



The Determinants of Interaction Quality in Australian Child Care: A Production-Function Approach

Dr. Gordon Cleveland (U.Toronto)
Prof. Collette Tayler (U.Melbourne)
Dan Cloney (U.Melbourne)



Research Collaboration

E4
kids

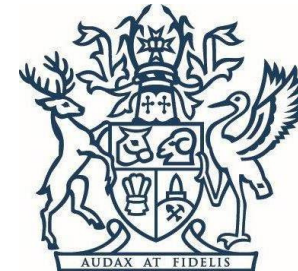


Department of Education and
Early Childhood Development



Australian Government

Australian Research Council



**Queensland
Government**



UNIVERSITY OF
TORONTO



Leading education
and social research
Institute of Education
University of London

The **Royal Children's**
Hospital Melbourne



Presentation Overview



-
1. Caveats
 2. E4Kids study overview – especially the CLASS
 3. Why and how to study the determinants of quality
 4. Institutional, director, teacher and child variables
 5. Taking variables one-by-one
 6. Taking variables in groups
 7. All together?
 8. Some ideas and further questions

This work is preliminary!



- No final specification yet
- Missing data still being updated
- No weighting yet for special features of study design
- No weighting yet for systematic non-response
- No checking of results against 2010 and 2011 (cycle 2)

E4Kids – Study Overview



Research design:

- 5 year longitudinal study of 2,653 children (3-4 years old)
- Parent surveys about family and child
- Teacher/educator surveys about characteristics of teachers in classrooms
- Director/Principal surveys about characteristics of service and director/principal
- Baseline and regular updates on child abilities (WJIII etc.)
- On-site detailed evaluation of interaction quality (CLASS, ECERS-R)
- No-program control sample



E4Kids Sample and Location



Remote: Mount Isa

ECEC kids 167, NPC kids 10
2011- Services 11,
Rooms 39

Greater Metro: Brisbane

ECEC kids 961, NPC kids 62
2011- Services 122,
Rooms 179

Regional: Shepparton

ECEC kids 336, NPC kids 16
2011- Services 32, Rooms 89

Greater Metro: Melbourne

ECEC kids 1028, NPC kids 71
2011- Services 189,
Rooms 327

Our Sample



- The sample used has about 450 classrooms in long day care and kindergartens
- On-site quality evaluations were done in early 2011 and other data were collected by survey
- Regressions control for the clustering of rooms within services; standard errors are adjusted

Measures in E4Kids



◆ CHILD ASSESSMENT

Height, weight, waist

Cognition & Achievement: WJ-III

Friendships/social inclusion: Bus story

◆ PROGRAM ASSESSMENT

Pedagogy: CLASS

Other characteristics: ECERS-R,
3 subscales

◆ QUESTIONNAIRE

Parent: ECEC program history/ access;
child behaviour, social skills;
parenting style; home learning
environment

◆ QUESTIONNAIRE

Director/Principal: structural aspects

Educator/Teacher: child behaviour,
structural aspects

◆ DATA LINKAGE

NAPLAN

Process quality measured by CLASS



Emotional Support

- Positive Climate
- Negative Climate
- Teacher Sensitivity
- Regard for Child Perspectives

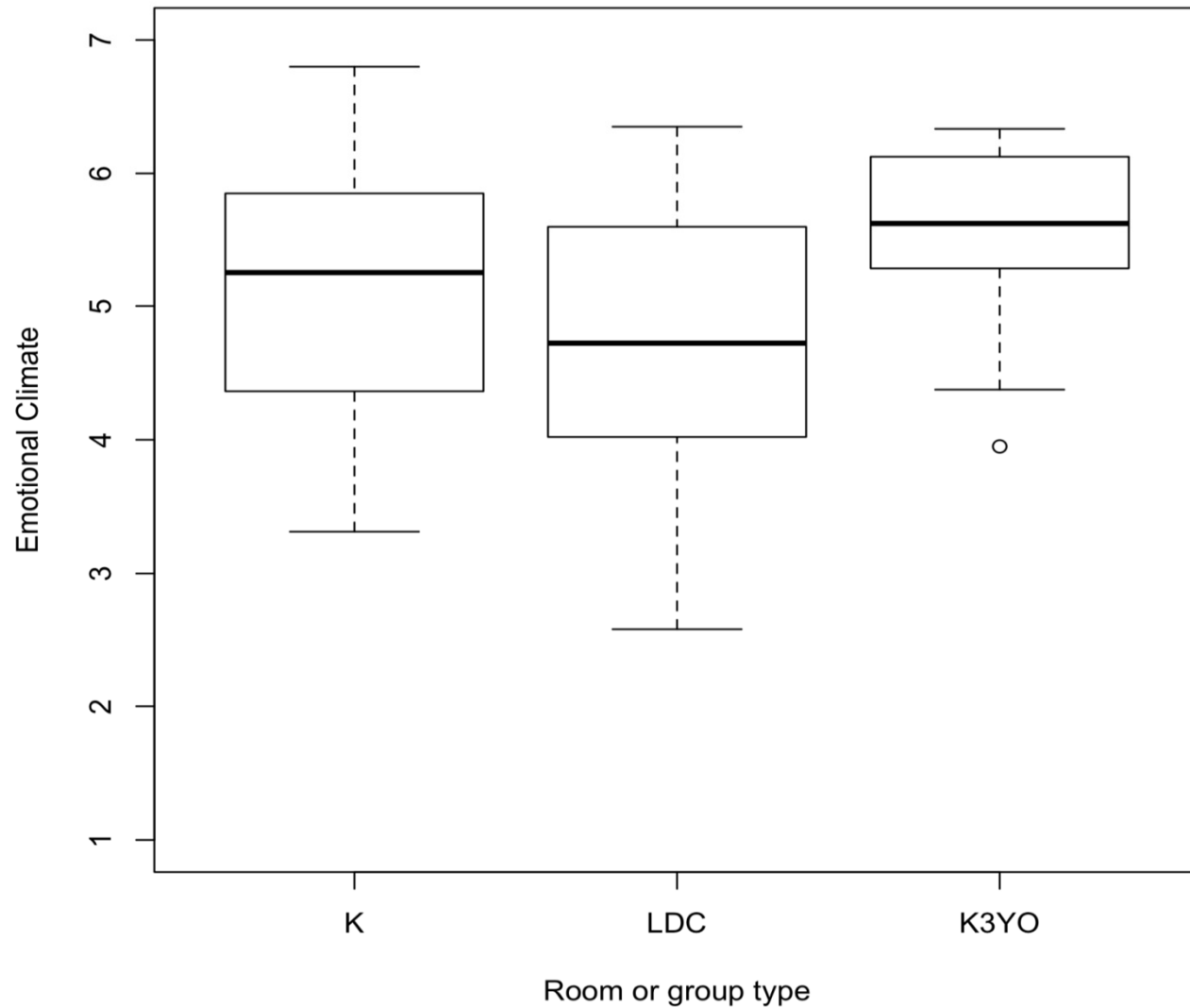
Class Organization

- Behavior Management
- Productivity
- Instructional Learning Formats

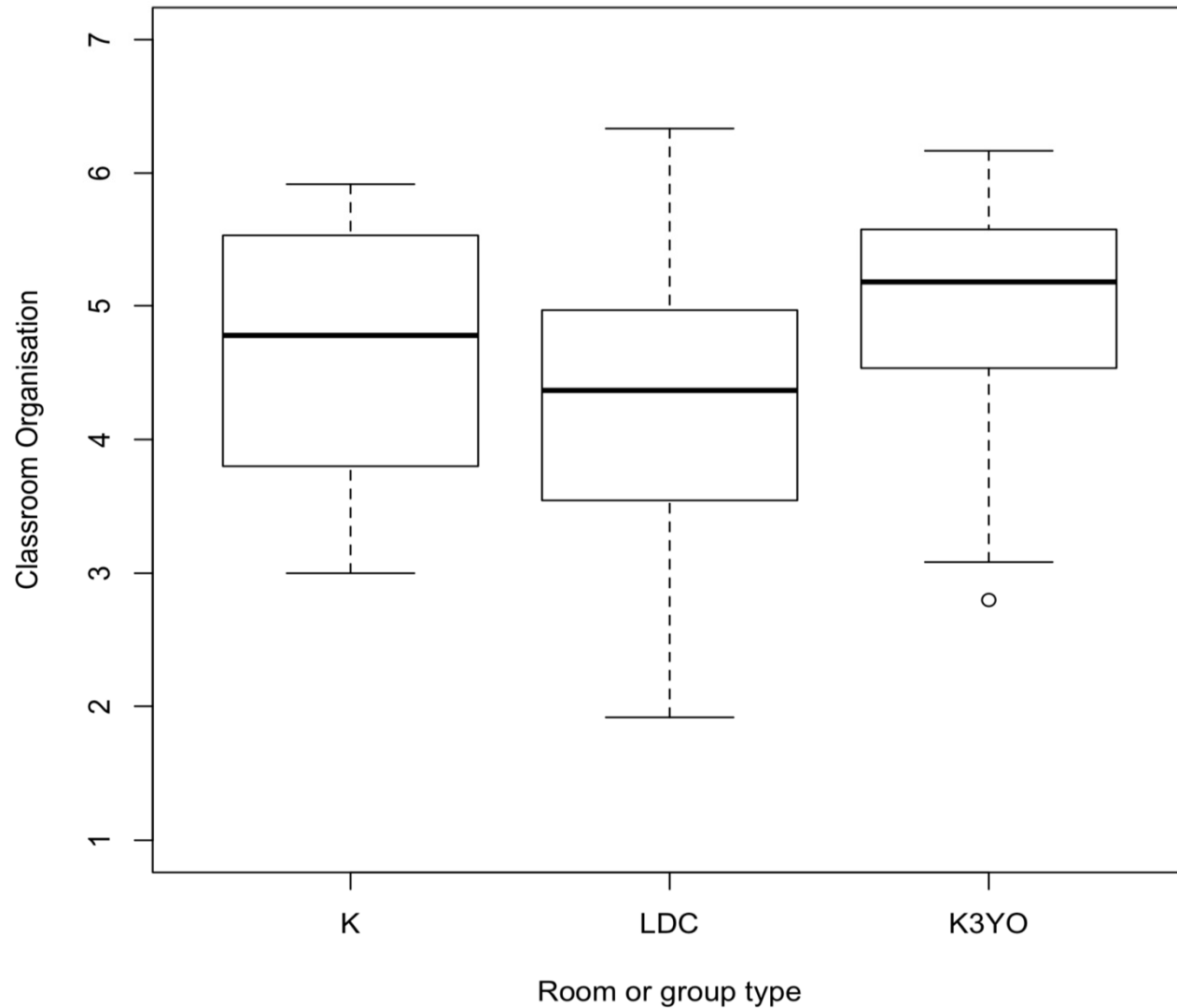
Instructional Support

- Concept Development
- Quality of Feedback
- Language Modeling
- Literacy focus

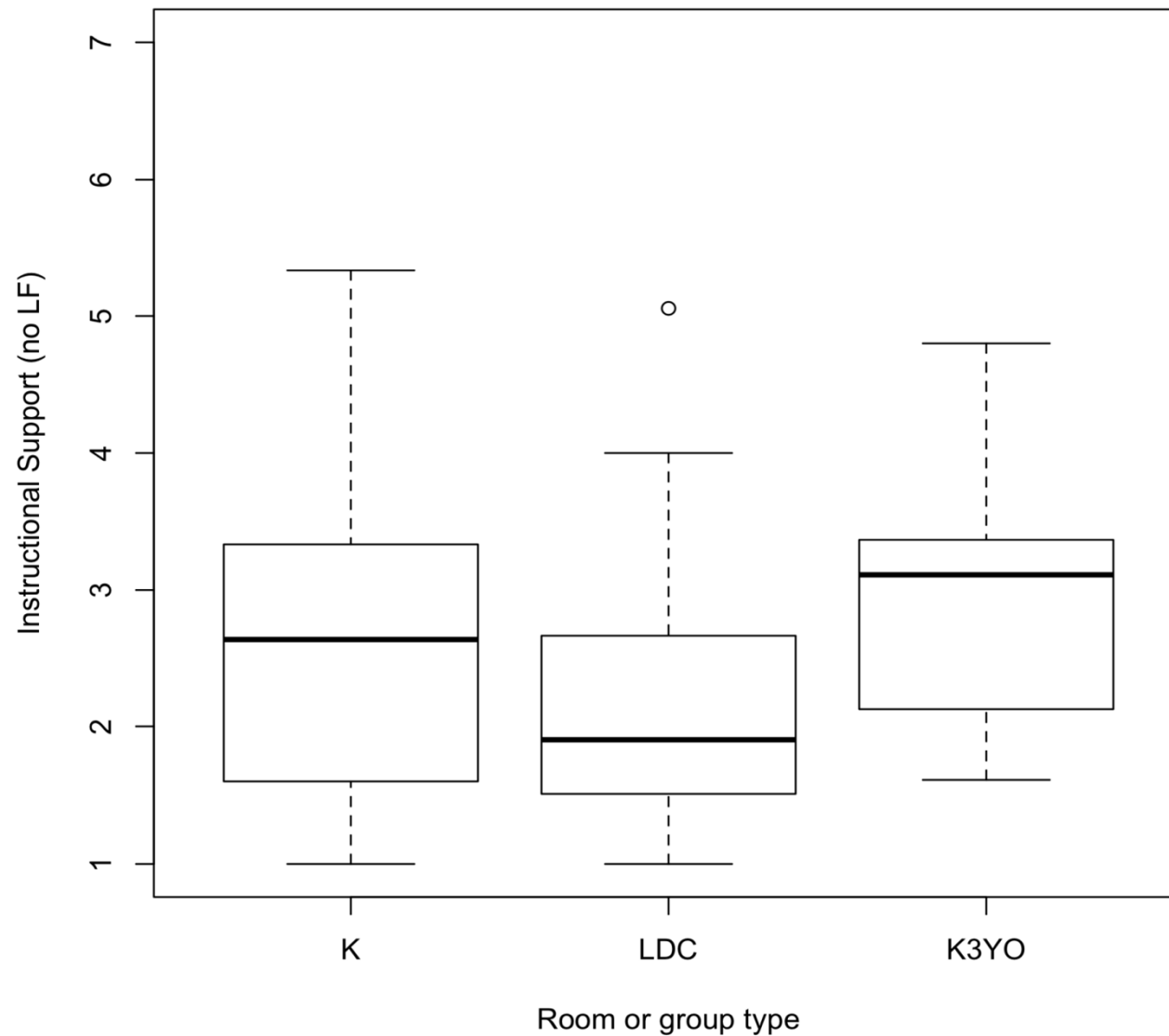
Emotional Climate



Classroom Organisation



Instructional Support



How quality is determined



-
- We assume that “level of quality” is a deliberate choice of the ECEC service
 - A mix of particular inputs is chosen to produce quality as an output
 - Quality is expensive. Parents choose different combinations of quality and cost. Different centres/services choose different levels of quality and use different mixes of inputs
 - Regulations constrain choices of input mix

Possible determinants



-
- CLASS is measured at the classroom level
 - Teacher characteristics can affect quality (education, ECEC training, experience, etc.)
 - Director characteristics can affect quality (education, experience, etc.)
 - Institutional characteristics can affect quality (type of service, auspice, location, etc.)
 - Child characteristics can affect quality (number of children, ages, disability, knowledge of English, socioeconomic status, etc.)

Methods



-
- We rely on a large literature suggesting potential quality-affecting factors
 - OLS regressions of Emotional Support, Classroom Organization and Instructional Support on potential determinants taken one-by-one
 - OLS on groups of potentially quality-affecting determinants
 - We put all determinants in the same regression but results are unsatisfactory
 - Discussion of next steps in this investigation

Institutional Variables: Effects on CLASS taken one-by-one



	Emotional	Class Org	Instructional
Melbourne (Brisbane omitted)			
Hume			- ***
Mount Isa			
For-profit (community non-profit omitted)		- **	
Gov't-managed		- **	
School-managed			- *
Standalone K (LDC omitted)	+ ***	+ ***	+ ***
Standalone K3YO	+ ***	+ ***	+ *
K in LDC	+ **	+ **	+ **

Director Variables: Effects on CLASS taken one-by-one



	Emotional	Class Org	Instructional
Director Bachelor (no university omitted)	+ **	+ **	+ *
Director Post-graduate	+ ***	+ **	+ **
Director has university ECEC qualification	+ **		+ *
Director recent professional development		+ *	+ **
Director – years experience in service		+ **	+ **
Director born Oz	+ *	+ **	+ *
Director first language English		+ ***	+ **

Teacher Variables: Effects on CLASS taken one-by-one



	Emotional	Class Org	Instructional
Teaching director (teacher omitted)	+ ***	+ **	+ ***
Lead teacher	+ **		
T_bachelor	+ **		+ **
T_post-grad	+ **		+ **
T_ECEC qual			
T_usual work hours			+ **
T_years exp in this service	+ ***	+ ***	
T_Aboriginal/TSI			- ***
T_born Oz			+ ***
T_English	+ **	+ *	+ ***

Child Variables: Effects on CLASS taken one-by-one



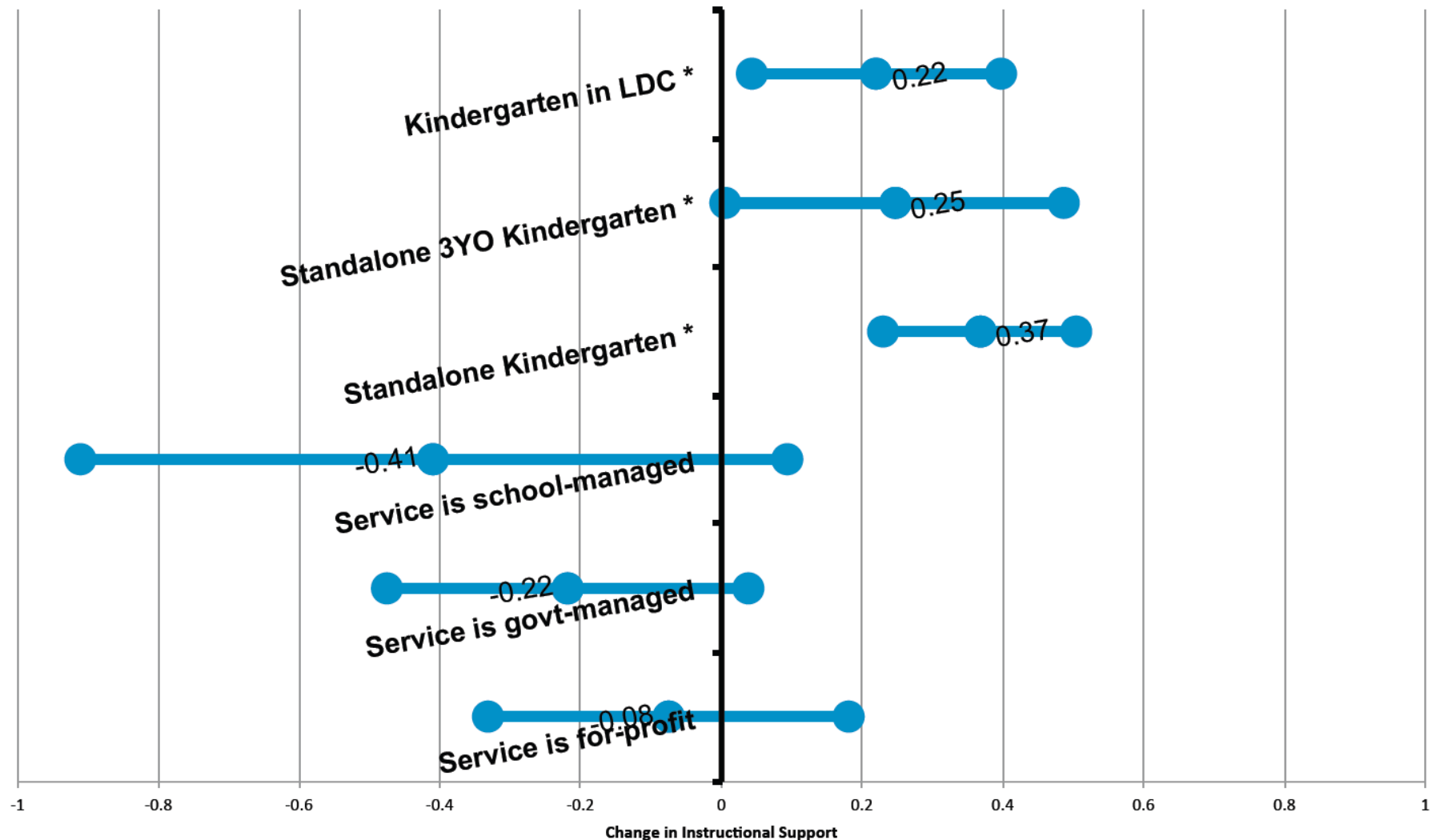
	Emotional	Class Org	Instructional
SEIFA adv and disadv 2006	+ **	+ ***	+ ***
“average” age	+ **	+ ***	+ **
Children per week	- ***	- ***	- ***
Maximum Room Count			
Kids with diagnosed needs	+ ***	+ **	
Additional staff resources	+ ***	+ *	
Schedule-timetable		- *	
Kids Aboriginal/TSI			
Kids non English			

How groups of variables help explain Instructional Support scores

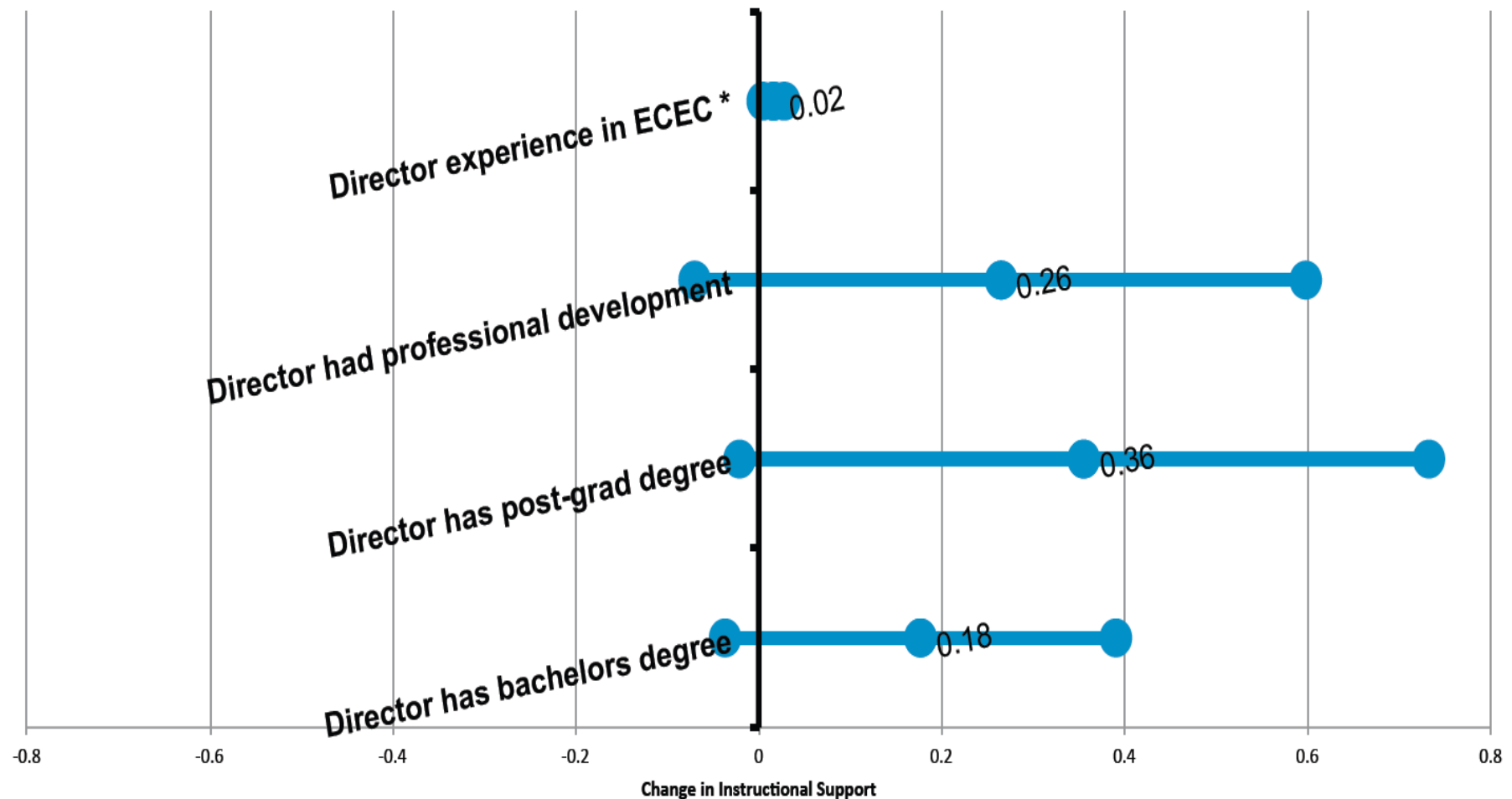


- In turn, we take groups of variables – institutional, director, teacher, child
- We regress Instructional Support scores against each of these groups of variables
- The following slides present regression results in visual form

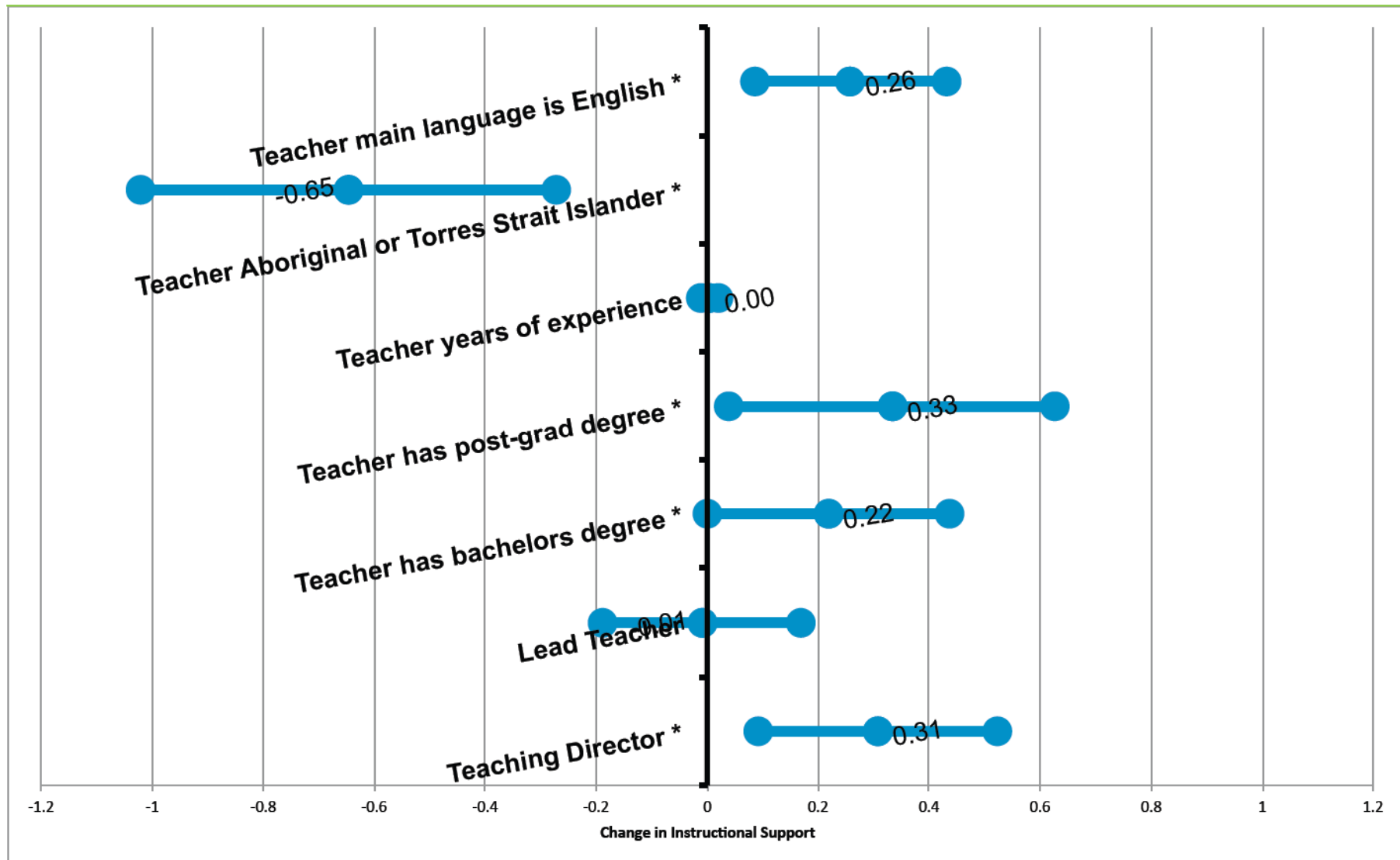
Effects of institutional factors on instructional support



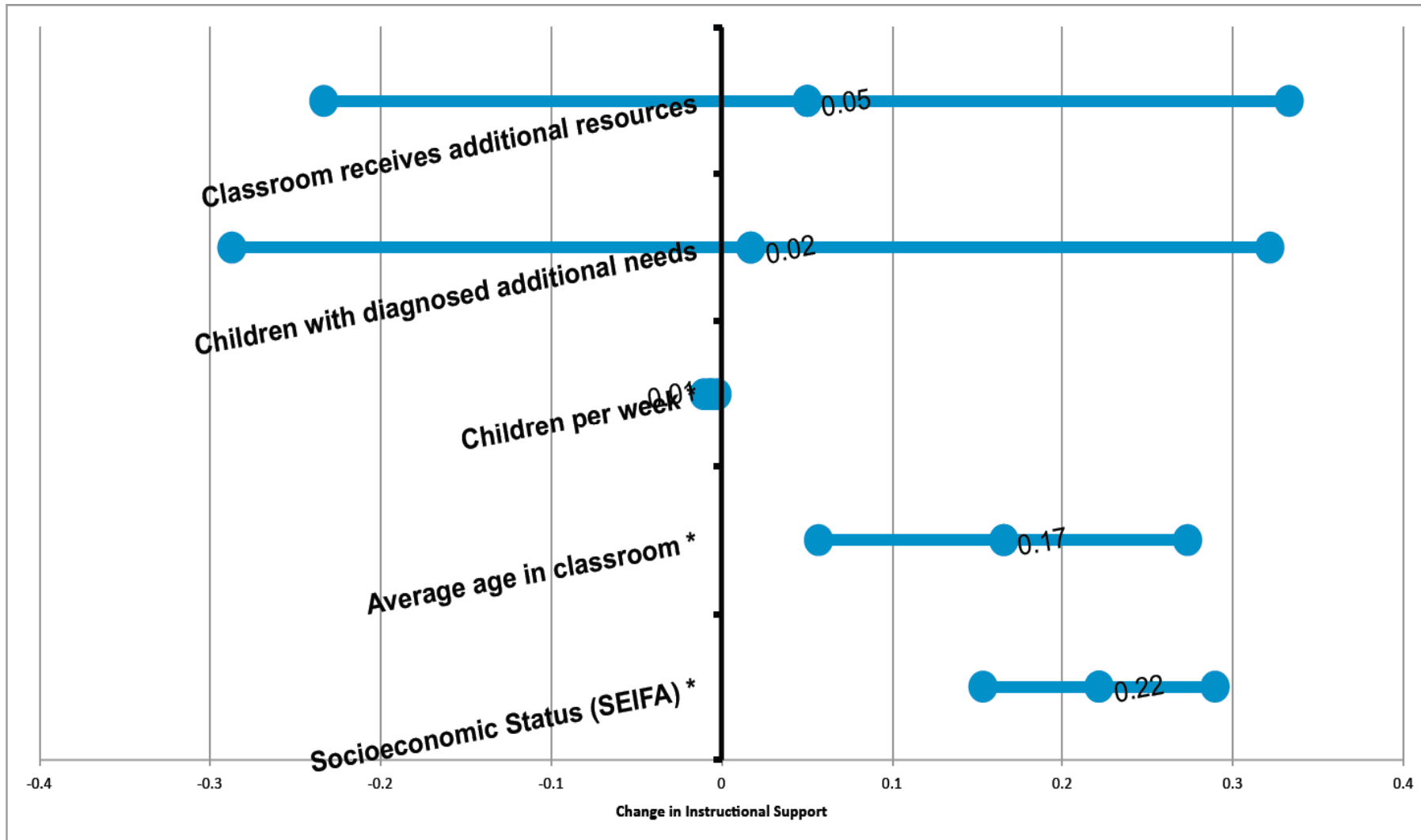
Effects of director characteristics on instructional support



Effects of teacher characteristics on instructional support



Effects of child characteristics on instructional support

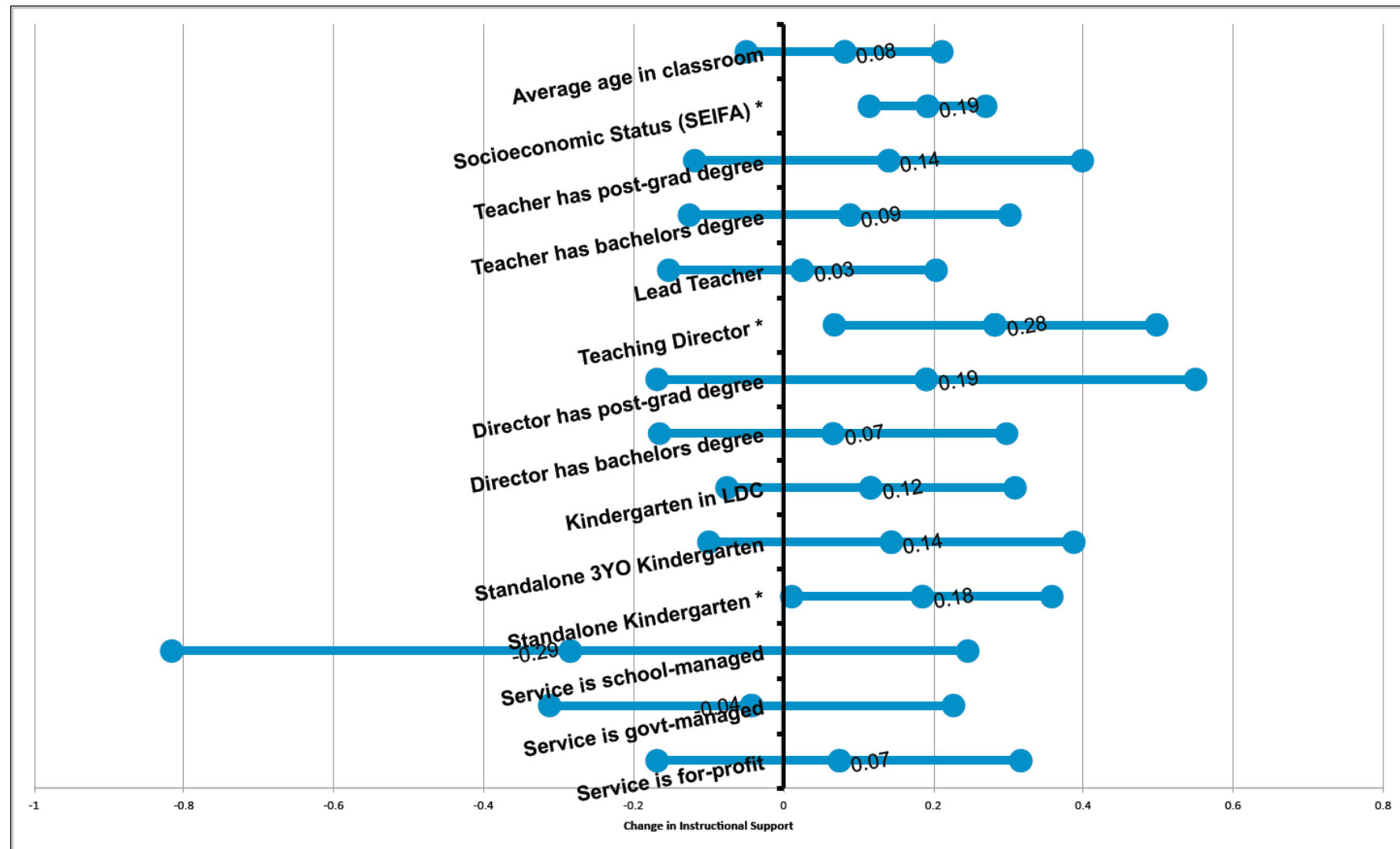


Now, all together



-
- Taking most of these variables together allows us to look at the effects of each variable when all are taken together
 - However, it is apparent there is too much collinearity for this size of sample and few variables are statistically significant
 - Back to the drawing board to see if alternative specifications can reveal what we think is happening below the surface

Effects of a wide range of potential determinants on instructional support



Key “findings” from analysis so far



- Type of service and SEIFA code have strong, persistent effects on quality
- Most director and teacher variables and the age of children in the classroom appear to affect the provision of quality
- However, many variables are not statistically significant when all are included

Where to go from here



-
- Take different types of service separately
 - Reduce missing data
 - Check against 2010 and 2011(2)
 - Use ECERS-R as alternative or complementary measure of quality
 - Reduce explanatory variables to core – combine variables if possible
 - Control for differences in financial capability of services

E4Kids Research Network



□ **Collette Tayler**

The University of Melbourne

□ **Karen Thorpe**

Queensland University of Technology

□ **Patrick Griffin**

The University of Melbourne

□ **Ray Adams**

The University of Melbourne

□ **Elizabeth Waters**

The University of Melbourne

□ **Gordon Cleveland**

University of Toronto

□ **Iram Siraj-Blatchford**

University of London (IEd)

□ **Frank Oberklaid**

The Royal Children's Hospital Melbourne

□ **Ann Sanson**

The University of Melbourne

□ **Karin Ishimine**

The University of Melbourne

□ **Tim Gilley**

Department of Education and Early Childhood Development (DEECD, VIC)

□ **Carol Markie-Dadds**

Department of Education, Training and Employment (DETE, QLD)

□ **John Dungan**

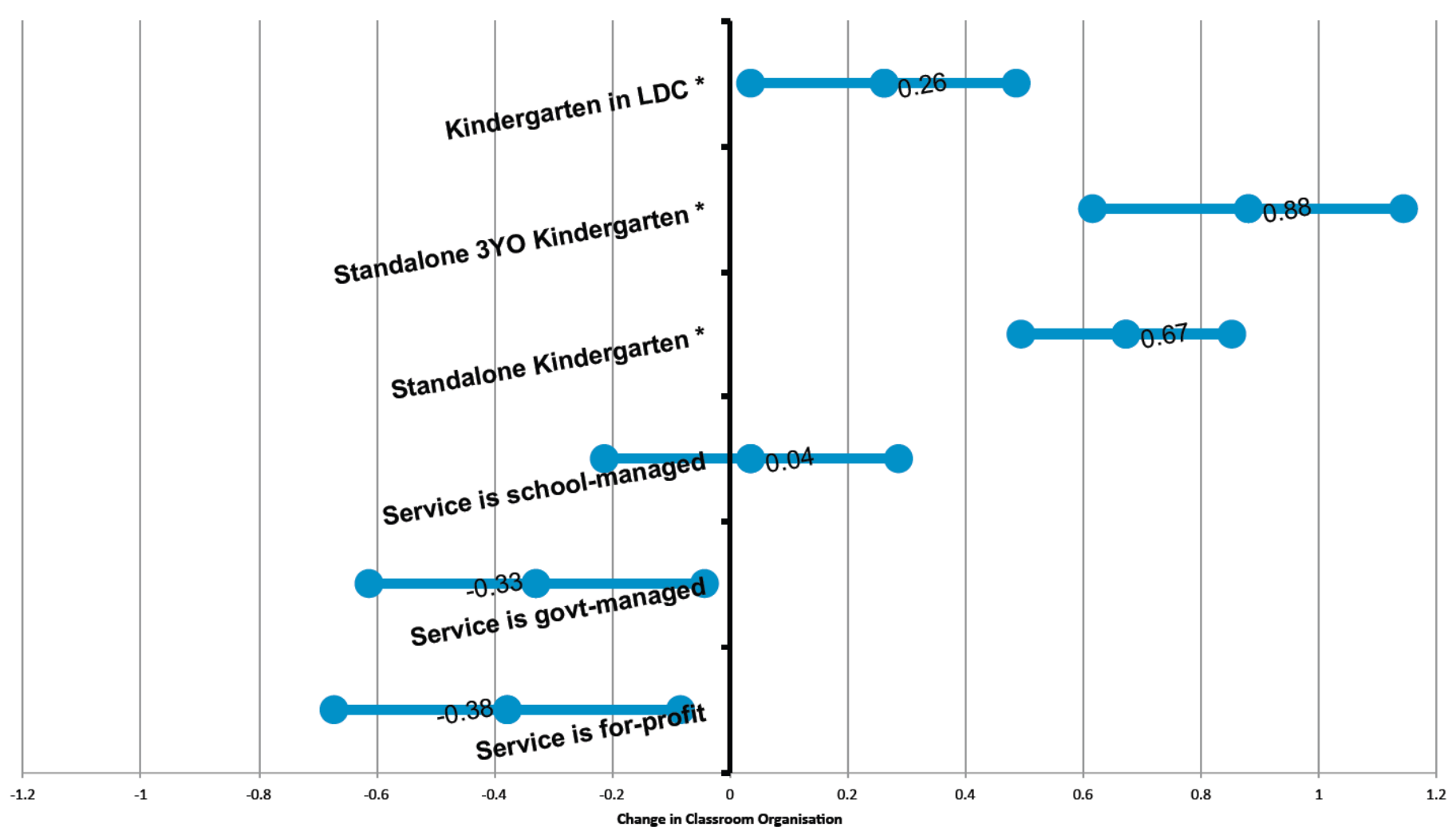
Department of Education, Training and Employment (DETE, QLD)

Extra Slides

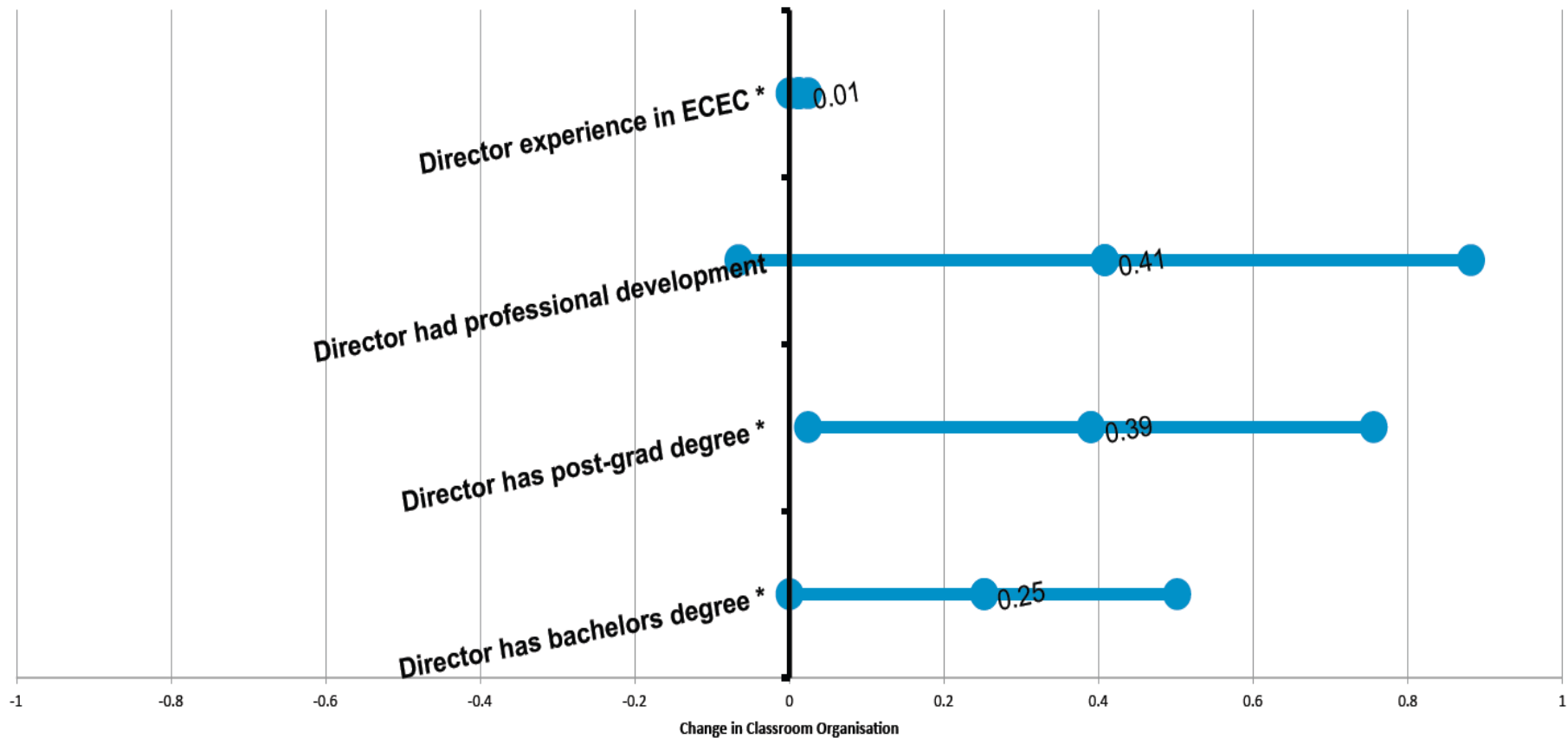


-
- Extra slides follow this one

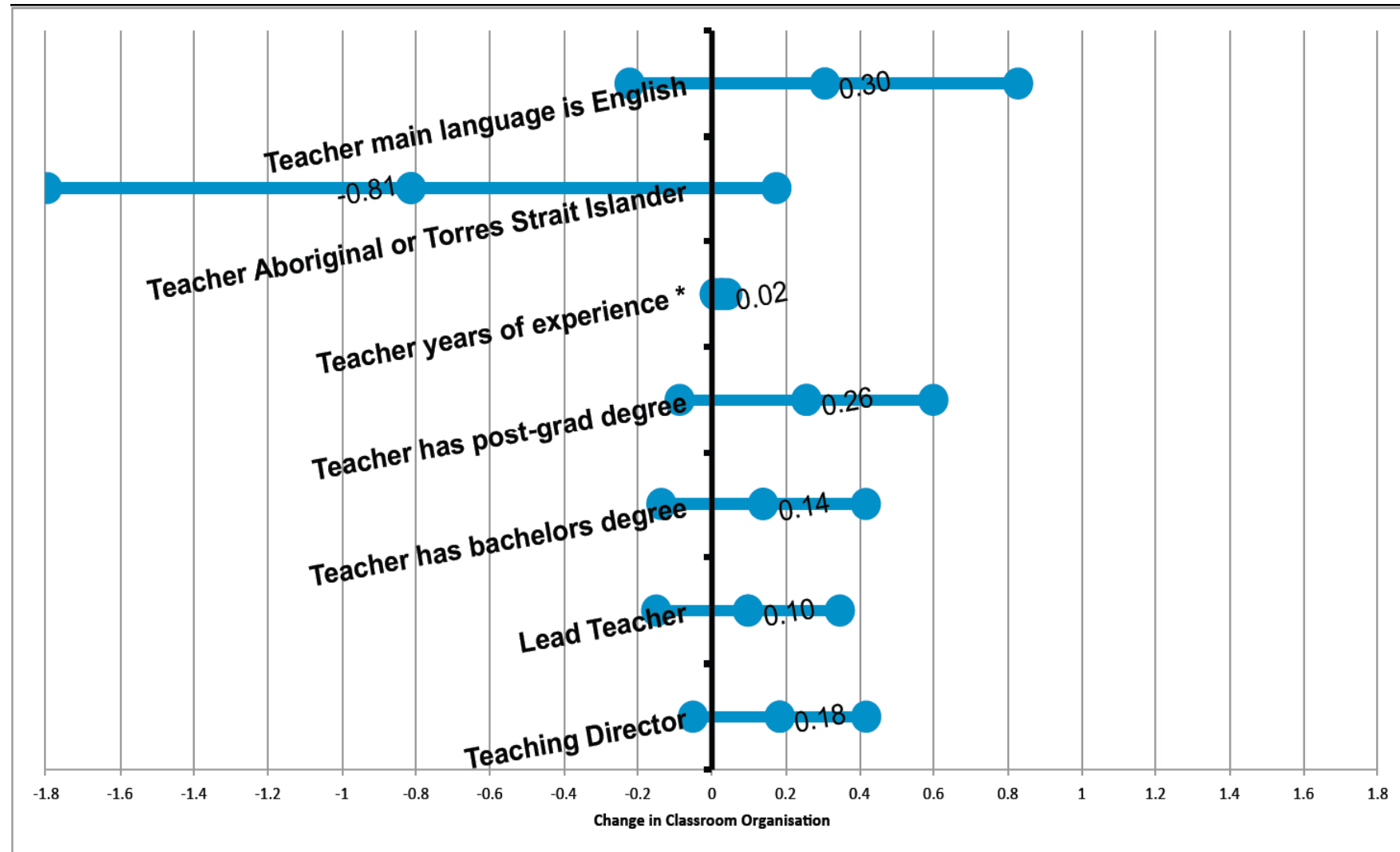
Effects of institutional factors on classroom organization



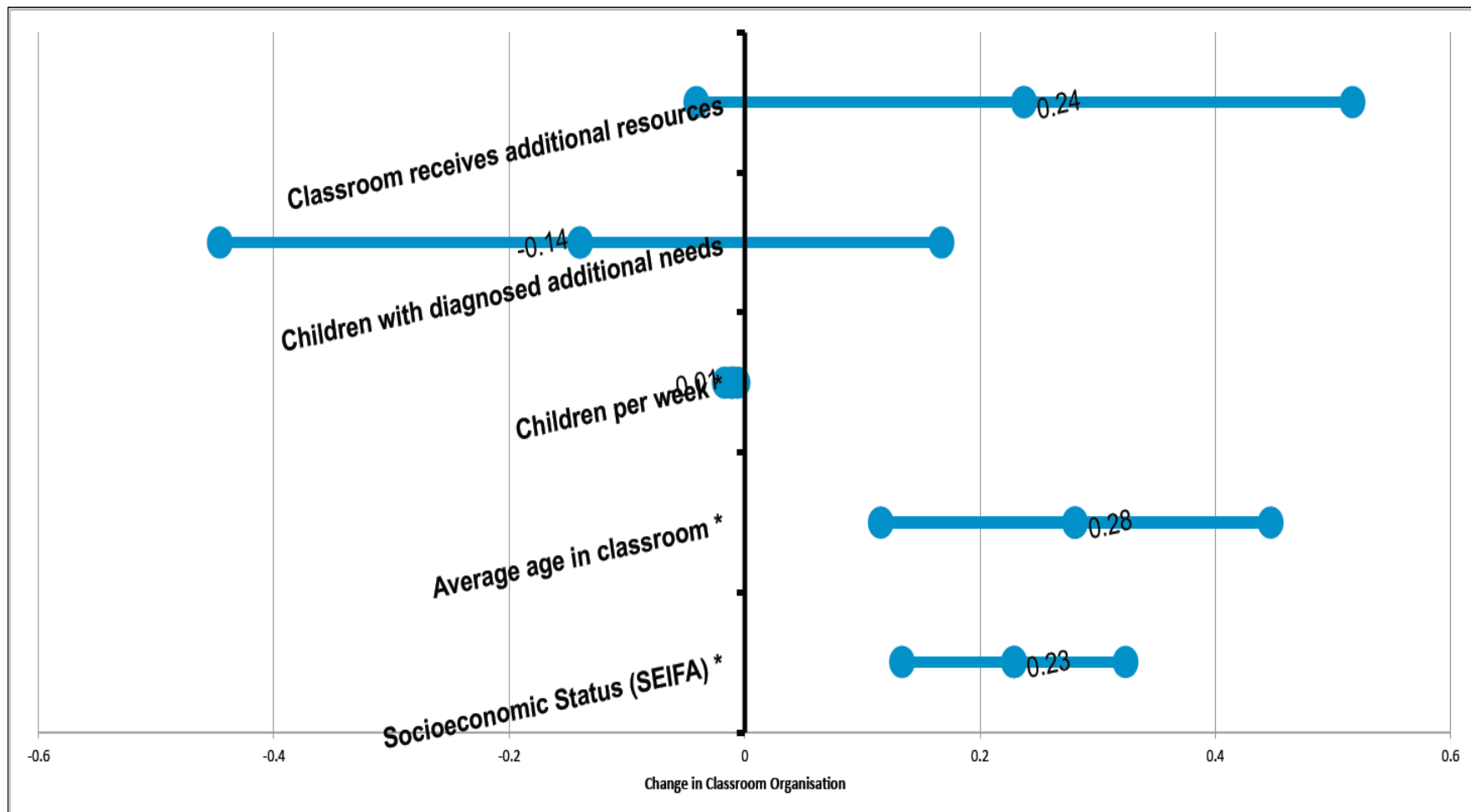
Effects of director characteristics on classroom organization



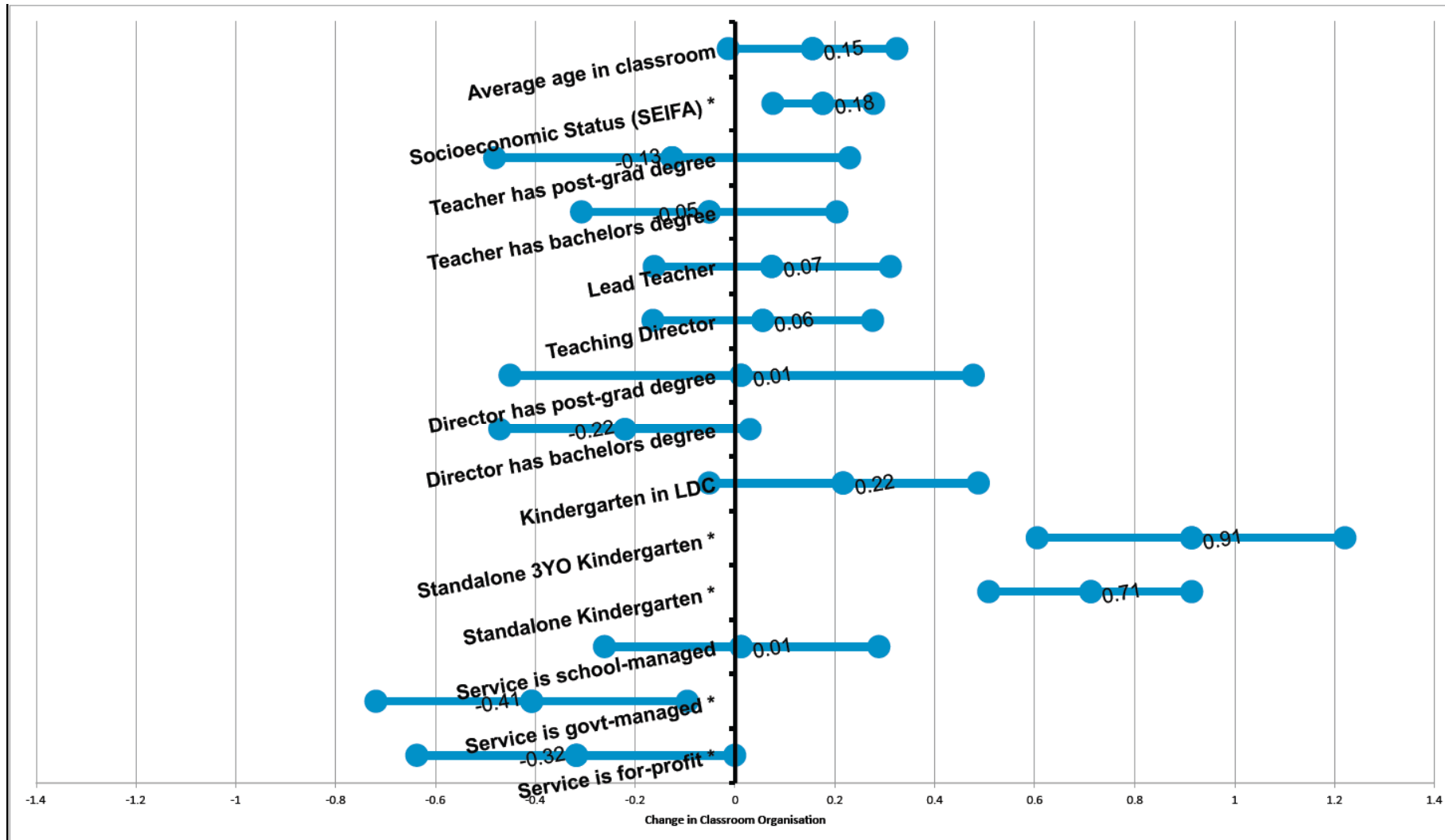
Effects of teacher characteristics on classroom organization



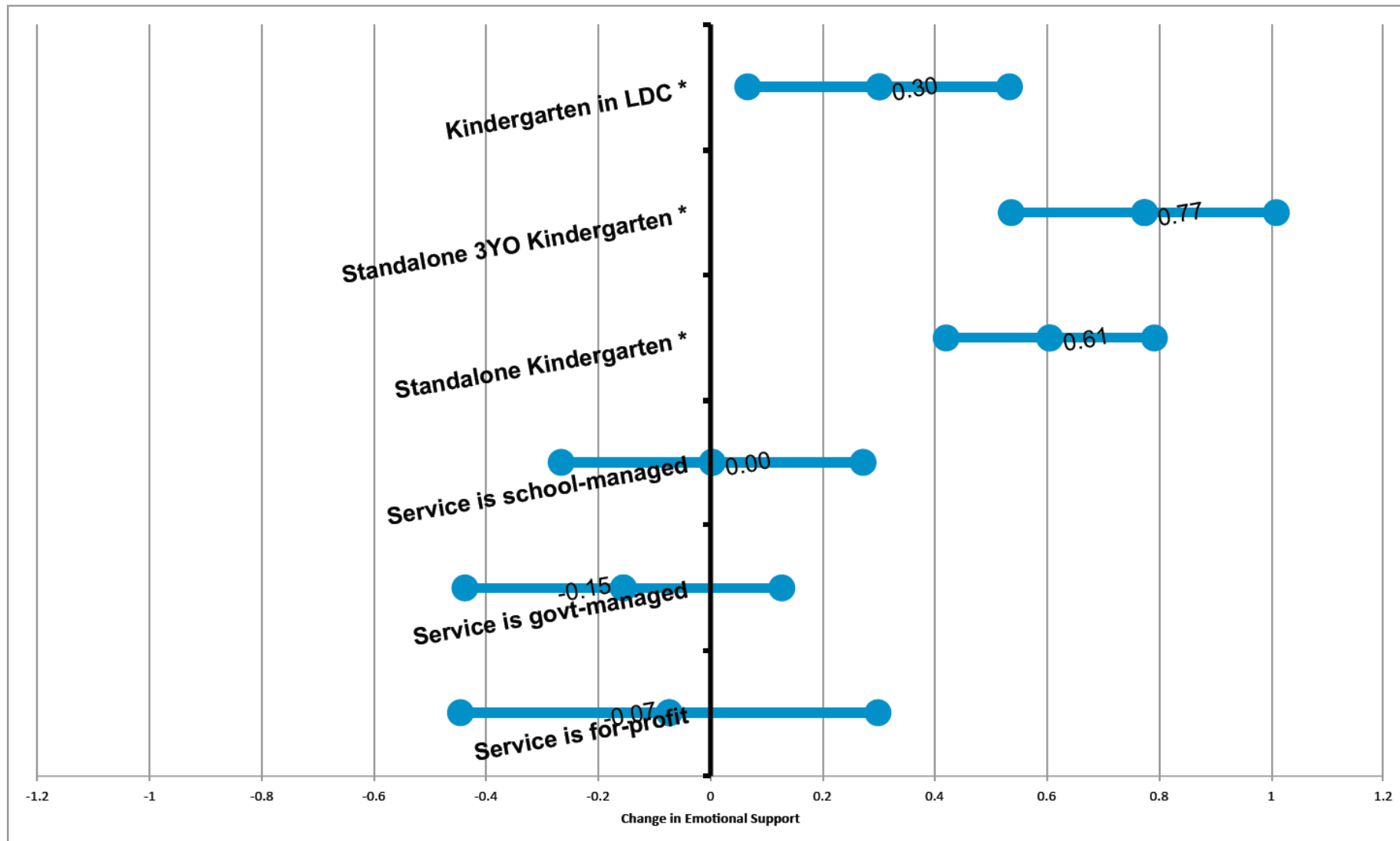
Effects of child characteristics on classroom organization



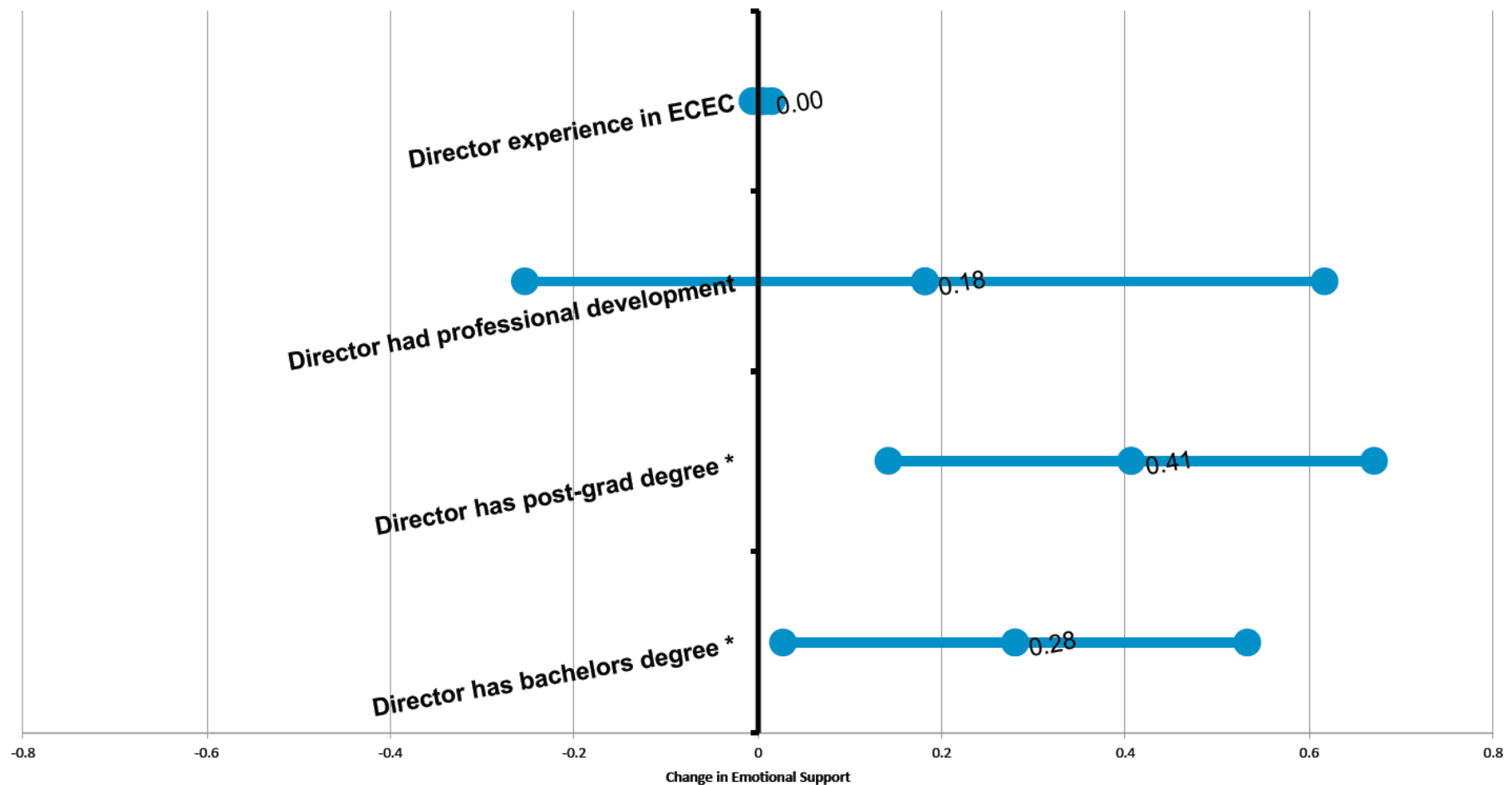
Effects of a wide range of potential determinants on classroom organization



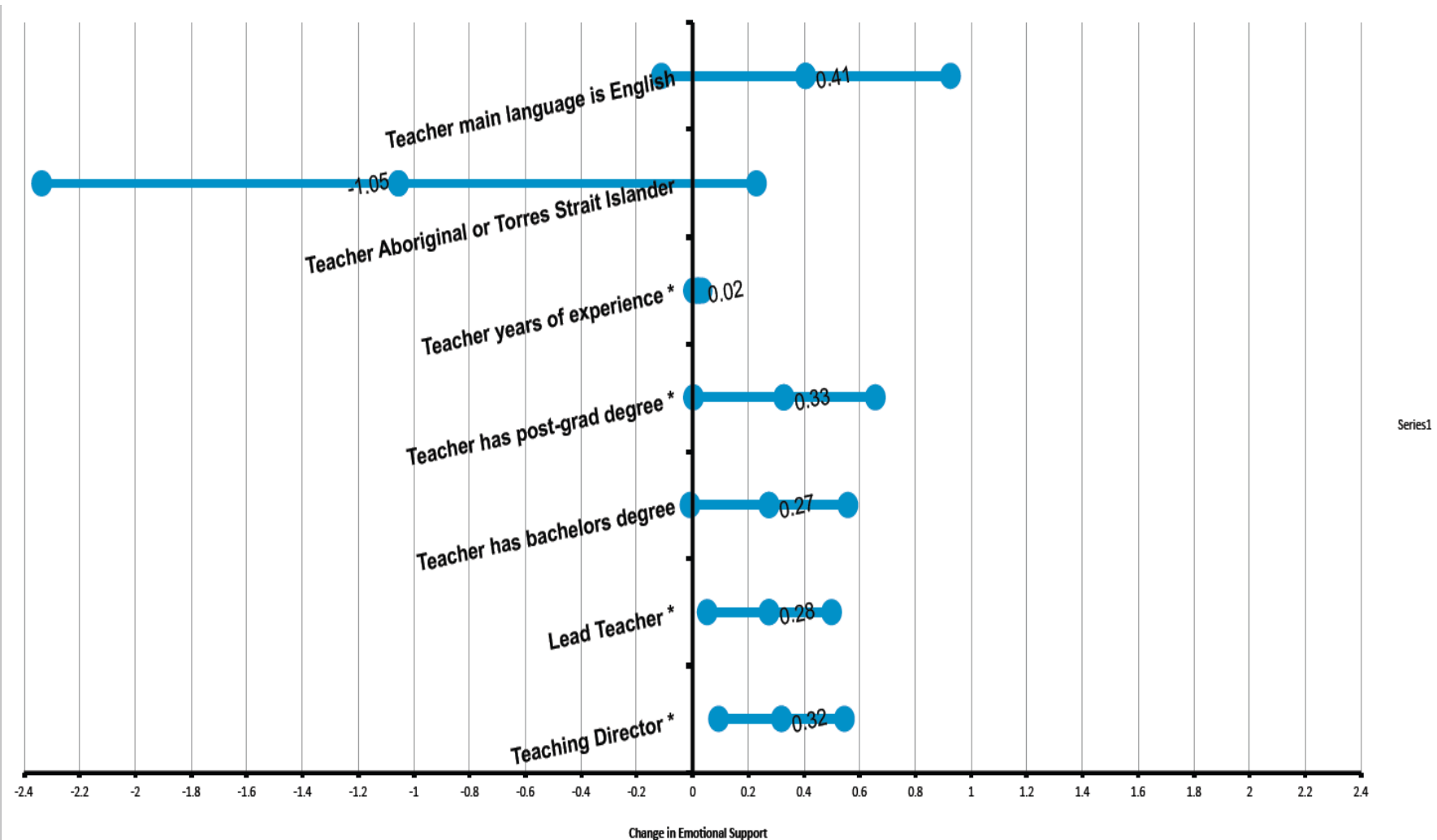
Effects of institutional factors on emotional support



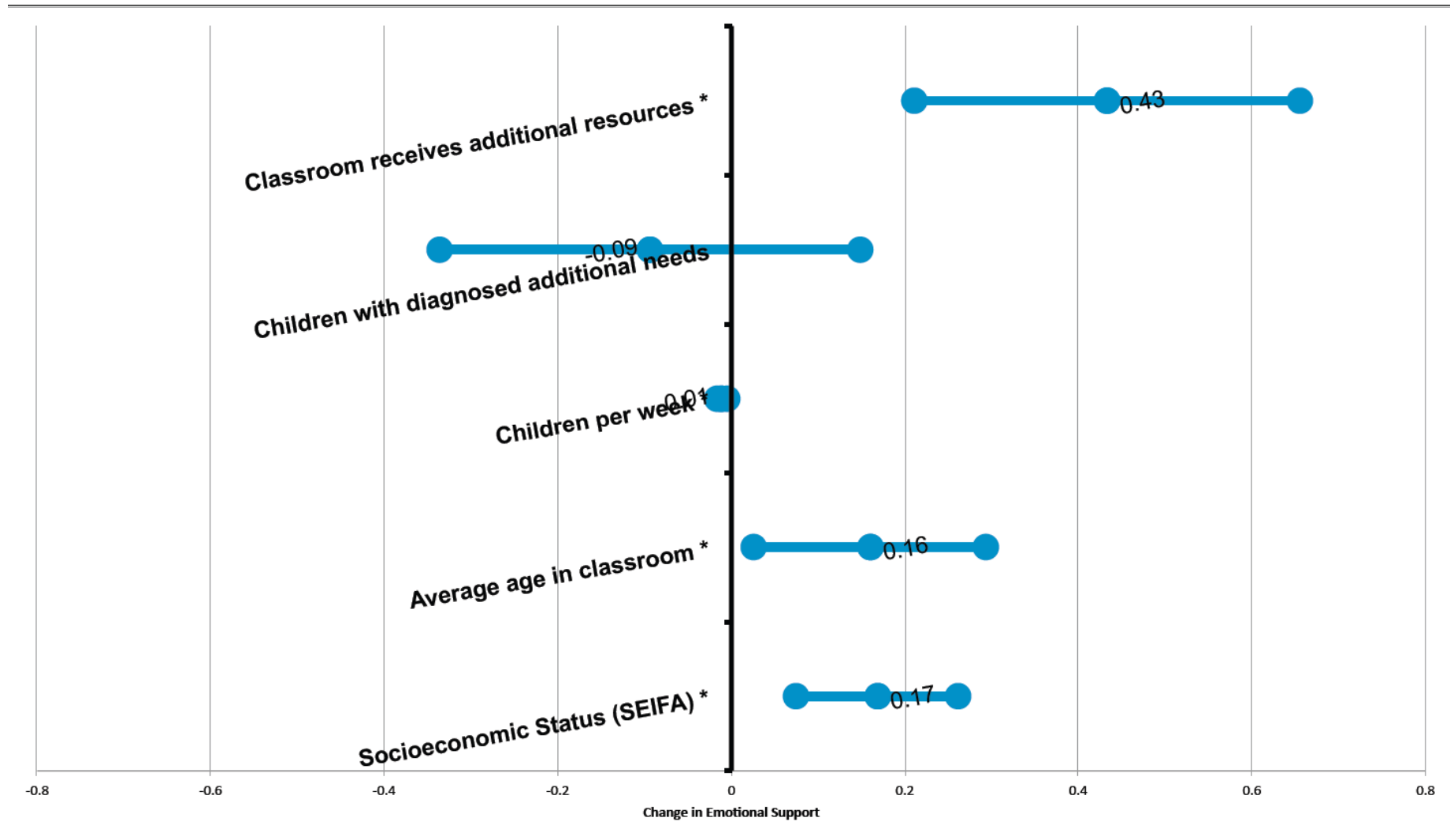
Effects of director characteristics on emotional support



Effects of teacher characteristics on emotional support



Effects of child characteristics on emotional support



Effects of a wide range of potential determinants on emotional support

