

TRUST IN ESTONIA INTERNET VOTING

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Trust in Internet elections

Trust in the electoral process is crucial for free and fair elections. Internet voting introduces an additional layer of complexity into the process by asking the voter also to trust - and if interested, to verify - that the Internet voting technology performs its declared function of ensuring secure and convenient location-independent voting. Having a certain level of trust towards Internet voting thus becomes a precondition for effective usage. Given that people cannot physically observe how their ivote is placed into a virtual ballot box, nor easily and without specialist training observe how they are counted by election officials, a non-satisfactory answer to the question "what happens to my ivote?" can discourage participation. Building and maintaining trust through transparency and verifiability is hence absolutely crucial for ivoting to be accepted by voters [4]. On the aggregate population level trust towards ivoting serves a slightly different function - high general trust level ensures voters see the election outcome as legitimate and accept the results. Estonian Internet voting therefore needs both, specific trust on the level of individuals to enable usage, and a sufficiently high aggregate trust level to ensure wide acceptance of the election outcome.

Voter attitudes and voting behavior with a particular focus on Internet voting has been studied in detail in the Estonian Internet voter study (2005-2019) conducted since 2005 originally by the European University Institute in Florence, Italy and later by the University of Tartu, Estonia. The study is a post-election cross-sectional voter behavior and attitude survey, that has covered every election with Internet voting in Estonia. This study is the source for the numbers and figures shown below.

Level of trust in ivoting

The latest parliamentary election covered by the survey was the 2019 election, where 68.7% of the voting eligible population placed themselves into the trusting or highly trusting category.

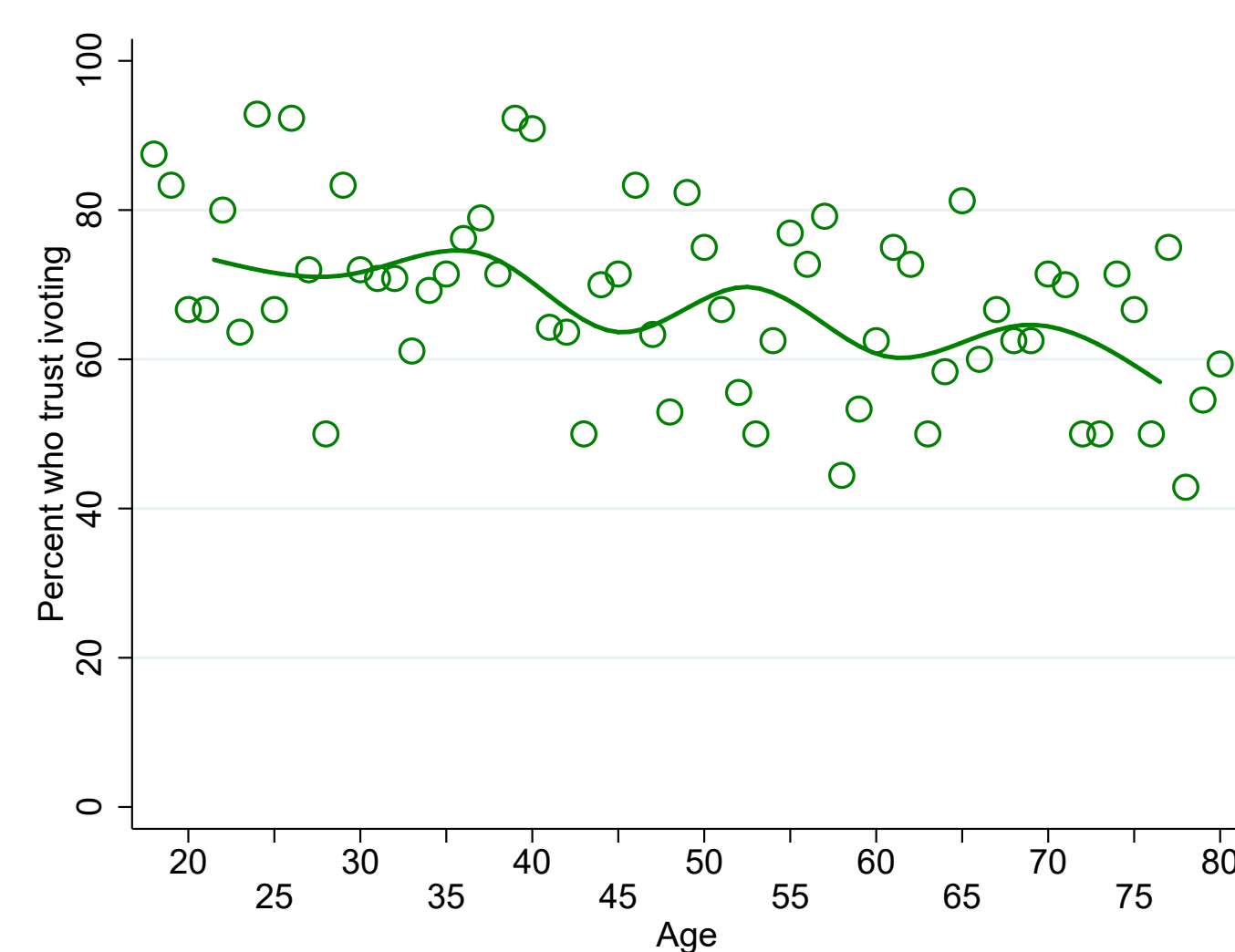


Fig. 1: Percent who trusts ivoting according to age in 2019 (cubic spline trend superimposed)

Figure 1 shows how much this trust depends on age of the respondent. We see that the level of trust is slightly higher among the younger population, but the age differences are not drastic and Internet voting seems to enjoy high trust regardless of the age group. Roughly similar patterns apply for a select other socio-economic factors, Internet voting is slightly more trusted by better educated, somewhat wealthier people with a high self-reported computer literacy level, but these differences are not consistently observable for all elections.

Trend in ivoting trust 2005-2019

Figure 2 shows how the level of trust towards ivoting has fluctuated. The average share of people who trust ivoting over the close to 15 years of this voting mode being available in Estonia has been 70%, with a peak value of close to 80% in 2007 and lowest value of just above 50% in 2013. Especially in the last three elections, from 2017 to 2019, the trust level has been stable at quite high value of almost exactly 70%.

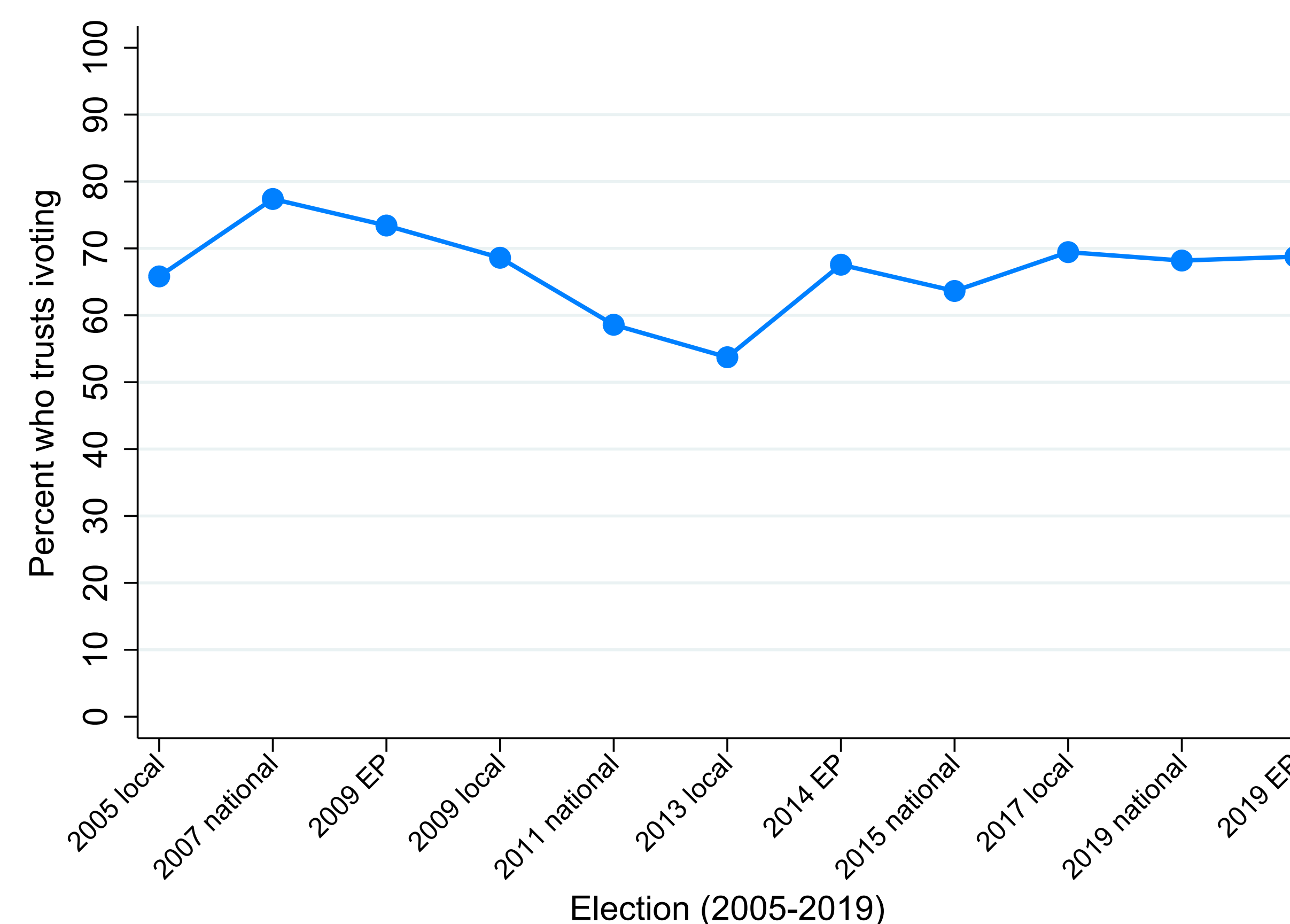


Fig. 2: Percent of voting eligible population who trusts ivoting (2005-2019)

Separate research has been conducted into the drivers and structure of trust, as well as how the ability to verify the ivote has affected trust levels. This sheds some light on why trust towards ivoting has fluctuated over the years and why it has steadily increased after the lowest ebb in 2013. The highest trust level on average is recorded among people who have actually used this voting mode, i.e. Internet voters themselves, followed by regular paper voters and least trusting group comprised mostly of non-voters.

The structure behind the high average trust level used to show some degree of polarization, where a big majority had very high trust levels and small group very low trust levels with hardly anyone in between, which is atypical for trust towards institutions [4]. Over the years however a natural slow reduction of polarization has occurred with the most trusting paper ballot voters switching to Internet voting and showing higher trust levels after that experience. A complete disappearance of polarization is still not likely, as internet voting continues to be politicized by some political parties, which in turn has strong effects on their voters' perceptions [1].

All in all, the trust levels seems robust at a high level, not overly determined by socio-demographic factors, but subject to slow change driven by the continued growth in usage and the resulting actual exposure to mostly positive user experience by previous paper ballot voters.

ivote verification and trust

One key trust building measure enacted by the State Election Office for Internet voting has been the individual level verifiability functionality introduced in 2013 [2]. This allows the voter to check separately with a smartphone if their ivote was recorded correctly by the voting application and also received by the vote collecting server. In 2013 it was used by 3.4 percent of all ivoters, this share has increased only slightly with an average four percent of Internet voters verifying their vote in subsequent elections. Figure 3 shows how confident voters are that their vote was correctly taken into account when they verified or did not verify the vote. It shows that confidence is very high regardless, but still somewhat higher among verifiers.

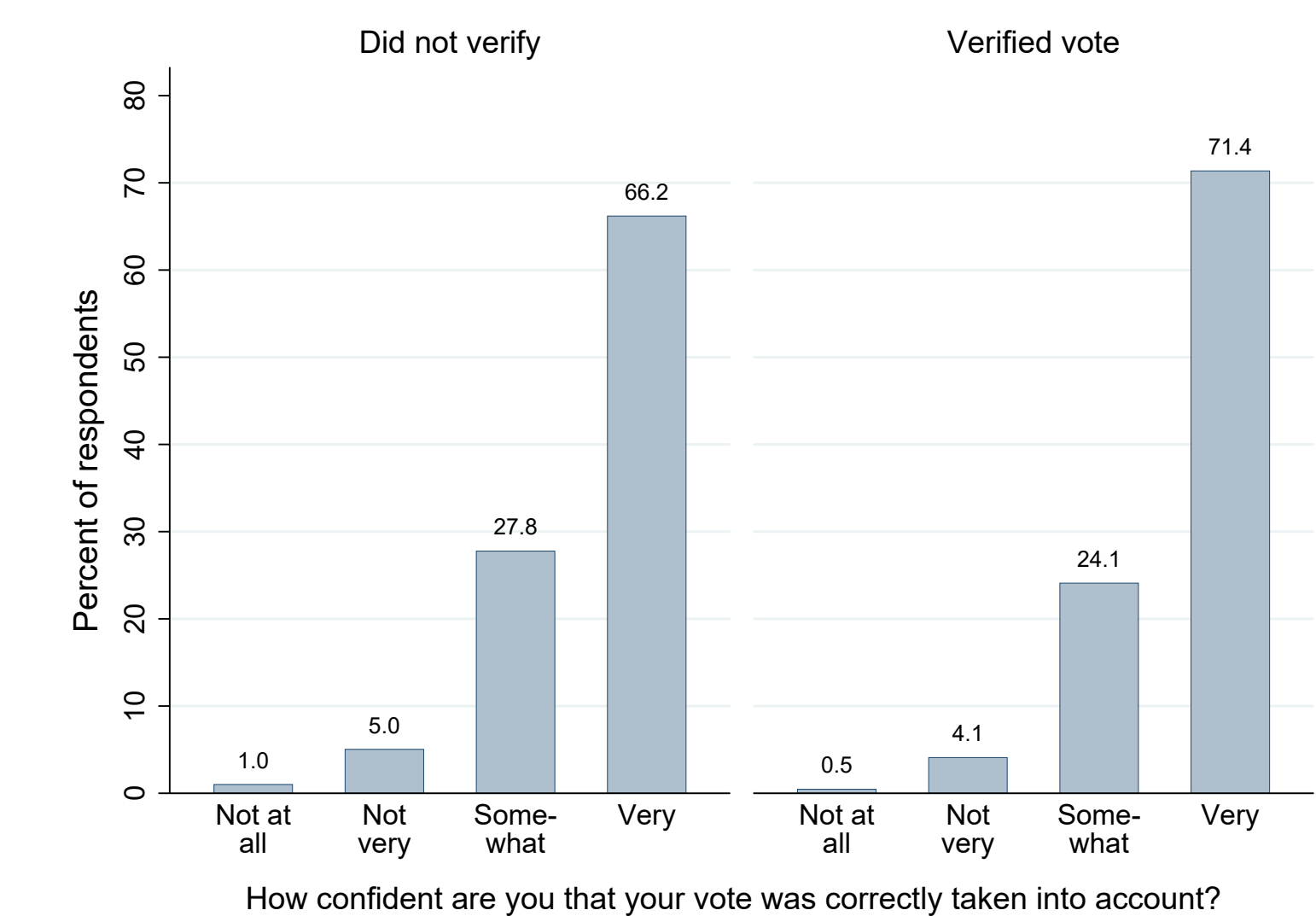


Fig. 3: Confidence in ivote taken into account for ivote verifiers and non-verifiers

Interestingly, the same analysis has shown that a substantially larger effect of increased confidence comes from knowing about the option to verify compared to not being aware of this possibility [3]. It suggests that trust can already be increased by building and communicating verification possibilities without having a large uptake of this functionality among the actual users.

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