The role of Supervisors in Jovem de Futuro
Supervision Quality – RN and ES

São Paulo, February 7th, 2020
Roadmap

• Research question
• Main results (spoilers)
• RN and ES: field survey (perception of school managers about supervisor visit quality)
• RN: Supervisor profile information
• New attribution indicators (based on logic model)
  • Presentation of indicators and results
• New constructs extracted based on manager perceptions
  • Presentation of factors and results
Role of Supervisors

Characteristics of Supervisor, Regional office and SEDUC → Quality of supervision → Quality of school management

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Role of Supervisors

Characteristics of Supervisor, Regional office and SEDUC

Fixed effect of supervisor, regional office

RN: ACG form
Role of Supervisors

We measure **Quality of supervision** as the perception of managers regarding the supervisor’s work/visit.

What does **Quality of supervision** consist of? What factors in the supervisor-manager relationship can affect **Quality of visit**?

*Joint exploratory factor analysis to define indicators.*
Role of Supervisors

Quality of school management

Management quality indicator (Madeira & Meloni, 2018)

Tasks execution indicator

Operational results indicator
Role of Supervisors: ‘Spoilers’!

1. We are opening the “black box” of supervision...
2. We found correlations of some supervisor traits with new supervision quality indicators.
3. RN supervisors are always not-as-well evaluated as supervisors in ES.
4. What is the story of constructs extracted from the survey? One represents personal traits of supervisors and the other adherence to program protocols:
   - Personal traits observed continue to show little correlation with the result measures analyzed; and,
   - Adherence to protocols has a positive and significant correlation with the SMAR execution measure.
What is the story of attributions? (Supervisor attributions: be a Tutor, be a Counselor, be an Intermediary between regional offices and schools; be an Implementation Guardian of the circuit – part of the program's logic model)

1. All 4 supervision attributions are correlated with one another: the effect of each attribution on its own is null. To be effective and yield result for the school, supervisors need the four attributions interacting with each other in their work.

2. The attributions indicator has a positive relationship with the tasks execution measure – for RN
   - If we trained a supervisor to reach the maximum evaluation in the attributions indicator, the percent variation obtained in tasks execution would be 28% in RN.

3. The attributions indicator has a positive relationship with the management quality measure - for ES
   - If we trained a supervisor to reach the maximum evaluation in the attributions indicator, it could increase the overall average of management quality by 2% in ES.
Profile of Supervisors:

RN x ES
Assessment of managers regarding the work of supervisors and role of supervision

ES 2017
173 interviews conducted

Survey with managers in 2017, third year of the program

RN 2018
141 interviews conducted

Survey with managers in 2018, second year of the program
<table>
<thead>
<tr>
<th>Descriptors - ES x RN</th>
<th>ES</th>
<th>RN</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>SD</td>
<td>Average</td>
</tr>
<tr>
<td>P</td>
<td>3.483</td>
<td>0.519</td>
<td>3.060</td>
</tr>
<tr>
<td>D</td>
<td>3.732</td>
<td>0.385</td>
<td>3.452</td>
</tr>
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<td>C</td>
<td>3.719</td>
<td>0.411</td>
<td>3.362</td>
</tr>
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<td>A</td>
<td>3.213</td>
<td>0.613</td>
<td>2.926</td>
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<tr>
<td>Knowledge</td>
<td>3.629</td>
<td>0.388</td>
<td>3.217</td>
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<tr>
<td>Relationship with managers</td>
<td>3.381</td>
<td>0.336</td>
<td>3.117</td>
</tr>
<tr>
<td>N</td>
<td>173</td>
<td></td>
<td>141</td>
</tr>
</tbody>
</table>
Planning

Set of questions about actions

Espírito Santo

- Disagree: 1.16%
- Weakly agree: 4.05%
- Agree: 54.62%
- Strongly agree: 40.17%

Rio Grande do Norte

- Disagree: 24.2%
- Weakly agree: 4.3%
- Agree: 9.7%
- Strongly agree: 61.8%
Execution

Set of questions about frequency

Espírito Santo

- Never: 79%
- Sometimes: 16%
- Often: 5%
- Always: 0%

Rio Grande do Norte

- Never: 24.0%
- Sometimes: 62.1%
- Often: 10.9%
- Always: 3.0%
Monitoring

Espírito Santo

- Never: 76%
- Sometimes: 20%
- Often: 4%
- Always: 0%

Rio Grande do Norte

- Never: 58.7%
- Sometimes: 23.1%
- Often: 13.8%
- Always: 4.4%

Set of questions about frequency
Route correction

Espírito Santo
- Never: 47.59%
- Sometimes: 31.28%
- Often: 15.93%
- Always: 5.20%

Rio Grande de Norte
- Never: 26.6%
- Sometimes: 22.3%
- Often: 39.0%
- Always: 12.1%

Set of questions about frequency
Supervisor Profile in RN:

New information gathered in RN
legendas: YES / NO
Andrew, 1/28/2020
Supervisor Profile in RN

Previous Functions

- Professor(a)
- Diretor(a)
- Vice-diretor(a)
- Coordenador(a) pedagógico(a)
- Técnico(a)
- Técnico(a) da Regional
- Supervisor(a) do ProEMI
- Acessor(a) de outro projeto na Secretaria
- Outra(s)

A6
legendas: Professor / Director / Vice-Director / Pedagogical Coordinator / Inspector / Regional Office Technician / ProEMI Supervisor / Chairperson of another Board project / Other(s)
Andrew, 1/28/2020
Supervisor Profile in RN

• Age

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
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<tbody>
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<td>idade</td>
<td>34</td>
<td>50.82353</td>
<td>6.881995</td>
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<td>62</td>
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• Experience

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<th>Largest</th>
<th>Mean</th>
<th>Std. Dev.</th>
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<td>1</td>
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<td>25</td>
<td>9.876294</td>
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<tr>
<td>5%</td>
<td>2</td>
<td>33</td>
<td>33</td>
<td>97.54118</td>
</tr>
<tr>
<td>10%</td>
<td>4</td>
<td>33</td>
<td>33</td>
<td>96708935</td>
</tr>
<tr>
<td>25%</td>
<td>15</td>
<td>34</td>
<td>34</td>
<td>2.353186</td>
</tr>
<tr>
<td>50%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75%</td>
<td>28</td>
<td>33</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>90%</td>
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<td>33</td>
<td>33</td>
<td></td>
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<tr>
<td>95%</td>
<td>33</td>
<td>33</td>
<td>33</td>
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</tr>
<tr>
<td>99%</td>
<td>34</td>
<td>34</td>
<td>34</td>
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legenda: age
Andrew, 1/28/2020
Supervisor Profile in RN

- Previous functions - others

<table>
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<tr>
<th>Other Previous Functions</th>
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</thead>
<tbody>
<tr>
<td>PNAIC Instructor and Resolution 48/MEC Program Instructor PIP (Pedagogical Innovation Project)</td>
</tr>
<tr>
<td>Counselor and Instructor</td>
</tr>
<tr>
<td>Gifted Students</td>
</tr>
<tr>
<td>Pedagogical Support and Distance Tutor at UFRN</td>
</tr>
<tr>
<td>Pedagogical Supervision (EFCEM)</td>
</tr>
<tr>
<td>Despertar</td>
</tr>
<tr>
<td>ASG</td>
</tr>
<tr>
<td>Theology</td>
</tr>
<tr>
<td>Learning Acceleration</td>
</tr>
<tr>
<td>Administrative Coordinator and Director at 10th DIREC, Caeco-RN</td>
</tr>
<tr>
<td>RN Alfabetizado and PNAIC</td>
</tr>
<tr>
<td>RPTV Technician</td>
</tr>
<tr>
<td>2nd Language Schools, English Teacher and Pedagogical Coordinator (São Paulo, Natal, Mossoró/Caraúbas)</td>
</tr>
<tr>
<td>Professor Instructor of the Educational Technology Nucleus</td>
</tr>
<tr>
<td>Coordinator of Private School Network 3 years</td>
</tr>
<tr>
<td>Projects and Programs Coordinator</td>
</tr>
</tbody>
</table>
Role of Supervisors:

Connecting results with the Program’s Logic Model
(1) **They are tutors**: they complete the service training process of school managers, leading them to practice the management circuit, helping out with doubts and difficulties that arise in its application.

(2) **They are Counselors**: they support the study on causes and solutions for school problems and suggest what to do. They are like experienced managers providing counseling to schools.

(3) **They are Intermediaries between regional offices and schools**: They circulate information and articulate school needs with actions from regional offices and Department of Education.

(4) **They are implementation guardians of the circuit**: They track, verify and demand fulfillment of the stage's specific actions.

Source: Jovem de Futuro: concepts, actions and theory of change. Section 4.3 Supervision and support, page 29.
### Indicator: Tutor

#### Items related to the attribution:
- q14, q15, q20, q21, q22, q23 and q24

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>q14.</td>
<td>Supervisor clarifies doubts on topics addressed in the Managing for Results training</td>
</tr>
<tr>
<td>q15.</td>
<td>Supervisor proposes ways for interpreting the educational indicators</td>
</tr>
<tr>
<td>q20.</td>
<td>Supervisor takes ownership over the school's diagnosis, problems and needs</td>
</tr>
<tr>
<td>q21.</td>
<td>Supervisor guides the forming of the management group or pair before starting the planning</td>
</tr>
<tr>
<td>q22.</td>
<td>Supervisor discusses the state's educational targets</td>
</tr>
<tr>
<td>q23.</td>
<td>Supervisor discusses the school's educational targets</td>
</tr>
<tr>
<td>q24.</td>
<td>Supervisor provides orientation on preparing the schedule for executing actions</td>
</tr>
</tbody>
</table>
Indicator: Counselor

Items related to the attribution:
q16, q17, q26, q27, q37, q38, q39, q40, q41, q42, q43, q44 and q45

q16. Supervisor discusses the root causes that negatively affect the IDEBES
q17. Supervisor guides the decision-making based on evidence
q26. Supervisor revises the action maps prepared in Planning
q27. Supervisor provides orientation on the continuous recording of progress of all actions
q37. Supervisor helps reformulate actions
q38. Supervisor helps identify causes of the problem
q39. Supervisor anticipates potential problems
q40. Supervisor proposes solutions
q41. Supervisor forms study groups
q42. Supervisor listens to those involved in the problem being faced
q43. Supervisor researches bibliography about the theme and consults with experts
q44. Supervisor analyzes past experiences or experiences from other schools
q45. Supervisor incentivizes collaboration in network among schools
Indicator: Intermediary between regional board and schools

Items related to the attribution:
q13, q25 and q30

q13. Supervisor demonstrates full knowledge of programs and projects available at the Department of Education

q25. Supervisor discusses with schools the Department’s stipulations and guidelines

q30. Supervisor provides answers to requests submitted to Regional Offices
Indicator: Implementation guardian of the circuit

Items related to the attribution:
q18, q28, q29, q32, q33, q34, q35 and q36

<table>
<thead>
<tr>
<th>Question</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>q18</td>
<td>Supervisor assists in the use of SGP (Project Management System) as a management tool</td>
</tr>
<tr>
<td>q28</td>
<td>Supervisor monitors whether actions from the Action Plan are being executed</td>
</tr>
<tr>
<td>q29</td>
<td>Supervisor monitors whether actions from the Action Plan are being input in the SGP</td>
</tr>
<tr>
<td>q32</td>
<td>Supervisor provides orientation of the dissemination of quarterly results in relation to the annual target</td>
</tr>
<tr>
<td>q33</td>
<td>Supervisor helps in the identification of best practices</td>
</tr>
<tr>
<td>q34</td>
<td>Supervisor helps assess the execution of tasks and delivery of products</td>
</tr>
<tr>
<td>q35</td>
<td>Supervisor analyzes structural indicators with ease</td>
</tr>
<tr>
<td>q36</td>
<td>Supervisor helps analyze Execution data that will be used to Correct Routes</td>
</tr>
</tbody>
</table>
### Descriptive Statistics of New Indicators

#### Descriptors - ES x RN

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tutor Indicator</td>
<td>3.476</td>
<td>0.512</td>
<td>3.056</td>
<td>0.614</td>
<td>0.000</td>
</tr>
<tr>
<td>Counselor Indicator</td>
<td>3.421</td>
<td>0.474</td>
<td>3.106</td>
<td>0.671</td>
<td>0.000</td>
</tr>
<tr>
<td>Intermediary Indicator</td>
<td>3.482</td>
<td>0.489</td>
<td>3.069</td>
<td>0.679</td>
<td>0.000</td>
</tr>
<tr>
<td>Guardian Indicator</td>
<td>3.731</td>
<td>0.364</td>
<td>3.397</td>
<td>0.668</td>
<td>0.000</td>
</tr>
<tr>
<td><strong>Attributions Indicator</strong></td>
<td><strong>3.487</strong></td>
<td><strong>0.433</strong></td>
<td><strong>3.132</strong></td>
<td><strong>0.638</strong></td>
<td><strong>0.000</strong></td>
</tr>
</tbody>
</table>

**Observations**
- ES: 173
- RN: 141
Traits

x

Attributions

(Logic Model)
Correlation between age and attributions

Age vs. Tutor

Age vs. Counselor

Age vs. Intermediary

Age vs. Guardian
Correlation between experience and attributions

Experience vs. Tutor

Experience vs. Counselor

Experience vs. Intermediary

Experience vs. Guardian
Connecting outcome measures with Supervisor Attributions

Following the Program’s Logic Model
Regression of the Attributions Indicator in result measurements

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Management Quality</th>
<th>Tasks Execution</th>
<th>Operational Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ES</td>
<td>RN</td>
<td>ALL</td>
</tr>
<tr>
<td>Attribution</td>
<td>0.168</td>
<td>0.052</td>
<td>0.143</td>
</tr>
<tr>
<td></td>
<td>[-0.022 ; 0.358]</td>
<td>[-0.101 ; 0.205]</td>
<td>[0.030 ; 0.257]</td>
</tr>
<tr>
<td></td>
<td>sig.</td>
<td>not sig.</td>
<td>sig.</td>
</tr>
<tr>
<td></td>
<td>2%</td>
<td>1%</td>
<td>3%</td>
</tr>
</tbody>
</table>

When coefficients without EF and EF are statistically equal, we opted to show the regression coefficient without EF.

When coefficients without EF and EF are statistically different, we opted to show the regression coefficient with EF.
Analysis of the estimated coefficient’s contribution in the result variable
(percent variation)

<table>
<thead>
<tr>
<th>Analysis of coefficients</th>
<th>Result: Tasks execution</th>
<th>Result: Management quality</th>
<th>Result: Operational result</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ES</td>
<td>RN</td>
<td>ALL</td>
</tr>
<tr>
<td>Y-bar</td>
<td>0.97</td>
<td>0.78</td>
<td>0.87</td>
</tr>
<tr>
<td>Attribution indicator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beta</td>
<td>0.018</td>
<td>2.436</td>
<td>, ,</td>
</tr>
<tr>
<td>Avg. attribution indicator</td>
<td>3.53</td>
<td>3.16</td>
<td>3.34</td>
</tr>
<tr>
<td>Proportional beta</td>
<td>0.01</td>
<td>0.18</td>
<td>0.05</td>
</tr>
<tr>
<td>How much varies in the result?</td>
<td>0.98</td>
<td>0.96</td>
<td>0.92</td>
</tr>
<tr>
<td>Percent variation</td>
<td>3’ #</td>
<td>45’ #</td>
<td>8’ #</td>
</tr>
<tr>
<td>Note:*p&lt;0.01; **p&lt;0.05; ***p&lt;0.23;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*p&lt;0.32#</td>
<td></td>
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</table>
Quality of Supervision: analysis based on the perception of managers

Factor analysis with data from ES and RN
Assessment of managers regarding the work of supervisors and the role of supervision

Exercise: Conduct a joint exploratory factor analysis of the two states

ES 2017
173 interviews conducted

RN 2018
141 interviews conducted
Common factors – ES and RN

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor1</th>
<th>Factor2</th>
<th>Uniqueness</th>
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<td>0.6973</td>
<td>0.0339</td>
<td>0.4782</td>
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<td>q10</td>
<td>0.7364</td>
<td>0.0928</td>
<td>0.3497</td>
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<tr>
<td>q13</td>
<td>0.6161</td>
<td>0.1989</td>
<td>0.4026</td>
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<td>q14</td>
<td>0.6878</td>
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<td>q15</td>
<td>0.6152</td>
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<tr>
<td>q16</td>
<td>0.6614</td>
<td>0.1946</td>
<td>0.3375</td>
</tr>
<tr>
<td>q17</td>
<td>0.6482</td>
<td>0.2388</td>
<td>0.2977</td>
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<tr>
<td>q18</td>
<td>0.6191</td>
<td>0.2593</td>
<td>0.3160</td>
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<tr>
<td>q20</td>
<td>0.6946</td>
<td>0.1298</td>
<td>0.3696</td>
</tr>
<tr>
<td>q21</td>
<td>0.6183</td>
<td>0.1682</td>
<td>0.4381</td>
</tr>
<tr>
<td>q23</td>
<td>0.6808</td>
<td>0.1835</td>
<td>0.3212</td>
</tr>
<tr>
<td>q24</td>
<td>0.6230</td>
<td>0.1800</td>
<td>0.4163</td>
</tr>
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<td>q25</td>
<td>0.5992</td>
<td>0.2120</td>
<td>0.4112</td>
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<tr>
<td>q26</td>
<td>0.1796</td>
<td>0.6125</td>
<td>0.4326</td>
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<td>q28</td>
<td>0.2018</td>
<td>0.5788</td>
<td>0.4543</td>
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<td>q29</td>
<td>0.2004</td>
<td>0.5486</td>
<td>0.4991</td>
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<td>q30</td>
<td>0.0693</td>
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<td>0.5288</td>
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<td>q32</td>
<td>0.1738</td>
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<td>q33</td>
<td>0.0654</td>
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<td>0.3904</td>
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<td>q34</td>
<td>0.0452</td>
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<td>0.3317</td>
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<td>q35</td>
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<td>q36</td>
<td>0.1142</td>
<td>0.7278</td>
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<td>q39</td>
<td>0.0593</td>
<td>0.6863</td>
<td>0.4662</td>
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<td>q41</td>
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<td>0.7380</td>
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<td>q45</td>
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<td>q51</td>
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<td>0.5025</td>
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<td>q52</td>
<td>0.7271</td>
<td>-0.0138</td>
<td>0.4857</td>
</tr>
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<td>q53</td>
<td>0.8858</td>
<td>-0.1727</td>
<td>0.4081</td>
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<td>q54</td>
<td>0.8793</td>
<td>-0.1807</td>
<td>0.4253</td>
</tr>
<tr>
<td>q55</td>
<td>0.8753</td>
<td>-0.1877</td>
<td>0.4375</td>
</tr>
</tbody>
</table>

**Factor 1**
Items reflect the perception of school management based on the personal traits of supervisors
[Knowledge, Relationship with managers, and Planning support (P)]

**Factor 2**
Items reflect the perception of school management based on the supervisor’s adherence to the Program’s protocol
[Execution support (D), Monitoring (C) Action Plan (P), and Problem-solving support (A)]
Traits

x

Factors
Correlation between age and factors

Age vs. Strategic Competences Factor

Age vs. Executive Competences Factor
Correlation between experience and factors

Experience vs. Strategic Competences
Factor

Experience vs. Executive Competences
Factor
Results Indicators:
Descriptive analysis
### Descriptors - ES x RN

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Note: For Management Quality, in ES, we only used the grade provided by the first evaluator, in order for the methodology to be comparable to the one used in RN in 2018.
Visit Quality Effect -
Results:
### Visit Quality Effect: Tasks Execution Indicator

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Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.10
## Visit Quality Effect: Tasks Execution Indicator

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Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.10

---

**F1 - Personal traits:**
- ES => more bureaucratic is not good
- RN => still not running properly

**F2: Adherence to the program:**
- ES and RN – positive correlation with program execution
## Visit Quality Effect: Management Quality Indicator

The table below presents the results of a regression analysis for the Visit Quality Effect: Management Quality Indicator. The table includes the variables, their coefficients, and the adjusted R-squared values for different models.

### Variables

<table>
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<tr>
<th>Variables</th>
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<td>Manager: participated in IU's training</td>
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<td>Manager: age</td>
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<td>Manager: at least 5 years in the school</td>
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<td>Manager: at least 5 years in the function</td>
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<td>School priority</td>
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<td>Management Complexity Index</td>
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<td>Socioeconomic Level Index</td>
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<td>Supervisor: female</td>
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<tr>
<td>Supervisor: age 50+</td>
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<td>Supervisor: more than 20 years in SEE</td>
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<td>Supervisor: was director or regional counselor</td>
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<td>Supervisor: participated in school management course besides IU’s</td>
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### Coefficients

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### Observations

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Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.10
Visit Quality Effect: Management Quality Indicator

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Robust standard errors in brackets
*** p<0.01, ** p<0.05, * p<0.10

F1: Personal traits do not affect management quality

F2: adherence to the program’s protocol has a positive correlation with management quality in ES
## Visit Quality Effect: Operational Results Indicator

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Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.10
## Visit Quality Effect: Operational Results Indicator

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Robust standard errors in brackets

*** p<0.01, ** p<0.05, * p<0.10
## Questions in common: factors and attribution

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Field survey with school managers:

- In a descriptive manner: supervisors in RN are always not-as-well evaluated as supervisors in ES S
- Constructs extracted from this survey:
  - Factor 1: Personal traits are not correlated with the outcome measures tested
  - Factor 2: Adherence to the Program’s protocol only has a positive correlation with the tasks execution measure
Conclusions

Correlations between traits and indicators of supervision quality:

• **Age x Attributions(•):**
  - Little heterogeneity of ‘age’ trait among supervisors and little correlation

• **Experience x Attributions(•):**
  - Positive and high correlation, that is, more time in the department is correlated with better performance in all attributions tested

• **Previous experiences:**
  - Having worked as professor, pedagogical coordinator, or regional office technician is homogenously spread along the age and experience distributions

(*) Same results for the constructs extracted from the perception questionnaires: strategic competences factor and executive competences factor.
Conclusions

Association between the attributions indicator and tasks execution indicator:

• Correlations always positive and with statistical significance, and at least 10% confidence, particularly in the RN sample.
• High coefficients for RN.
• THAT IS, we found some relationship between attributions and the tasks execution measure, and of high magnitude.
• Effect percentages are high.
• Hypotheses for this result:
  • Given the program’s lower maturity in RN, the supervisor role has greater effect in the first effect layer outlined in the Theory of Change, which is through the execution of tasks
Conclusions

Association between the attributions indicator and management quality indicator:

- Correlation always positive, but only reaches statistical significance of 10% confidence in ES.
- By the Theory of Change, the management quality indicator measures an intermediary step between the Circuit functioning and generating result, whereby for the state with greater maturity in the program, supervision’s performance reaches management level.
- Effect percentages are modest.
Conclusions

Association between the attributions indicator and the operational results indicator

• By the Theory of Change, the operational results indicator measures the last phase the supervisor’s work should reach: the school’s operational level.
• We did not find any statistically significant correlation between the attributions indicator and the operational results measure.