CONCORDi 2021: Industrial innovation for competitive sustainability
EARTO Part 2 - The role of RTOs to deliver impact on the economy and for society

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The impact of TNO (hyperlink)

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Methods

<table>
<thead>
<tr>
<th>Matching</th>
<th>Average Treatment Effect [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propensity Score Matching</td>
<td>14,4</td>
</tr>
<tr>
<td>Nearest Neighbour Matching</td>
<td>16,8</td>
</tr>
</tbody>
</table>

Results

Companies that use TNO service have a **14 - 17 % higher growth in value added growth** in the next year, in comparison to firms who conduct R&D, but do not involve TNO.
2 Measuring impact: set-up

**Treatment Group**

- R&D = 1
- TNO = 1

\[
\frac{TW_{i(TG),t+1}}{TW_{i(TG),t}}
\]

**Control Group**

- R&D = 1
- TNO = 0

\[
\frac{TW_{i(CG),t+1}}{TW_{i(CG),t}}
\]
3 Measuring impact: data used

Treatment Group
- TNO SAP system
- *Invoices*
- R&D=1
- TNO=1
- (1000 companies)
- 260 companies
- 600 observations
- Matchen: C,L,K(R&Dexp)

Control Group
- R&D=1
- TNO=0
- (7000 bedrijven)
- 1000 companies
- 2300 observations

CBS databases
- *Data from 2005 – 2018*
- CIS, R&D questionnaire