

Forecasting Methods and Higher Education Enrollment in Egypt (2008-2012)

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Agenda:

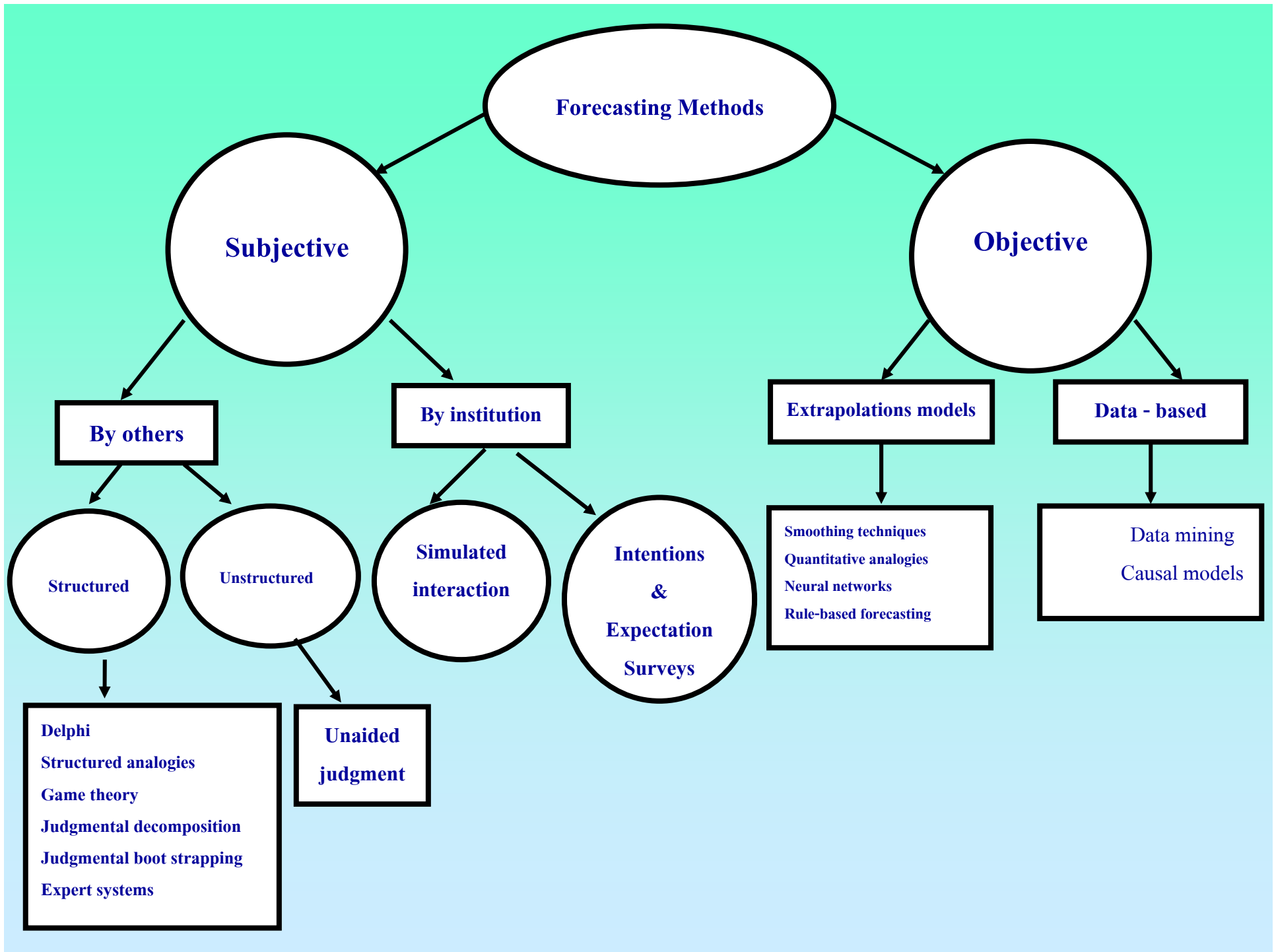
- 1- Objective of the study.
- 2- Background.
- 3- Methodology.
- 4- Results.
- 5- Conclusion.

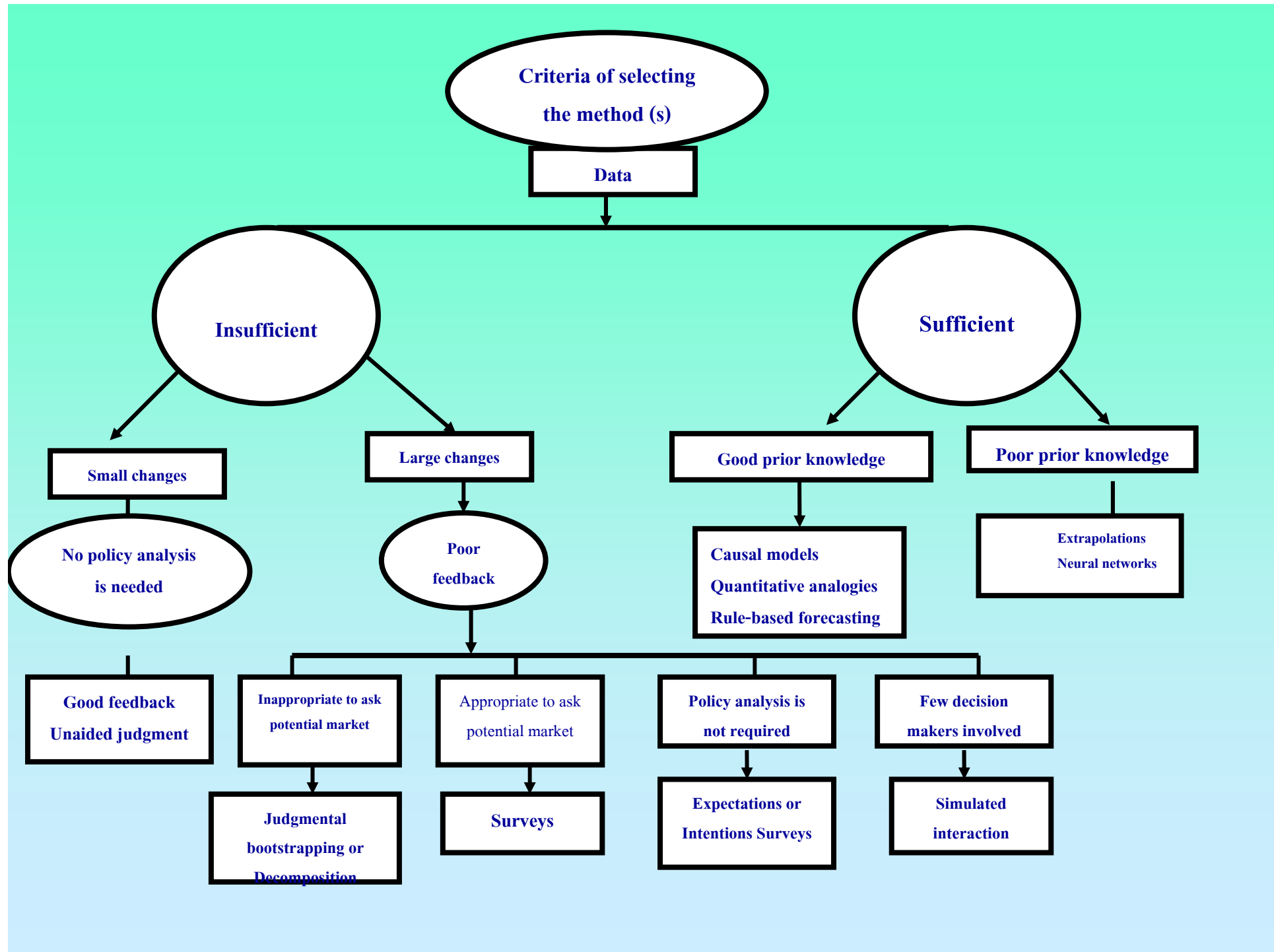
1- Objective of the study:

- Providing brief description of forecasting methods.
- Reviewing the available literature on the main determinants of higher education enrollment.
- Predicting enrollment rate in Egypt for the period (2008-2012).

2- Background:

- Forecasting is a technique to estimate, based on historical statistics, expectations, trends, and/or experience, a certain value of an uncontrollable variable for a certain future period of time.





Determinants of Higher Education Enrollment

Most of the studies use the objective methods based on developing econometrics, trend and simulation models.

Determinants:

- Cohort size (-).
- Cost and finance (Tuition fees + Opportunity cost).
- Unemployment rate (+).
- Marriage rate & Gender(-).
- The expected return (+).
- Other variables (Military service (-), Family background (+)).

Higher Education in Egypt

- There is no study on the determinants of HEE.
- The education is free from basic to HE.
- HEE depends on the admission policy.
- Since 2000, the Egyptian government is facing large number of challenges in the field of higher education locally and globally.
- The higher education institutions were taking number of actions to deal with these challenges.

3- Methodology:

- The methodology used to produce the forecasted HEE is based on using the exponential smoothing techniques and trend model to get the predicted values of enrollment rates.
- The predicted values of enrollment rate are then multiplied by the population age group 18-23 projections of CAPMAS in Egypt to arrive at total enrollment projections.
- The forecasting will be on three levels: total, male and female using EViews software.

Data

- The data of HEE in the period (2003-2007) on the aggregate level comes from Strategic Planning Unit at Ministry of Higher Education.
- the population age group 18-23 projections comes from CAPMAS

4- Results: Total Enrollment Projections (2008-2012) M+F

Year	Exponential Smoothing			Trend
	Single	Double	Holt- Winters	
2008	2441419	2514076	2521191	2492963
2009	2422565	2531653	2546491	2500960
2010	2403873	2548825	2571269	2508702
2011	2385289	2565543	2595473	2516138
2012	2390510	2607660	2645332	2548533
Growth Rate (2008-2012)	-2.09%	3.72%	4.92%	2.23%

Total Enrollment Projections (2008-2012) M

Year	Exponential Smoothing			Trend
	Single	Double	Holt- Winters	
2008	1325532	1362666	1377484	1343267
2009	1315296	1369584	1399565	1339816
2010	1305147	1376324	1421231	1336347
2011	1295058	1382858	1442459	1332833
2012	1297892	1403095	1477901	1342581
Growth Rate (2008-2012)	-2.09%	2.97%	7.29%	-0.05%

Total Enrollment Projections (2008-2012) F

Year	Exponential Smoothing			Trend
	Single	Double	Holt- Winters	
2008	1131673	1150817	1143838	1149696
2009	1122933	1161845	1147057	1161144
2010	1114269	1172643	1150167	1172355
2011	1105655	1183187	1153142	1183305
2012	1108075	1205429	1167560	1205953
Growth Rate (2008-2012)	-2.09%	4.75%	2.07%	4.89%

Conclusion

- The best techniques selected in the forecasting are Holt-Winters and double exponential smoothing techniques in all cases except the female case, the double and trend model are the best.
- The study did not develop econometric model capturing the unemployment rate and cost of studying for example because the enrollment rate in Egypt considers an exogenous variable determined by the admission policy.

Thanks so much for your attention

Q&A

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