The Early Learning Programme Outcomes Study (ELPO)

RESEP EARLY LEARNING WORKSHOP STIAS 2019

Dawes, A., Biersteker, L., Girdwood, L., Snelling, M. and Horler, J. (2019). Early Learning Programme Outcomes Study Technical Report. Claremont Cape Town: Innovation Edge (www.innovationedge.org.za) and Ilifa Labantwana (www.ilifalabantwana.co.za)

elom
early learning outcomes measure

ALACRITY
development

University of Cape Town · iYunivesithi yaseKapa · Universiteit van Kaapstad

INNOVATION EDGE

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UNIVERSITY OF OXFORD

AGENDA

- Background to the study
- Research Questions
- Methodology (participants; instruments; process; baseline endline process)
- Some Descriptive Findings
- Answering the questions: Multilevel Modelling
- Limitations
- Implications

BACKGROUND:

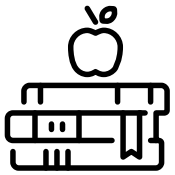
KEY FEATURES OF ELP EFFECTIVENESS

QUALIFICATIONS, RATIOS AND CLASS SIZE:

- **Teacher training:** important but qualifications alone do not necessarily make a difference.
- Teachers need **specific training in hands-on activities and interactions.**
- Ratio and class size **not as important** as previously thought (cultural variation).

PROGRAMME EXPOSURE: Sessions and length of enrolment

- **Higher dosage** (hours) associated with greater cognitive gains especially for low income children (15 – 30 hrs/wk)
- 2 years assoc with better academic skills on exit from preschool and at end of kindergarten than one (Head Start)



BACKGROUND:

KEY FEATURES OF ELP EFFECTIVENESS

CURRICULUM:

1. **Higher quality instruction**: associated with *gains in language* and literacy skills/*maths*;
2. **School readiness curriculum** focused on specific **school readiness skills** (but not just maths and language) *is more effective than a whole child curriculum* (Pre-K USA evidence);
3. Provide **Age appropriate**, engaging activities focused explicitly on identified outcomes.
4. Effective learning activities must be cumulative and sequenced to *align with children's developmental stages*; Different capabilities and areas of achievement require **different kinds of scaffolding at different ages;**
5. **Play pedagogy** (promoted by DBE) must include:
   a) *free child initiated* play;
   b) *adult guided* play;
   c) more *formal teacher designed* games with rules.

BACKGROUND:

KEY FEATURES OF ELP EFFECTIVENESS :

HOW DOES SA MEASURE UP?

1. Few SA studies on ELP quality
2. **2010 W Cape ECD site Quality study** (ITERS & ECERS scales) (10% site random sample):
   - On ave, sites scored in the **Minimal Adequacy** range for *Activities (*stimulation), *Language* and *Total* ITERS & ECERS;
   - Predictors of ECERS & ITERS: management quality and fees;
   - Poorer children attended facilities with lower ITERS & ECERS scores.
3. **2010 PETS Study quality index** (infrastructure, LTSM, Daily programme (including activities):
   - better quality classes for children in top 3 quintiles
4. **Rural Nkomazi Integrated ECD initiative** study of supported ECD centres and playgroups: Intervention: training on curriculum implementation; support and oversight; provision of manipulatives & books:
   - Quality scores (adapted ECERS/ITERS/Mangmt) improved by a third

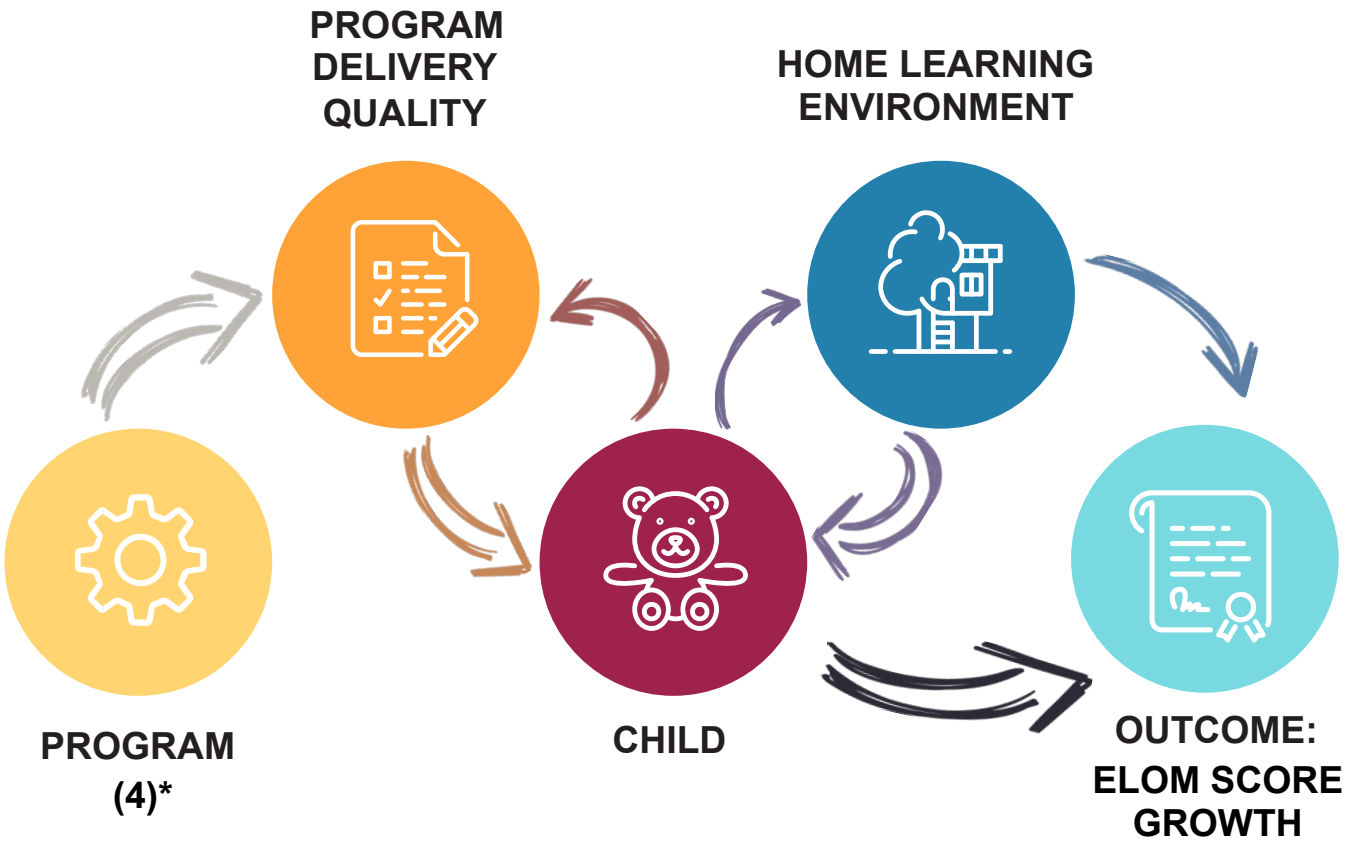
RESEARCH QUESTIONS

1. How do different ELP interventions, targeting three- to five-year-old children from low-income backgrounds, vary in their effectiveness in preparing children for Grade R (as measured by the ELOM)?

2. What programme, child, and home environment factors predict changes in ELOM scores following exposure to an early learning programmme?

METHOD 1 DESIGN:

PREDICTORS OF EARLY LEARNING OUTCOMES



METHOD 2 DESIGN:

QUASI-EXPERIMENTAL FIELD STUDY

BASELINE FEBRUARY-MARCH 2018	INTERVENTIONS (HRS / WEEK) (all in policy)	ENDLINE OCTOBER-NOVEMBER 2018
CHILD ELOM scores	**PLAYGROUP Lesedi Mobile (2.5 HRS/WK)**	CHILD: ELOM scores HFA
	PLAYGROUP LETCEE (6 – 15 HRS/WK) (Excluded from MLM)	
	PLAYGROUP Cotlands (8 HRS/WK)	HOME LEARNING ENVIRONMENT: Caregiver age and education; activities with the child
	ECD CENTRE DEVELOPMENT Ntataise (22.5 HRS/WK)	
	ECD CENTRE DEVELOPMENT TUC 15-22 hrs(/WK)	PROGRAMME QUALITY: Practitioners sites & support

METHOD 3: MLM VARIABLES

CHILDREN
Age at baseline
ELOM baseline and endline scores
Programme exposure (total sessions attended)
Years in programme
Height for Age
PROGRAMME
Child/practitioner ratio
Practitioner satisfaction with resources
Practitioner satisfaction with support
Practitioner experience
Practitioner ECD qualifications
HOME LEARNING ENVIRONMENT
Caregiver Education
Home Early Learning Opportunity (time available and time spent on activities)
Home Early Learning Resources: Books and Toys
Quintile

METHOD 4: SAMPLING

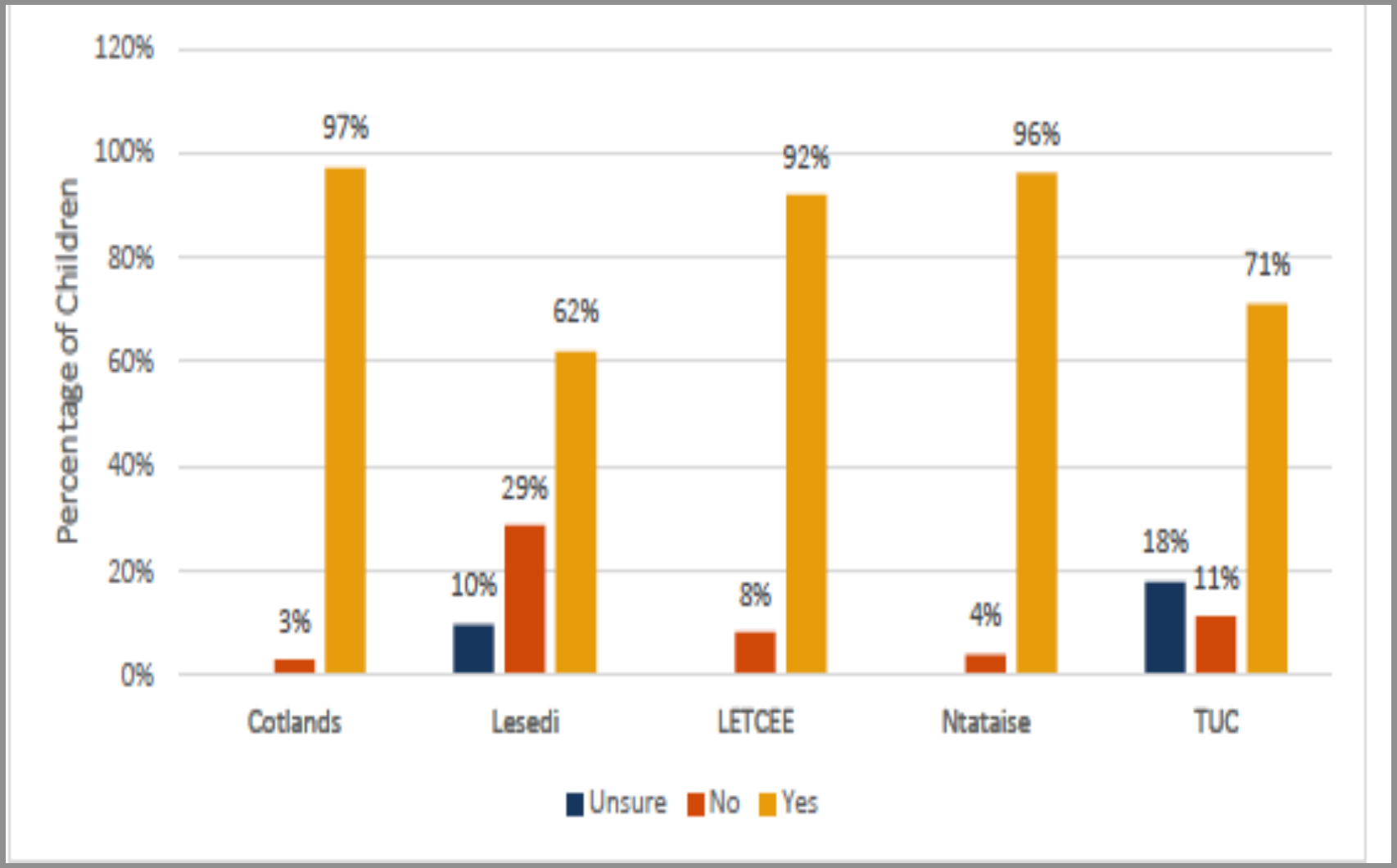
- SELECTION PROGRAMME ECD SITES WITHIN CLUSTERS:
  - *Only* sites with practitioner quality rated in the upper range of organisations' PQA systems were included.
  - Clusters of geographically proximal programme sites within one hour travel from field staff accommodation were established;
  - Random selection of sites in **3** programme site clusters; all sites selected in 2 (small number of sites).
- SELECTION OF CHILDREN:
  - Random within each site for **4** programmes;
  - Convenience in each site for **1** programme (to enrol sufficient age eligible children).
- SELECTION OF CAREGIVERS:
  - Caregivers of <u>all</u> study children were asked to consent to interview;
  - Valid data for **327**(**89%**) obtained.

METHOD 5:
CHILD SAMPLE & ATTRITION

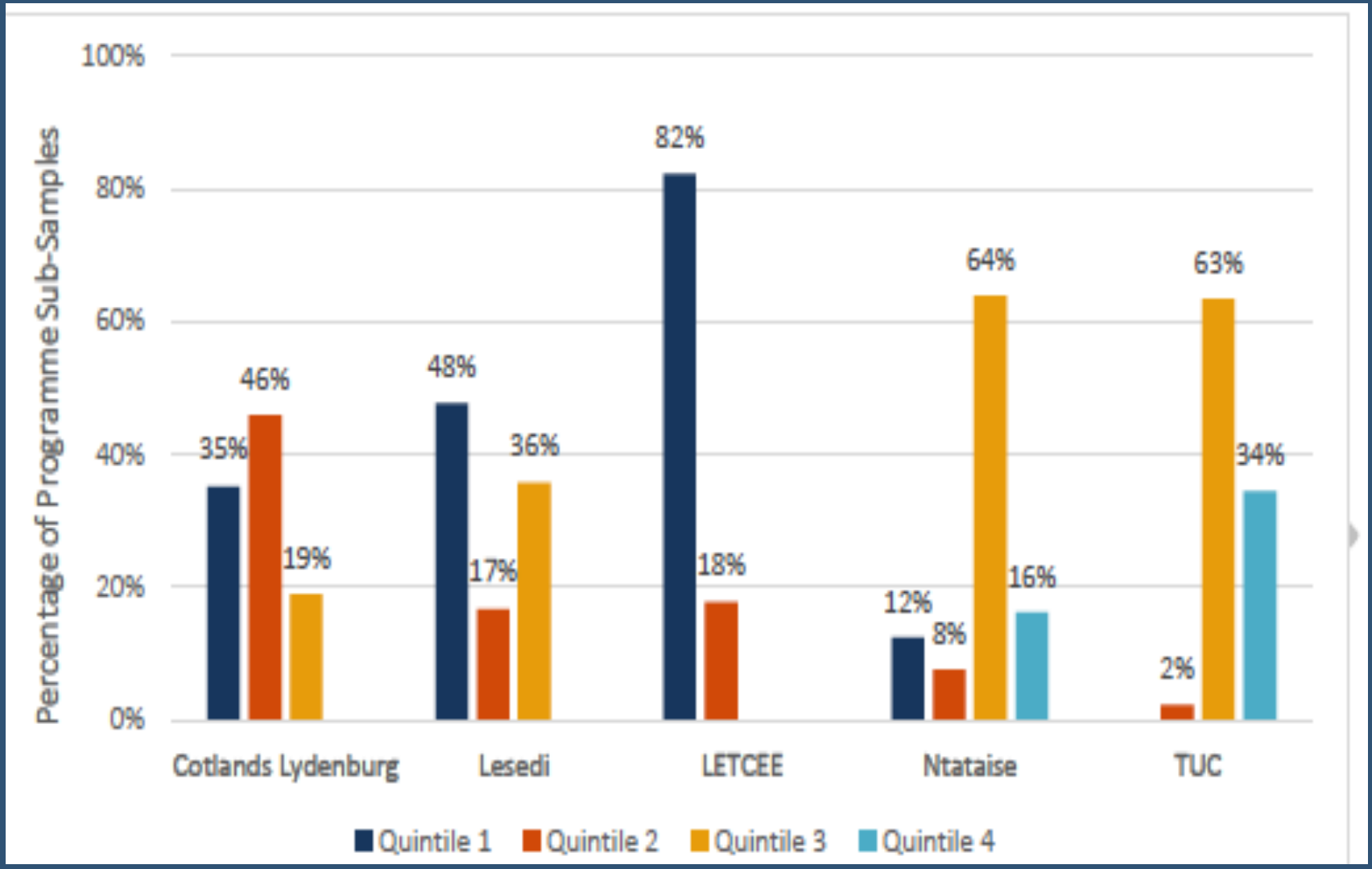
Programme	Target	Baseline Realised	Endline Realised	Attrition (Baseline - Endline) %
CENTRE DEVELOPMENT	226	242	195	19%
Unlimited Child	113	102	90	12%
Ntataise Enrichment	113	140	105	25%
PLAYGROUPS	339	240	175	27%
LETCEE(SmartStart)	113	76	62	18%
LESEDI	113	74	42	43%
Cotlands	113	90	70	22%
TOTALS	565	482	369	23%

AVE AGE (months) BASELINE = 54.34; ENDLINE = 62.20
GENDER 50/50 M/F
LANGUAGES: Afrikaans 9% isiZulu 41% Sesotho 40% SePedi 4%
PROVINCES: WC Mp FS KZN

SAMPLE POVERTY INDICATORS 1:
CSG ACCESS



SAMPLE POVERTY INDICATORS 2:
SITE QUINTILES



POWER

- Sample size enables detection of an effect **of 0.20 with a power = 0.88, and an effect of 0.23 with power = 0.95.**

- Both sufficient for the complexity of the statistical model that tested a single interaction with a 2x5 structure: *ELOM Assessment(time) * programme* while controlling for the hierarchy present in the data.

DATA COLLECTION

Child assessments and caregiver and practitioner interviews conducted by trained personnel.

EARLY LEARNING OUTCOMES MEASURE
WHAT THE ELOM MEASURES

Direct Assessment Domains

- Gross Motor Development (GMD)
- Fine Motor Coordination & Visual Motor Integration (FMC&VMI)
- Emergent Numeracy & Mathematics (ENM)
- Cognition & Executive Functioning (CEF)
- Emergent Literacy & Language (ELL)
- Assessor rating of Task Orientation

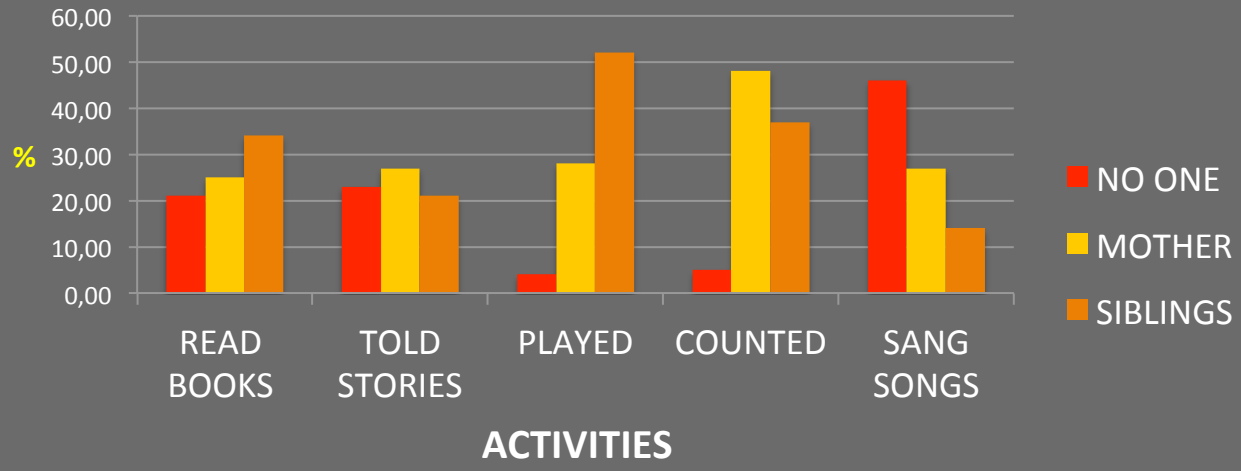
23 ITEMS

DESCRIPTIVE FINDINGS 1:

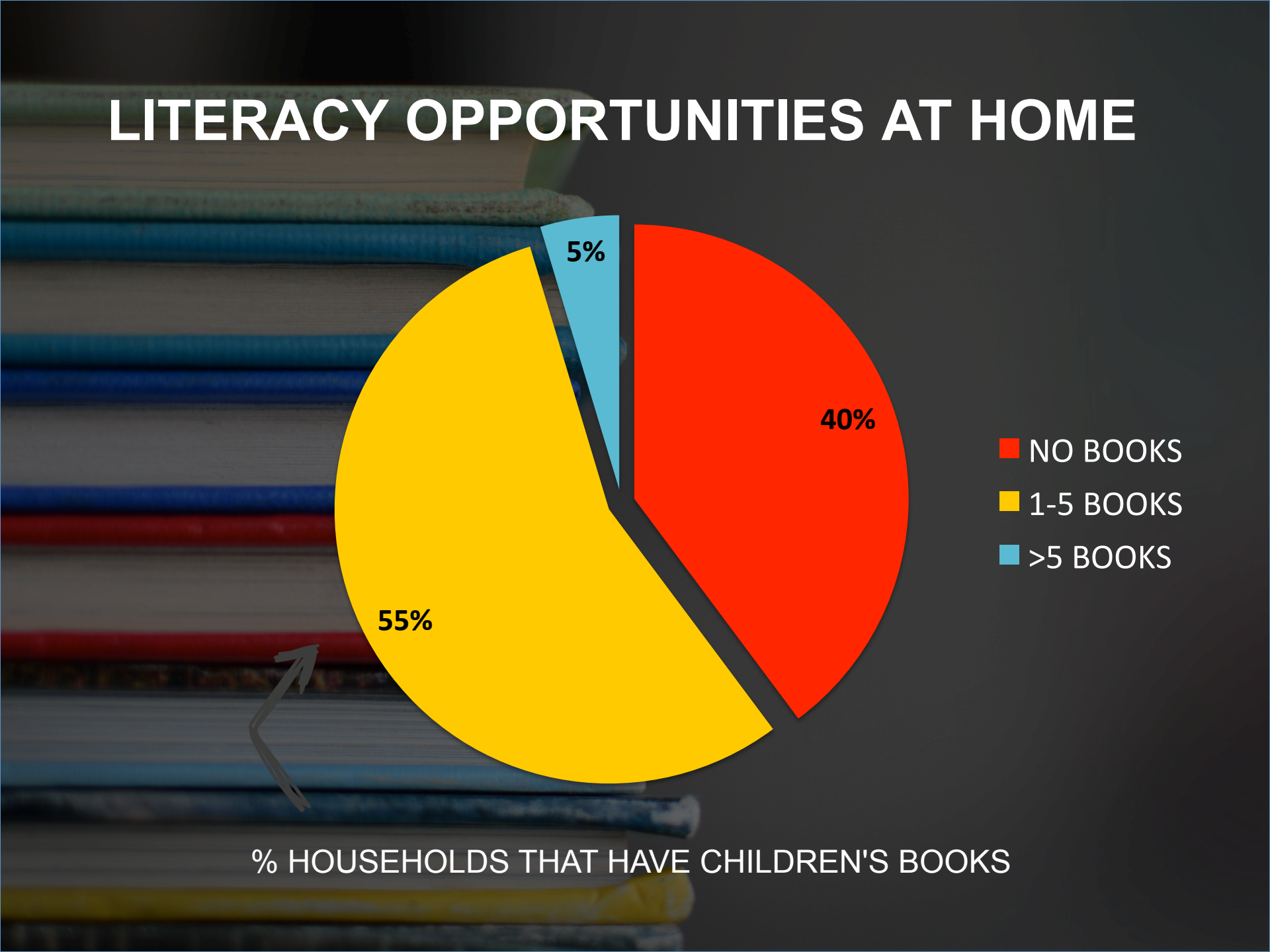
OPPORTUNITIES FOR LEARNING AT HOME

CAREGIVER TIME AVAILABLE FOR ACTIVITIES WITH CHILDREN

PARTICIPATION IN ACTIVITIES WITH THE CHILD IN THE PAST WEEK

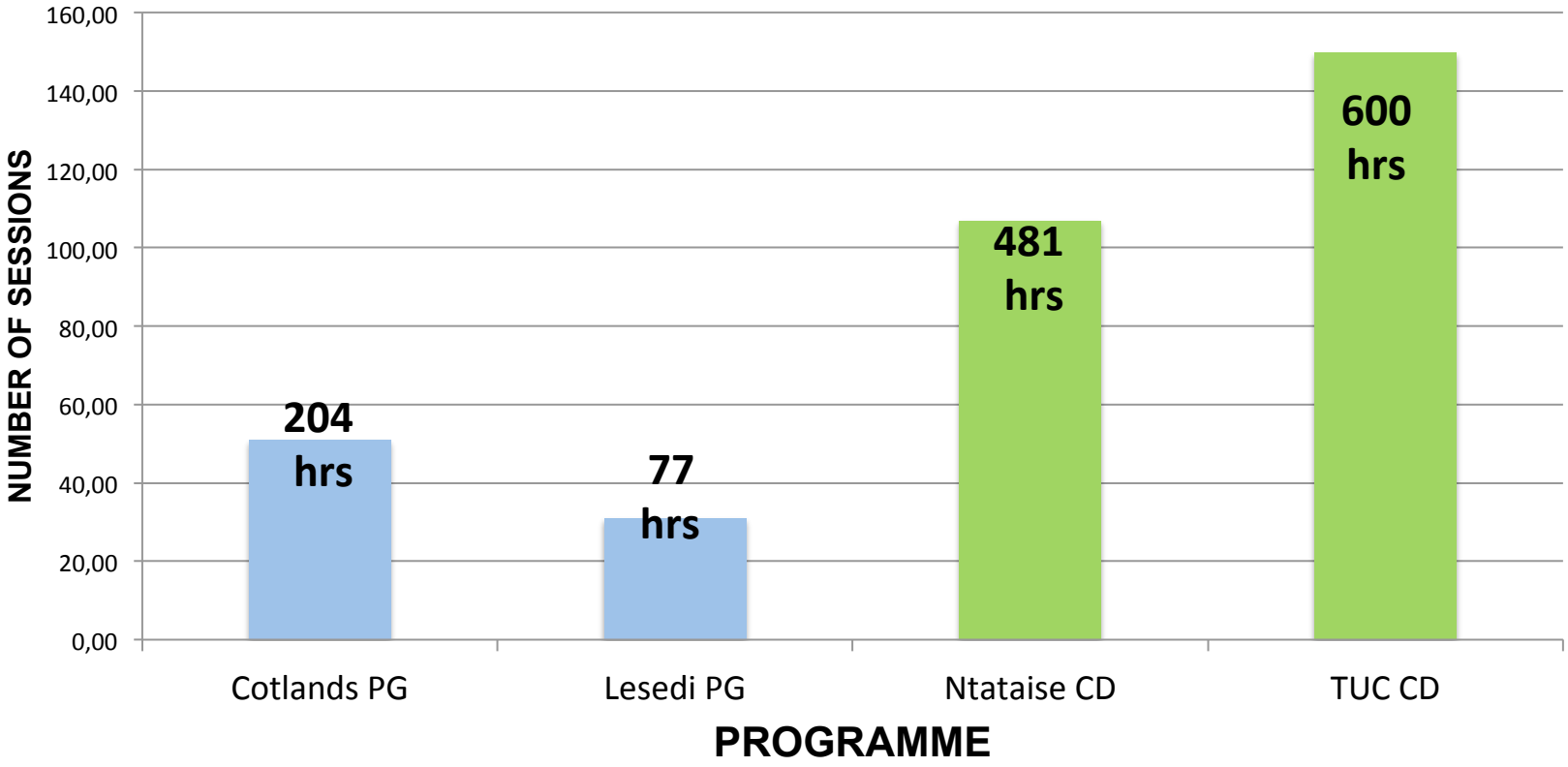


LITERACY OPPORTUNITIES AT HOME



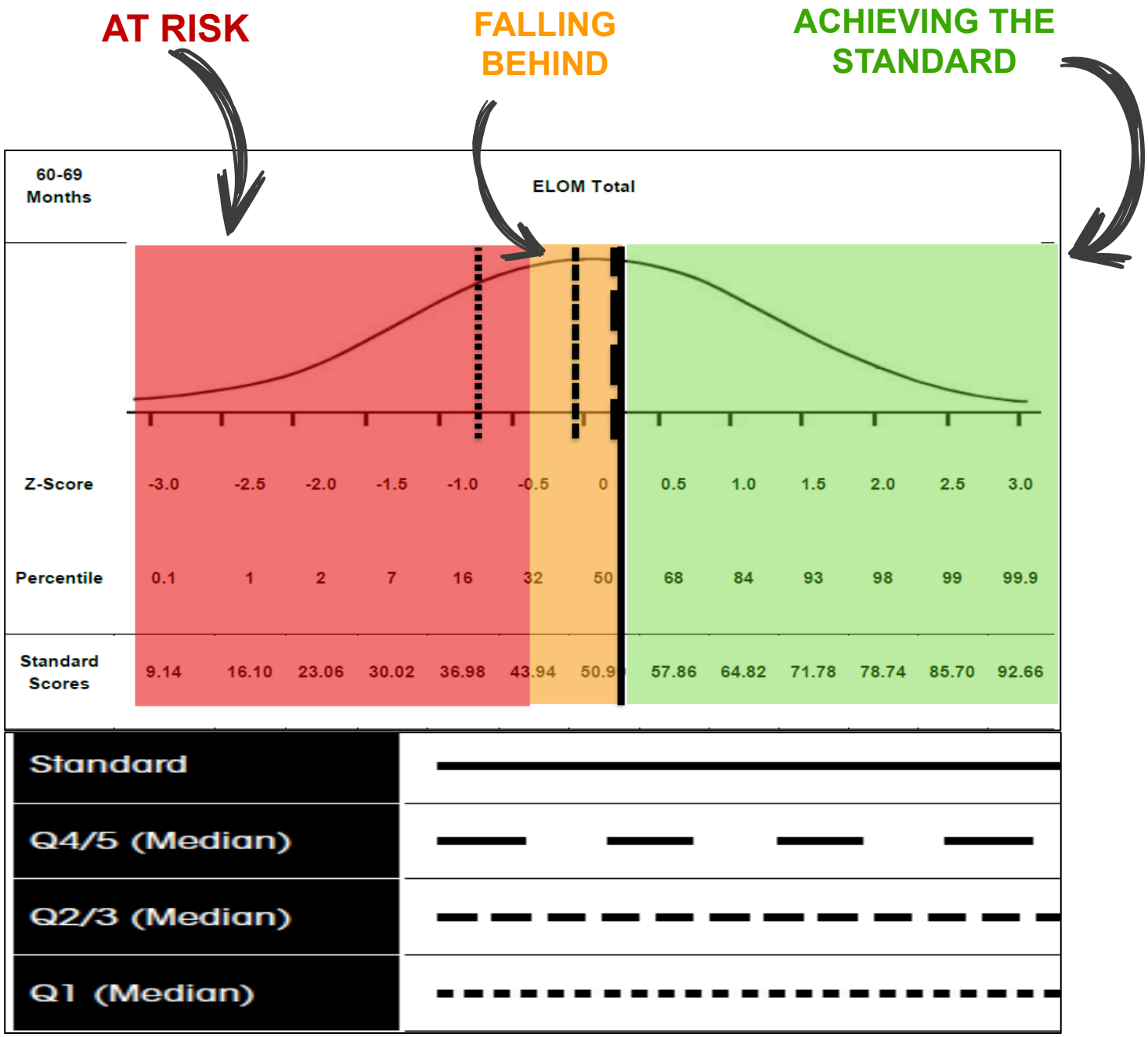
% HOUSEHOLDS THAT HAVE CHILDREN'S BOOKS

DESCRIPTIVE FINDINGS 2



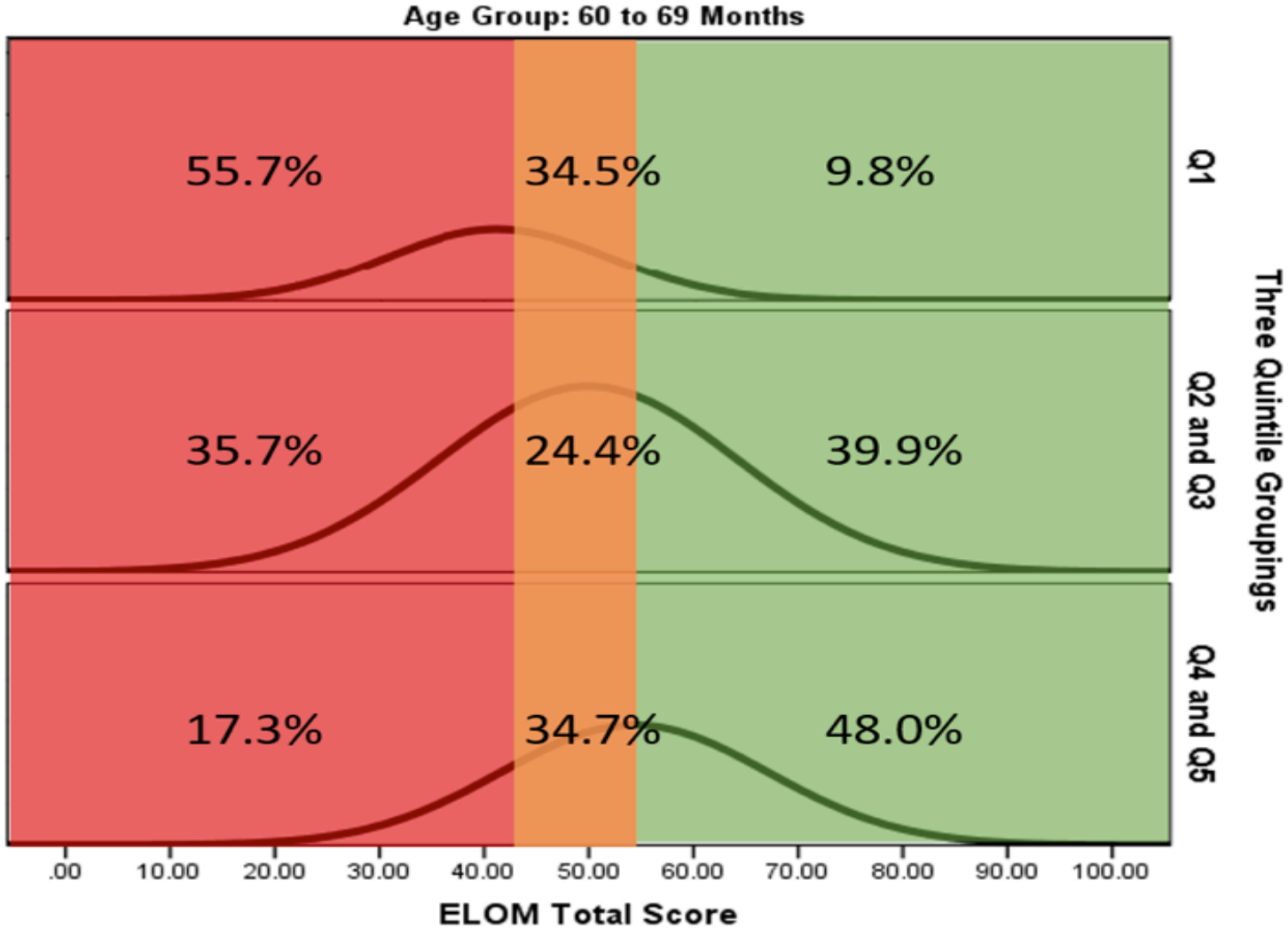
ELOM STANDARDS PROFILES BASED ON STANDARDISATION SAMPLE

For more on ELOM see: elom.org.za


AT RISK
FALLING BEHIND
ACHIEVING THE STANDARD
60-69 Months
ELOM Total
Z-Score
-3.0
-2.5
-2.0
-1.5
-1.0
-0.5
0
0.5
1.0
1.5
2.0
2.5
3.0
Percentile
0.1
1
2
7
16
32
50
68
84
93
98
99
99.9
Standard Scores
9.14
16.10
23.06
30.02
36.98
43.94
50.9
57.86
64.82
71.78
78.74
85.70
92.66
Standard
Q4/5 (Median)
Q2/3 (Median)
Q1 (Median)

SES GRADIENT:

ELOM PROFILE VARIATION BY SCHOOL QUINTILE



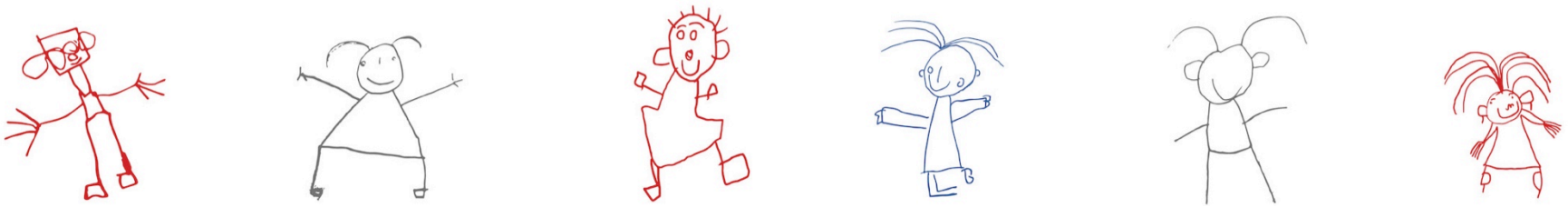
DESCRIPTIVE FINDINGS 3:

CHANGE IN ELOM PERFORMANCE USING ELOM PROFILES

STUDY FINDINGS:

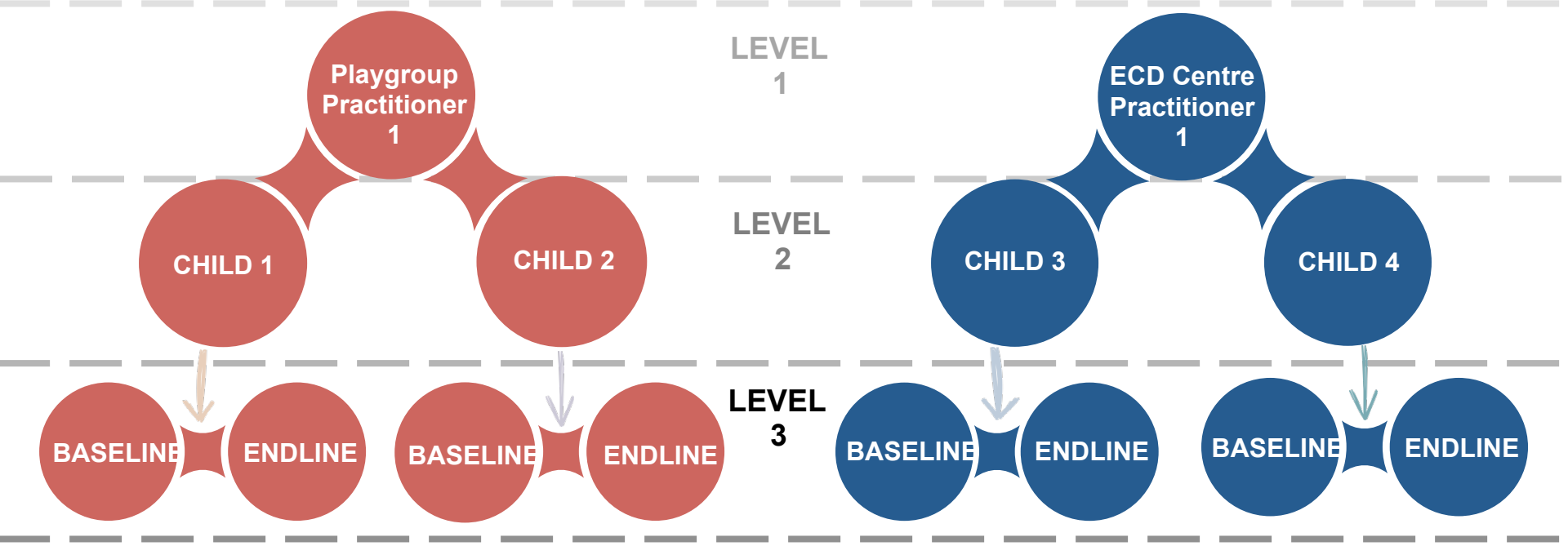
CHANGE IN ELOM TOTALSTANDARD SCORES

PROGRAMME / ARM	BASELINE ELOM	ENDLINE ELOM	CHANGE
PG Cotlands 8 hrs/wk	32.6	52.6	20.0
PG Lesedi 2.5 hrs/wk	36.9	50.1	13.2
PG LETCEE(SmartStart) 6- 15 hrs/wk	33.9	47.7	13.8
CD Ntataise 22.5 hrs/wk	49.8	66.9	17.1
CD TUC 22.5 hrs/wk	37.8	61.5	23.7

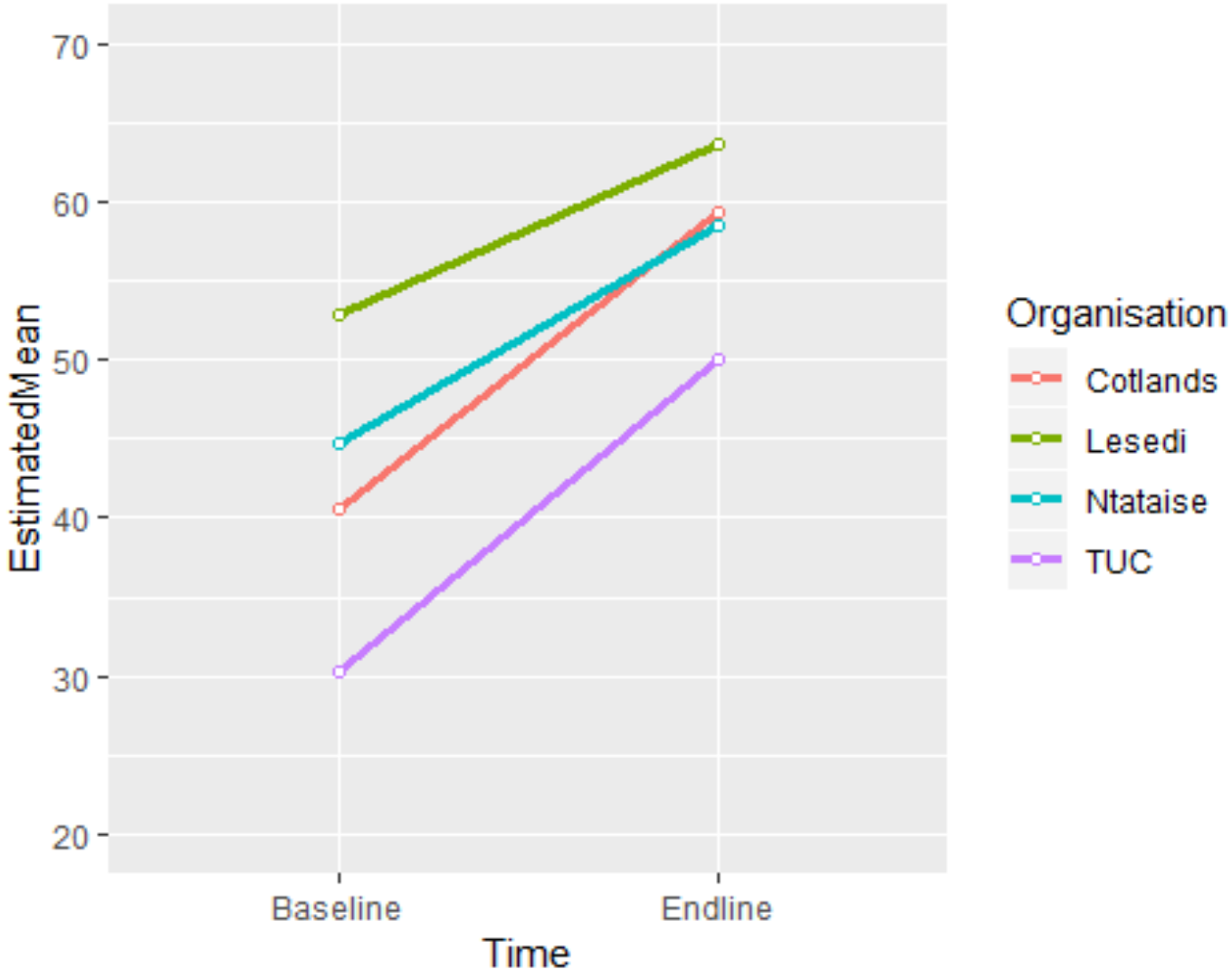


ANSWERING THE QUESTIONS:

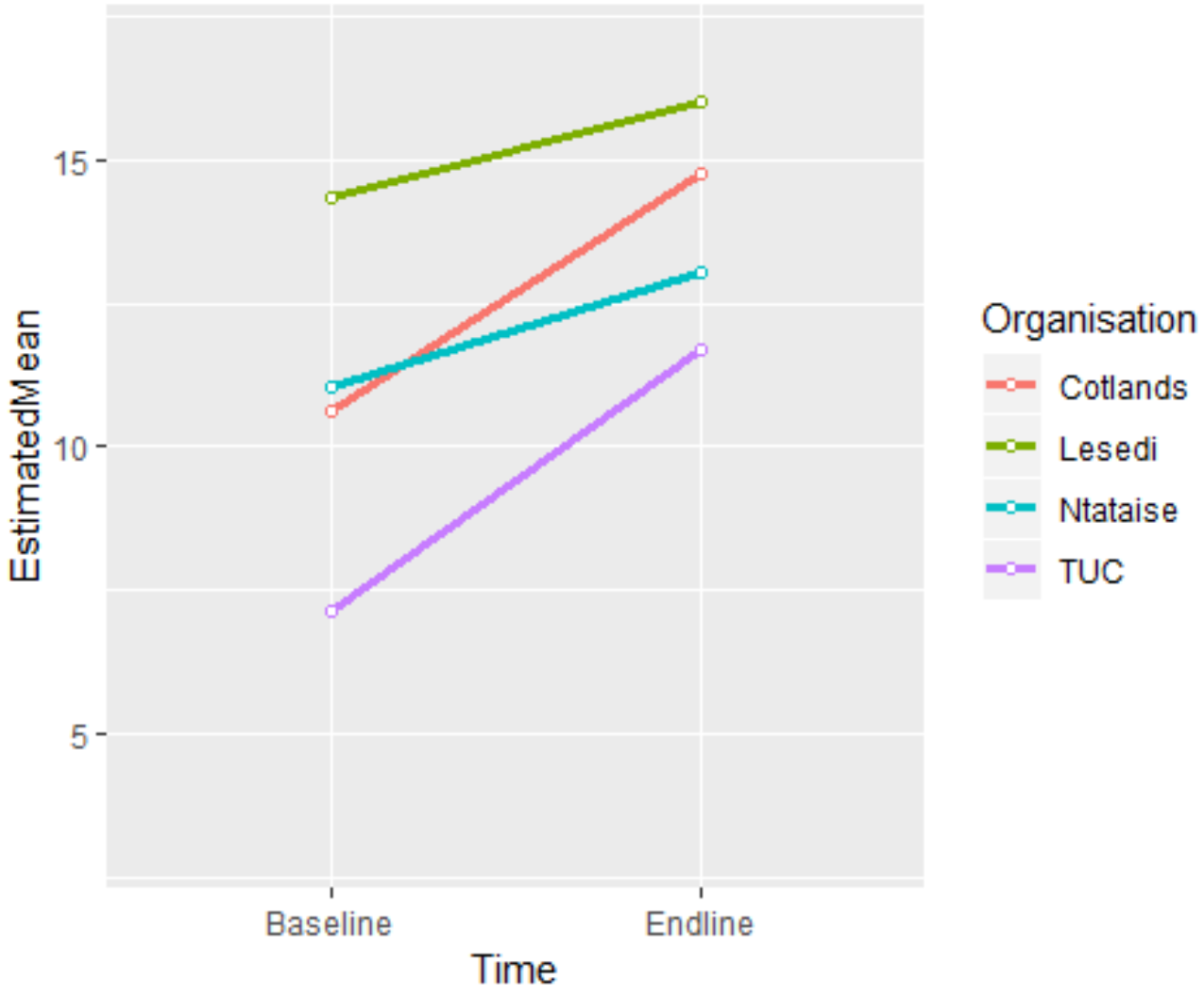
MULTILEVEL MODELLING



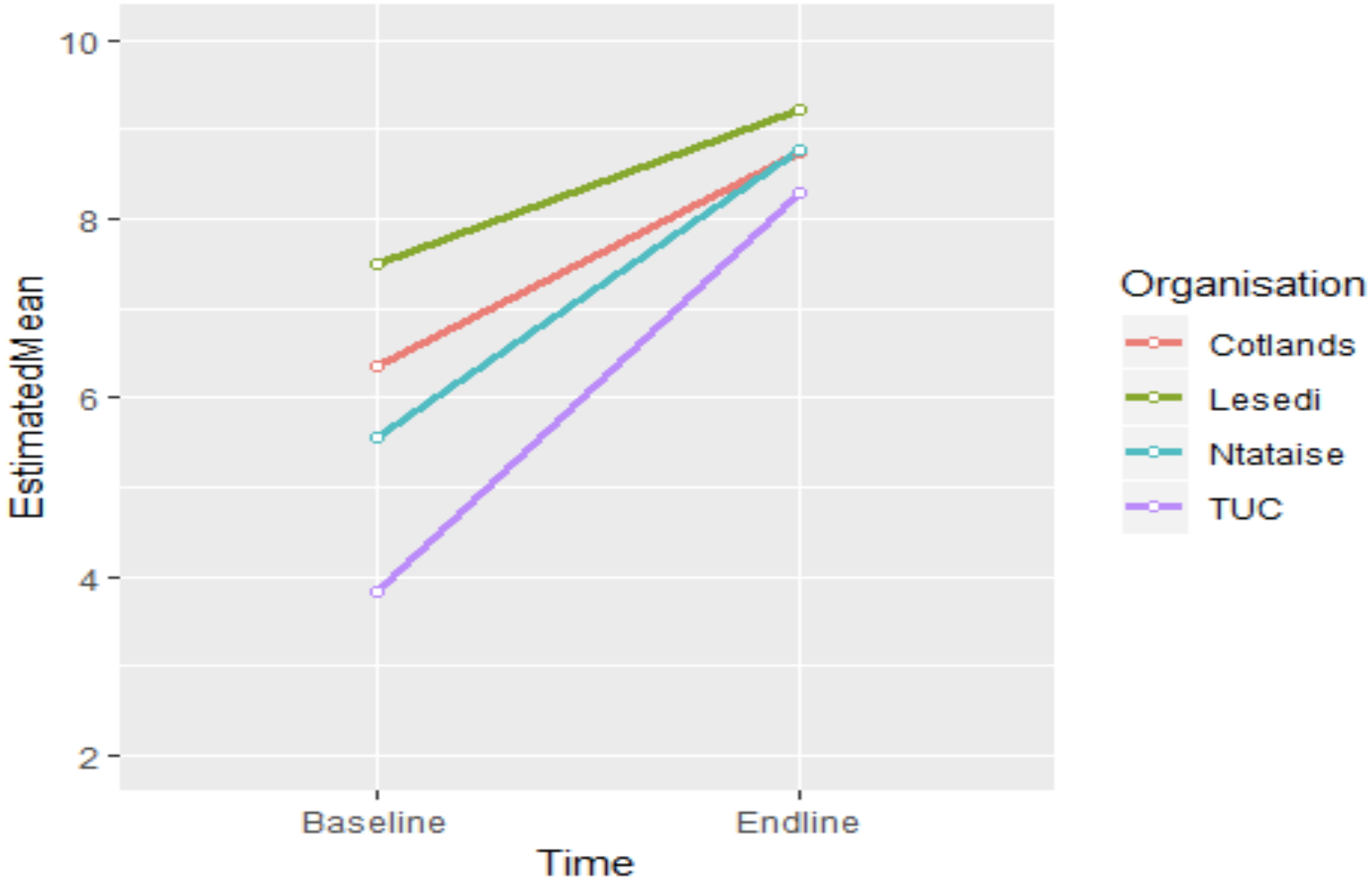
ELOM TOTAL


70
60
50
40
30
20
EstimatedMean
Baseline
Endline
Time
Organisation
Cotlands
Lesedi
Ntataise
TUC

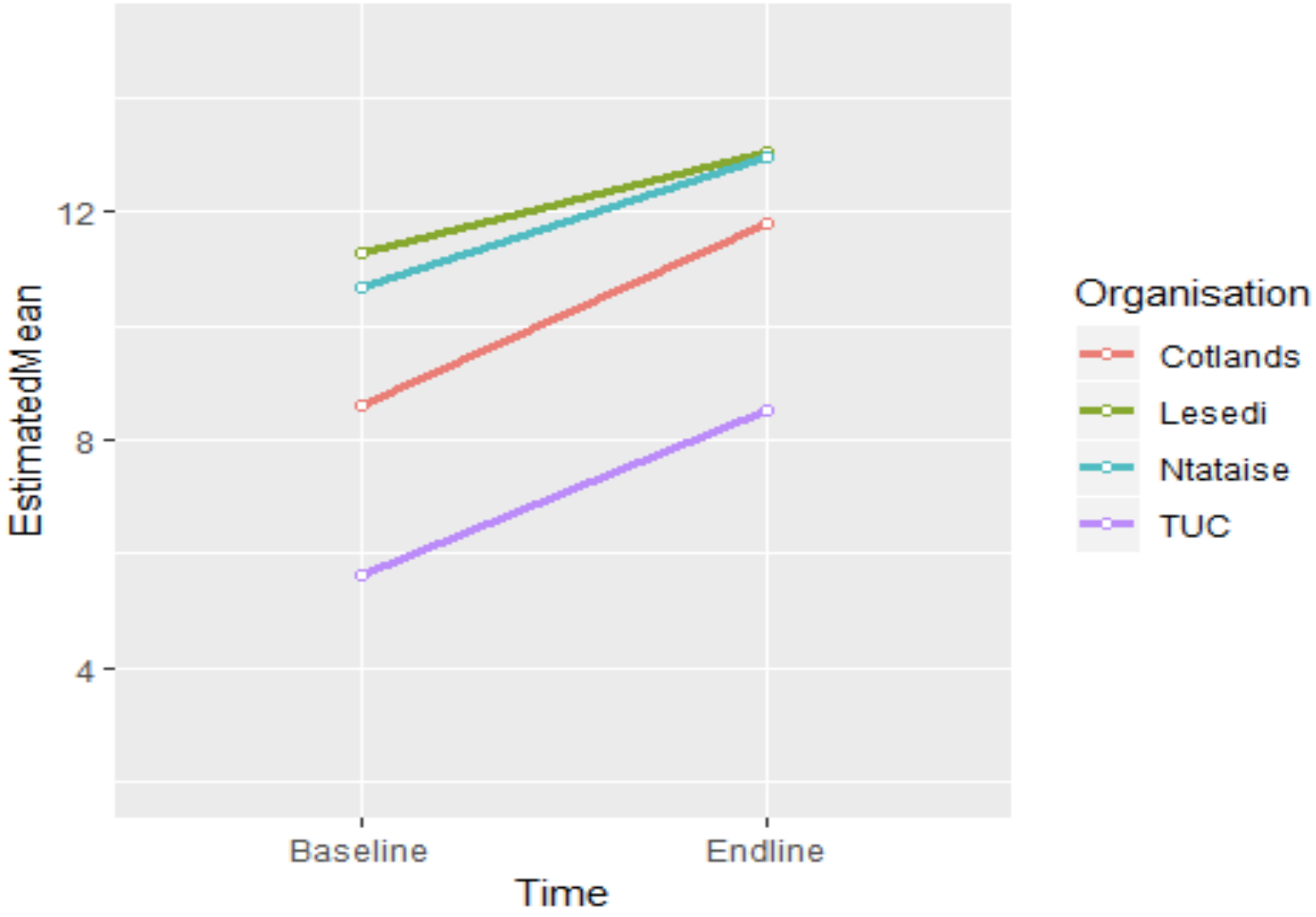
Fine Motor Control and Visual Motor Integration FMC&VMI



Cognition and Executive Functioning (CEF)



Emergent Numeracy and Mathematics (ENM)



ANSWERING THE QUESTIONS:
PREDICTORS OF CHANGE

PROGRAMME LEVEL		
DESCRIPTION OF EFFECT	**DOMAINS**	**EFFECT SIZE**
Cotlands and TUC children improved the most from baseline to endline.	All	Small
Greater satisfaction of practitioners with the support of their organisations produced significantly greater performance on FMCVMI.	FMCVMI	Large

[1] effect sizes based on Cohen's convention (0.2: **'small'**; 0.5 **'medium'**; 0.8 **large**.

CHILD		
Description of Effect	**Domains**	**Effect Size**
Older children performed significantly better on all ELOM domains and on the ELOM Total score.	Total, GMD, FMCVMI, CEF, ENM, ELL	Small to Moderate
Children with higher height-for-age scores (healthier and less likely to be malnourished) performed significantly better on all ELOM domains and on the ELOM Total score.	Total, GMD, FMCVMI, CEF, ENM, ELL	Small to Moderate
Children with higher programme exposure, regardless of programme type, performed significantly better than children with lower programme exposure on the FMCVMI subscale of the ELOM.	FMCVMI (ELOM Total and ELL to a lesser extent)	Small
Children who had been in their programmes for 3 years performed significantly better than children with fewer years on GMD and ELL.	GMD and ELL	Small

HOME LEARNING ENVIRONMENT

Children with greater learning resources at home performed significantly better on FMCVMI and CEF.	FMCVMI and CEF	Small

LIMITATIONS

1. 23% of children assessed at baseline could not be followed up.
2. Attrition compromised random sampling of children within programmes. But: no differences between children RETAINED and DROPOUTS on ELOM Total and AGE at baseline.
3. Attendance data: number of hours children attended not regarded as reliable –number of sessions attended used in analyses.
4. Quintile is a proxy for the child's SES as household SES not measured.
5. Study programmes used very different internal systems for rating their practitioners, and other aspects of programme quality. A standardised system was not used.

IMPLICATIONS FOR PROGRAMMING

1. Targeting: Greatest gains for children starting at lower base
2. Quality, controlled and supported playgroups, with school readiness targeted curricula, can make a significant difference for the poorest children, though they will *not necessarily enable them to reach the ELOM Standard*
3. Higher attendance rates (all programme types) associated with greater gains – ensure regular attendance and sessional programmes to consider offering more sessions
4. Good management and regular ongoing monitoring essential to quality
5. Findings across programme types suggest the need for a curriculum and/or training focus on FMC/VMI, CEF and ENM.
6. Parent programmes unlikely to raise school readiness goals unless intensive and parents have time and commitment. RATHER FOCUS on health and positive parenting messages and ensuring enrolment and regular attendance at ELP
7. High drop out rate for low quintile children at ELPs (especially playgroups) is a challenge and retention strategies should be investigated
8. Child Growth status findings support need for concerted first 1000 day nutrition focus

TAKE AWAY: IF WE GOT IT RIGHT WOULD WE HAVE LESS OF THESE?

MAYBE NOT…….


THANK YOU
ENKOSI
NGIYABONGA
KEA LEBOHA
DANKIE