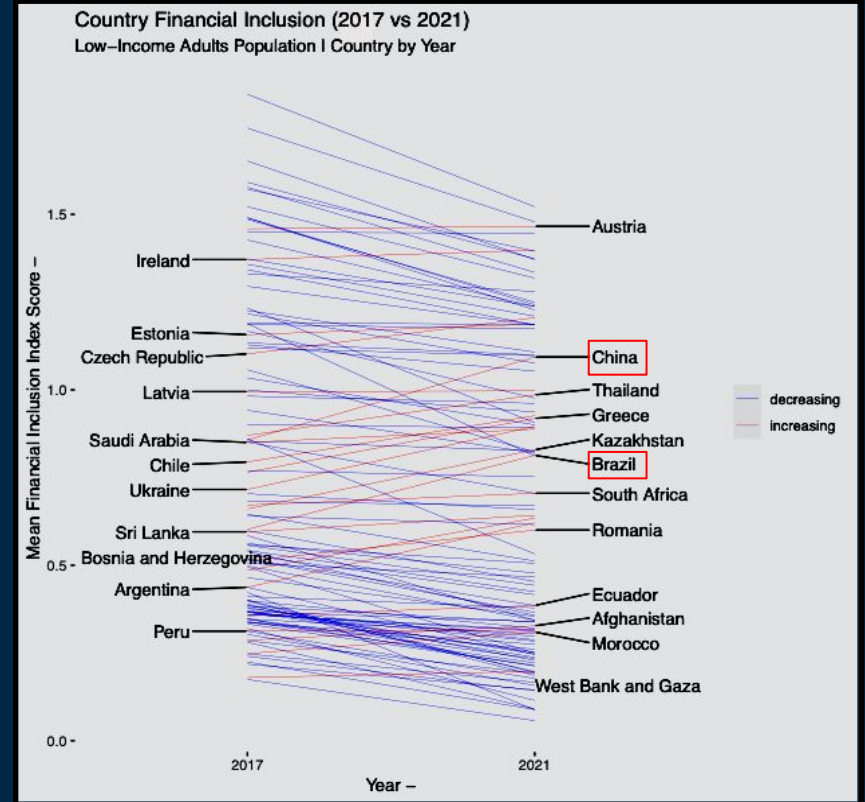
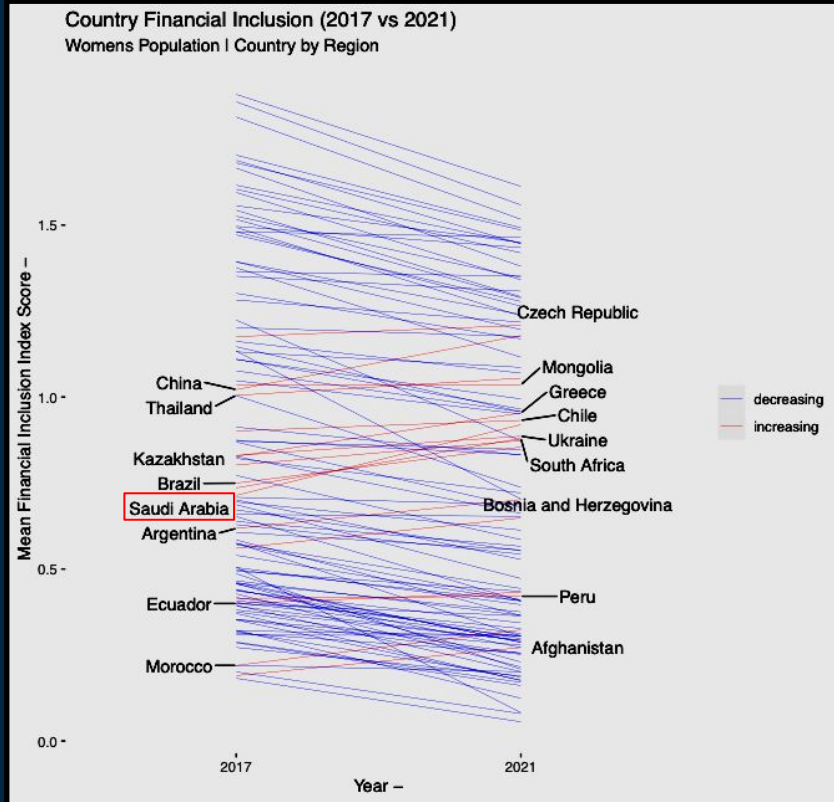
Consistent pattern of decreasing FI scores

Analysis of Income Groups...

- Most frequent in Lower-Middle Income Group
- Mean Scores Pattern
- Positive Correlation
- Why are these countries positioned higher?



Analysis of Slope Charts...



Looking Ahead...

Persistent Disparities



Future Analysis & Case studies



FINTECH Revolution





Pātai? Questions?

Thank You!

