**Annex to “On Digital Front-Runners and Late-Comers: Analyzing Issue Competition over Digitization in German Subnational Elections”**

**Annex A1: Dictionary based sentence extraction**

Each sentence has been converted to lowercase and then checked for the following strings (English translation of German words in parenthesis):

* „daten“ (data),
* „data“,
* „digital“,
* „cyber“,
* „internet“,
* „online“,
* „netzpolitik“ (internet policy),
* „netzpolitisch“,
* “ ikt-“ (ICT, information and communication technology),
* “ ikt ”,
* „ it-“ (IT, information technology),
* „informationstechnologie“ (information technology),
* „kommunikationstechnologie“ (communication technology),
* „industrie 4.0“ (industry 4.0),
* „cloud“,
* „e-government“,
* „egovernment“,
* „open government“,
* „opengovernment“,
* „software“,
* „breitband“ (broadband).

Annex A2: Results from fixed effects and multilevel regression models

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| --- | --- | --- | --- |
|  | **Model 1:Election fixed effects** | **Model 2:Region fixed effects and year variable** | **Model 3:Multilevel regression** |
| Intercept | 1.68(2.77)\*\*\* | 1.27(2.42)\*\* | 0.87(2.14)\*\* |
| Years since 2010 | -a | 0.22(3.01)\*\*\* | 0.30(4.83)\*\*\* |
| Preceding government | 0.18(0.76) | 0.14(0.58) | 0.17(0.74) |
| Relative vote share change | 0.13(2.11)\*\* | 0.10(1.67)\* | 0.09(1.54) |
| Party size | 0.04(3.82)\*\*\* | 0.04(3.77)\*\*\* | 0.04(3.63)\*\*\* |
| Market-liberal stance | 0.19(6.32)\*\*\* | 0.19(6.14)\*\*\* | 0.19(6.15)\*\*\* |
| socio-culturally traditional stance  | -0.28(-4.13)\*\*\* | -0.28(-4.19)\*\*\* | -0.28(-4.16)\*\*\* |
| Previous vote share Pirate Party  | -a | 0.39(3.56)\*\*\* | 0.35(3.74)\*\*\* |
| socio-culturally traditional stance X Previous vote share Pirate Party | -0.05(-3.31)\*\*\* | -0.05(-3.27)\*\*\* | -0.05(-3.28)\*\*\* |
|  |   |   |   |
| Election fixed effects | yes | no | no |
| Region fixed effects | no | yes | no |
| Election random effects | no | no | yes |
|  |  |  |  |
| Level 2 variance | - | - | 0.11 |
| Level 1 variance | - | - | 1.41 |
| R² level 2 | - | - | 0.78 |
| R² level 1 | - | - | 0.43 |
| AIC | 548 | 540 | 579 |
|  |  |  |  |
| R² | 0.63 | 0.59 |   |
| R²-adj. | 0.53 | 0.52 |  |
| N | 162 | 162 | 162 |

*Notes:* a = Adding variable would be redundant due to covariation with elections. The fixed effects models have also been estimated using clustered standard errors for parties to correct for possible dependencies of the party branches within a party. This does not substantially alter the results depicted in the table, the pattern of significant effects remains. The multilevel model uses elections as the grouping variable and has been estimated using Restricted Maximum Likelihood. When also adding the u-shaped digitization index to the multilevel mode, the higher-level variance component is estimated close to zero. The same is true for the two higher levels when a multilevel model with three levels is estimated (parties in elections in *Länder*). \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01

Annex A3: Additional models

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| --- | --- | --- |
| **Variable** | **Model A: Without ideological variables** | **Model B:Interaction market-liberal stance X previous vote share Pirate Party** |
| (Intercept) | 1.88(5.05)\*\*\* | 1.89(4.29)\*\*\* |
| Years since 2010 | 0.23(3.54)\*\*\* | 0.28(5.16)\*\*\* |
| Digitization index U-shaped | -0.55(-2.87)\*\*\* | -0.52(-3.22)\*\*\* |
| Preceding government | 0.72(2.63)\*\*\* | 0.15(0.63) |
| Relative preceding vote share change | -0.03(-0.41) | 0.07(1.27) |
| Party size | 0.01(0.74) | 0.04(3.78)\*\*\* |
| Market-liberal stance |  | 0.19(4.81)\*\*\* |
| Socio-culturally traditional stance |  | -0.41(-7.72)\*\*\* |
| Previous vote share Pirate Party | 0.09(1.71)\* | 0.14(1.76)\* |
| Market-liberal stance X Previous vote share Pirate Party |  | -0.01(-0.63) |
| R² | 0.30 | 0.52 |
| R²-adj. | 0.27 | 0.49 |
| N | 162 | 162 |

Notes: Reference model is model 4 in Table 2 of the main document. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.