What do voters want from an online voting experience?

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Results from user testing of a prototype i-voting app

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Executive Summary

H\Yˈ Iˈ ?ˈ XcYgˈ bchˈ cZZYfˈ fYaˈchYˈcb`]bYˈjˈch]b[ˈ bckˈ"ˈ6iˈhžˈUgˈX][ˈ]hUˈ gYfjˈ]WˈgˈUbXˈX][ˈ]hUˈ`Wˈ]h]nYb!ˈ[ˈcjˈYfbaˈYbh]bhˈYfUWˈh]cbgˈWˈcbh]biˈYˈhcˈ[ˈfckˈž voting could be offered remotely online (i-voting) in future alongside dcghUˈUbXˈ]b!ˈdYfgcbˈVUˈ`chgˈ"ˈGcˈkˈ\Uhˈaˈ]ˈ[ˈ\hˈ]!ˈjˈch]b[ˈ `cc_ˈ`]ˈ_YžˈUbXˈ\ckˈ aˈ]ˈ[ˈ\hˈjˈch]Yfgˈ`fYgdcbXˈ3ˈKˈ\Uhˈaˈ U_YgˈUbˈ]!ˈjˈch]b[ˈ YˈldYf]YbWˈYˈdcgˈ]h]jˈYˈcfˈ bYˈ[ˈUh]jˈY3

KˈYˈXYgˈ][ˈbYXˈ UˈdfchˈchˈmdYˈjˈch]b[ˈ Uddˈ hˈ\Uhˈaˈ]ffcfgˈ h\YˈhfUX]h]cbUˈ VUˈ`chˈdUdYfˈ"Kˈ YˈUgˈ_YXˈdchˈYbh]UˈjˈchYfgˈhcˈiˈgYˈ]hžˈcbˈ ˈX]ZZYfYbhˈX][ˈ]hUˈ XYjˈ]WˈgžˈUbXˈ`Wˈca dUfYXˈ]hˈ_ˈ]hˈ`h\Yˈ]b!ˈdYfgcbˈ YˈldYf]YbWˈY"ˈ Ciˈ`ghiˈXmˈ]bjcˈjYXˈ Uˈ`X]jˈYfgYˈgUaˈdˈYˈcˈZˈ'&ˈdYcdˈYˈ`fcaˈ h\Yˈ6fiˈbYˈ`Wˈcaˈaˈibˈhm k\cˈ`_ˈ]bXˈmˈ[ˈUjˈYˈh\Yf]hˈaˈ YˈhcˈhˈYghˈhˈ\Yˈ`UˈhYfbUˈ]jˈYˈjˈch]b[ˈ aˈcXYˈUbXˈ g\UfYˈh\Yf]ˈ`ZYYXVUWˈ`UbXˈcd]b]cbgˈk ]hˈ`iˈg"ˈKˈYˈUfYˈ[ˈfUhYži`ˈˈZcfˈh\Yˈ`f dUfh]W]dUh]cb"ˈCiˈfˈ`Ymˈ`ˈbX]b[ˈgˈUfY.

- H\YˈdfchˈchˈmdYˈ**app was positively evaluated,**ˈVch\ˈ]bˈhYfaˈgˈcZˈ]hgˈ XYg][ˈbˈUbXˈ`UˈmciˈhžˈUbXˈh\YˈYˈldYf]YbWˈYˈcZˈbUˈj][ˈUh]b[ˈ]ˈh\ˈhcˈWˈomˈdˈYhˈYˈ h\Yˈjˈch]b[ˈ hUg_ˈ"

- **Convenience, ease of use, simplicity and accessibility** were repeatedly mentioned as advantages of i-voting. **Security and privacy concerns**ˈkˈYfYˈaˈYbh]cbYXˈ`ZfYˈiˈYbhˈmžˈ ViˈhˈbchˈUˈkˈUmgˈUgˈ dfc\]V]hˈ]jˈY`mˈ\]ˈ[ˈ\`fˈ]g_g"

- **Two thirds say they would opt for 'i-voting' if it were available.**

- Cbˈ Uˈ Åˈ]ˈ]ˈbˈ[ˈ bYggˈhcˈjˈch]bˈcb]ˈbYˈ ÆgˈWUˈ`YˈcˈZˈ$ˈhcˈ%ˈ&žˈciˈ fˈfYgdcbXˈYbhgˈ gave an average score of 8.4.

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1.

Design choices for the prototype app

The web app prototype was implemented in the Axure RP software. It includes a monochromatic colour scheme for the main content, which is on par with a typical ballot paper, and the "#00823B $button-colour" for the colour of the buttons adopted from the GOV.UK colour palette. The typography used is of type 'Sans Serif'. It further includes a responsive web interface that allowed us to test our design features on the three different devices. We adopted

and then scaled up to the larger screens of a tablet and a desktop. However, we made a deliberate choice not to scale up the interface, but instead keep it on par with a typical ballot paper for familiarity.

H\Y˙i gYf˙Yl dYf]YbW˙k Ug˙XYg][bYX˙Zc``ck]b[˙˙U˙a]b]a U`]ght˙UddfcUWX˙fÃ˙Ygg˙]g˙
a cfYÄŁ˙`YUX]b[˙˙hc˙U˙' !gWfYYb˙i gYf˙]bhYfZUWWY"˙˙±b˙h\Y˙Ì fgh˙gWfYYbž˙U˙i gYf˙`c[g˙]b˙
i g]b[˙˙U˙dU]f˙cZ˙Ui h\Ybh]WUh]cb˙WcXYg˙g]a]˙Uf˙hc˙h\cgY˙i gYX˙Vm˙cWU`˙Ui h˙cf]h]Yg˙
k \Yb˙Wcbỉ fa]b[˙XYbh]˙g˙cb˙h\Y˙Y˙YW˙hcfU`˙fc``]b˙h\Y˙Ubbi U`˙WUbjUgg"˙˙±b˙h\Y˙
gYWcbX˙gWfYYbž˙U˙i gYf˙WUb˙gYY˙h\Y˙VU`ch˙dUdYf˙flk]h\˙']bghfi Wh]cbg˙]ghYX˙Uh˙
h\Y˙hcd˙cZ˙h\Y˙gWfYYbŁž˙UbX˙h\Ym˙UfY˙UV`Y˙hc˙WUgh˙h\Y]f˙jchY˙Vm˙W]W_]b[˙˙cb˙
h\Y]f˙dfYZYffYX˙WUbX]XUhYž̃ Vcl "˙˙±b˙h\Y˙h\]fX˙UbX˙Ì bU`˙gWfYYbž˙i gYfg˙fYWY]jY˙
U˙Wcbỉ fa Uh]cb˙a YggU[Y˙k]h\˙U˙h]a YghUa d"˙

Mobile

Tablet

Laptop
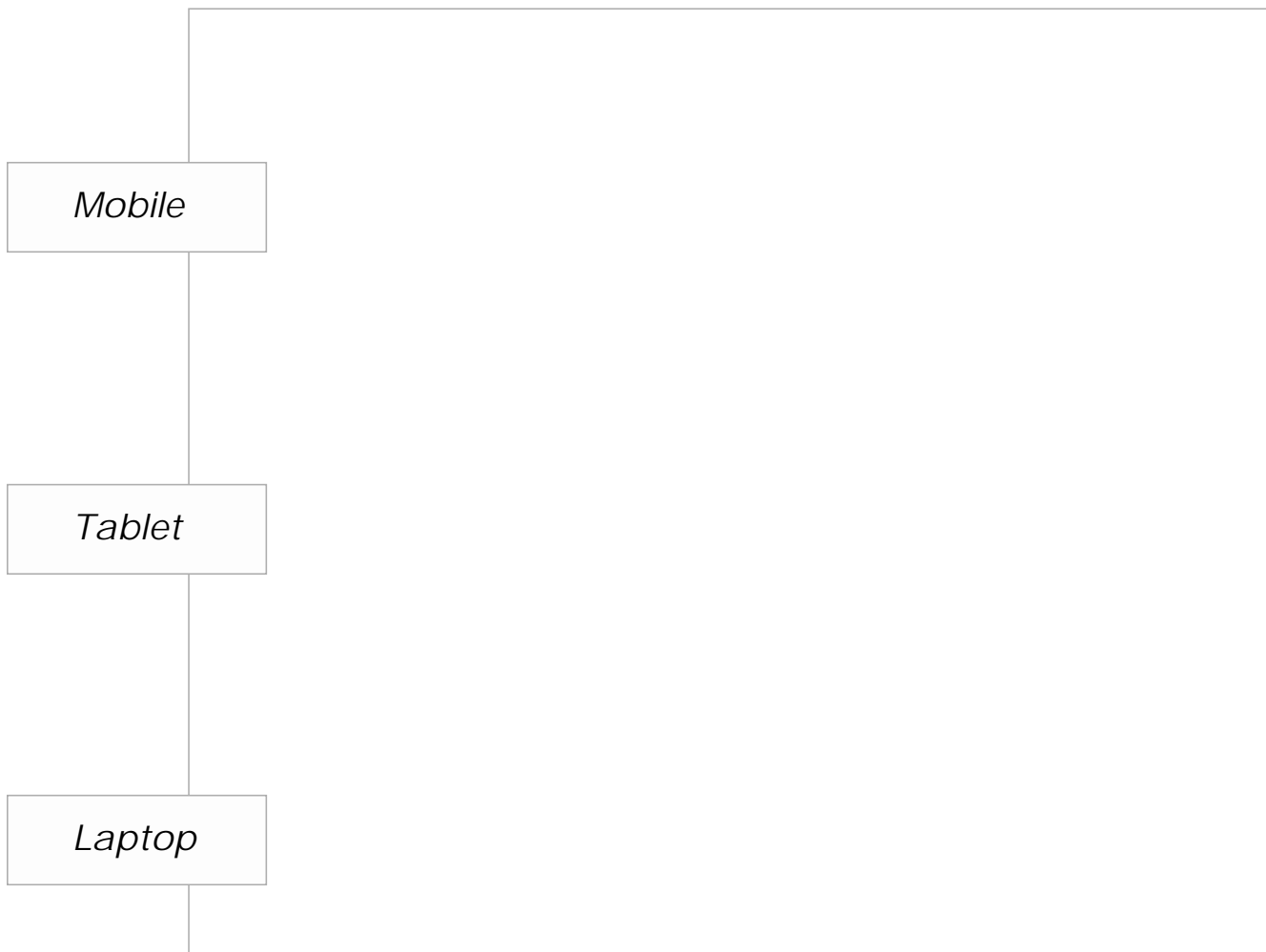
Figure 1 H\Y˙]!j ch]b[˙˙Udd˙cb˙a cV]˙Y˙fhcdŁžˈUV˙Y˙h˙fla]XX˙YŁˈUbX˙Udhcd˙flVchhca Ł˙XYj]WWg

Data collection

Ci f· dUfh]W]dUbhg· Wta d`YhYX· U· g\cfh· fY[·]ghfUh]cb·gi fj·Ym·VVZ·cfY·h·Y·i·gYf·hYg! h]b[·"··K Y·Ug_YX·Zcf·gca Y·VUW_[·fci bX· ]bZcfa Uh]cb· UVci h· h\Y· dUfh]W]dUhgž· including online experiences and be- \Uj]ci fgž·dfYj]ci g·jch]b[··YldYf]YbWYž· UbX·XYa c[fUd\]WUbX·gcW]U`·VX·UfUW·hY! f]gh]Wg·"· 5ZhYf·h\Y·i·gYf·hYgh]b[··YlYfW]g- Ygž·k Y·Ug_YX·dYcd`Y·hc··hY```i·g·k·\Uh· h\Ym·h\ci[·\h·cZ·h\Y·Udd··]b·hk·c·k·Umg·· fPĿ·h\Ym·Wca d`YhYX·U·Vf]YZ·gi fjYm·hc· fUhY·X]ZZYfYbh·UgdYWhg·cZ·h\Y·Udd/·UbX· f&Ŀ·h\Ym·g\UfYX·h\Y]f·j]Yk·g·UbX··ZYYX- VUW_·k·]h·fYgYUfWY·fg·]b·U·XYYf]YZ·]b- terview.

Image 2·I bXYfghUbX]b[·h·Y·!jch]b[· YldYf]YbW·Wca dUfYX·hc·h\Y· traditional ballot box

Data analysis

Ci f·gi fjYm·k Ug·VUgYX·cb·h\Y·g\cfh·jYfg]cb·cZ·h\Y·YghUV`]g\YX·I gYf·9 IdYf]YbWY· EiYgh]cbbU]fY"·H\]g·]bjcj·YX·fUh]cb·Y][·h·UgdUWhg·cZ·h\Y·Udd·cb·YUWY·d·UhĿcfa· gYdUfUhY·y·ffga Ufhd\cbYžhUV·Yh·UbX·`Udhcd Łžhc·m YUgi fY·k·Yh\Yf·h\Y·Udd·k Ug·

- obstructive or supportive
- complicated or easy
-]bYZ\]W]Ybh·cf·YZ\]W]Ybh
- confusing or clear

- boring or exciting
- not interesting or interesting
- conventional or inventive
- usual or leading edge

H\Y·]bhYfj]Yk ·bchYg·k YfY·k·f]hhYb·i·d·UbX·UbU`mgYX·Zcf·fYW/·ff]b[··h\Ya·Yg·UbX· ]XYUg"·H\Ym·cZZYf·U·X]fYWh·]bg][·\h·]bhc·dYcd`Y/a a YX]UhY·m a dfYgg]cbg·cZ·h\Y· Udd·žUbX·k·\Uh·h\Ym·h\]b_·UVci h·Zi hi fY·jch]b[··"·

"
We invited members of the Brunel University student and staff community to test the app in a "lab-in-the-field" setup on campus. Our respondents took part in a series of voting exercises. We asked them to tell us about their experience and opinions.

3. Findings

What do people make of the i-voting app?

Ci f fYgdcbXYbhg g\UfYX a Ubm dcg]h]jY gYbh]a Ybhg UVci h h\Y Udd" H\Ym dUfh]W `Uf`m `]_YX h\Uh ]h k Ug **easy and straightforward to use** f⁺₋ ₁ `cZ `i gYfg a Ybh]cbYX h\]gŁ" ]h k Ug gYYb Ug VY]b[ `\][\`m **convenient,** Uj c]X]b[ `h\Y bYYX `Zcf `d`Ubb]b[ `U\YUX `UbX `hfUjY``]b[ `hc `h\Y `dc``]b[`ghUh]cb `cb `h\Y `XUm `fl ₁ Ł" FYW `ff]b[`XYgW]dh]cbg]bWi XY h\Uh h\Y Udd. *"gets around hurdles of going out to vote, e.g. travel, taking time from work"* /]h k Ug *"easy to follow"ž"simple, straightforward"ž "quick"ž*UbX *"time-saving".*

H\Y XYg][b UbX `Umci h cZ h\Y Udd k Ug also praised for its **clarity, accessibility and simplicity** f⁺-₁ `cZ i gYfg fYZ\YffYX hc h\]gŁ" H\Y gWc\ f]hm WcXYg UbX `c[ ]b dfcWYgg k cf_YX k Y``ž U`h\ci [ \`bch U`` i gYfg \UX `_Ydh h\Yf Ui h\Ybh]WUh]cb WcXYg UbX \UX hc VY dfca dhYX" K Y VY`]Yj Y h\]g g[ ]j Yg Ub UWW fUhY `]bg][ \h ]bhc fYU`k cf`X Yl dYf]YbWgžVi hXYgd]hY h\Y Yl hfUghYdh\YfY k YfY bc Wca d `U]bhg UVci h h\Y Ui h\Ybh]WUh]cb dfcWYgg]hgY Ž"

H\YgY [YbYfU``m dcg]h]jY `ì bX]b[ g `UVci h h\Y Udd UfY WcffcVcfUhYX Vm ci r gi fj Ym `fUh]b[ g" GWcfYg k YfY [ ]j Yb cb U gWU`Y Zfca `!' hc `Ž' ž k]h\ `$ Ug h\Y a ]XX`Y dc]bh" 5 `\][ \`fgWcfY `]bX]WUhYg U `VYhhYr `fUh]b[ ž UbX `Ubmh\]b[`cj Yr O indicates it was positively received. **The app received a positive evaluation across all 3 platforms** fgYY `HUV`Y `%"

H\Y `\][ \Ygh gWcfYg Ma Yr[ YX Zc    û        \]    h    `fY `Yg´   U   K S U

Table 1 l gYf 9I dYf]YbWW GWcfYg. 5 \][\Yf gWcfY]bX]WUhYg U a cfY dcg]h]j Y UddfU]gU`

Mean Scores	Smartphone	Tablet	Laptop
Pragmatic			
Supportive	% &	%* *	&"$ *
Easy	%+,	% (	&"&)
Efficient	%) $	%) -	&'%
Clear	%- $	&'%	&"&)
Hedonic			
Exciting	$"*,	$"*)	0.42
Interesting	$") $	0.90	$"()
Inventive	$"+(	$"+(	0.39
Leading Edge	$"+(	$") +	$"++

Notes: Questions are coded from -3 to +3, with 0 as the middle point. Not all respondents scored each of the traits, means provided here are for all available data. For standard deviations see appendix.

H\YfY k YfY UgdYWhg h\Uh k YfY gYYb Ug `Ygg Wcbj Yb]Ybh cf UddYU]b[ "5 ff]j ]b[ Uh h\Y k YVg]hY Vm hmd]b[ ]b h\Y I F @ k Ug Zcf gca Yž dUfh]W Uf`mjcb U`ga Ufhd\cbY" H\YZUWh h\Uh h\Y XYg][ b ]fYd]WUhYX U`VU`ch dUdYf k Ug Vch\ UddfYW]UhYX UbX Wf]h]ei YX". : cf ]Ua d`Yž h\Y XYg][b k Ug *"not colourful, just black and white"* and *"too much like gov.uk"* Zcf gca Y]i gYfgž U`h\ci [\ h\]g gUa Y WWUfUWhYf]gh]Wk Ug gYYb Ug U ghfUb[h\ Vmch\Yfg k \c XYgcf]VYX h\Y *"black and white good for [the] colour blind"*ž UbX]h VY]b[*"identical to the [ballot] paper, felt comfortable"*.

K \]`Y dcg]h]jY cb h\Y k \c`Yž i gYf]I dYf]YbWY g]j Uf]YX UWfcgg h\Y `d`Uh Zcfa g" Some users found *"the scrolling and display wasn't great [on the] phone"*ž UbX dfYZYffYX h\Y `Uf[ Yf gWfYYb g]nY cZ h\Y `Udhcd UbX hUV`Yh Zcf fYUX]b[ `UbX bUj][Uh]b["]b Z]+ Uf#z YZci bX h\Uh `Ufcgg ( cZ h\Y, Y`Ya Ybhgflsupportive, easy, Ł `Udhcdg XY`j YfYX h\Y VYgh]i gYf]I dYf]YbW" C b h\Y `fma U]b]b[ ( Y`Ya Ybhgžh UV`Yhg XY`j YfYX VYhhYf gWcfYg Zcf VY]b[*interesting/* ga Ufhd\cbYg and tablets jointly for being *exciting* and *inventive*ž UbX ga Ufhd\cbYg UbX `Udhcdg `c]bh`m Zcf `YUX]b[`YX[ Y" K \]`Y h\Y a cfY `dcfhUV`Y XYj]WYg k YfY ZUjci fYX]b h\Y `hedonic UgdYWhg flYI W]h]b[žbhYfYgh]b[ž]bj YbhjYž `Udhcdg UfY W`YUf`mh\Y a cfY *pragmatic* W\c]W"

What are the bigger issues that voters are concerned about in relation to i-voting?

Hk c VfcUXYf h\Ya Yg Ya Yf[YXž fY`Uh]b[ `hc gYW f]hmž UbX h\Y gcW]c!W `hi fU` experience of voting.

GYW f]hmk Ug fU]gYX Vm' % `cZ i gYfg k \Yb Ug_YX k \Uh h\Ym X]g`]_YX UVci h h\Y]!j ch]b[`Uddž UbX Vm' ( ι `cZ i gYfg k \Yb Ug hc YI d`U]b k \Uh h\Ym k ci `X dfYZYf hc j ch]j]b!dYfgcb cf cb`]bY" H\Y a U cf]hmcZ i gYf k \c a Ybh]cbYX gYW f]hmgUk `]h Ug U dchYbh]U` f]g_ UbX WcbWfbž a Ybh]cb]b[ `]k ci `X VY *"too*

easy to manipulate"ž k]h ` ` "hacking" f]g g fY Uh]b[bch 1 gh hc h Y `c [ ]b gmghYa UbX jchYf]XYbh]l WUh]cbž Vi h U gc k \YfY h Y XUfU k ci X [c UbX \ck]h k ci X VY ghcfYX/Ug k Y `` Ug k cff]Yg Ufci bX dYcd Y "being forced to vote, coercion, privacy".

5 bi a VYf cZ i gYfg a Ybh]cbYX h Y Ui h Ybh]WUh]cb WcXYg" +h k Ug gYYb hc VY "a good option so long as [it] can identify one person"ž Vi h dYf\Udg bYYXYX Zi fh\Yf "layers of security, maybe integrate [a] passport check" cf gca Yh\]b[U]b hc]XYbh]l WUh]cb WcYWg bYYXYX Zcf cb]bY VUb_]b[" 6Y]b[UV Y hc]!jchY remotely still required a secure "physical environment… needs to be a private place".

Cb h Y ch\Yf \UbXž gca Y i gYfg gYYa YX fY`Ul YX UVci h h Y gYWi f]hm UgdYWhg UbX a Ybh]cbYX h Y]f "trust in the process"" CbY i gYf Yl d`U]bYX h Ym "use [the internet] for online banking and pretty much everything else" so did not \Uj Y Ubm]ggi Yg k]h hfi gh h Y a gYj Yg Ui h Wci X gYY h\Uh ch\Yf g a][h"C h\Yfg gi [[YghYX]h WUi X VY a cfgYWi fY hc j ch]cb`]bY h\Ub ]b dYfgcbž]Ybh YfVYWUi gY "it's easy to tamper with ballot papers"; cf hc Ujc]X dch Ynh]U `WcYfW]cb Uh h Y VU `ch Vcl `fk]h fYZYfYbWY hc U WcbhYl h ci hg]XY h Y I ?Ł g]bWY j ch]cb cb]bY "can be remote and in the privacy of our own home". Some of our users felt h\Uh gYWi f]hm]ggi Yg Wci X VY UXXfYggYXž Vi h h Y]bZcfa Uh]cb UbX YXi WUh]cb cZ jchYfg Ug U df]cf]hm" H Y Udd `]hgY Z Wci X \Uj Y dfcj]XYX a cfY]bZcfa Uh]cb UVci h h Y gYWi f]hm cZ h Y jchY hc fU]gY hfi gh]b h Y UWhcZ]!jch]b[

5 gYWcbX h\Ya Y fY`UhYX hc h Y ]b!dYfgcb "election experience"ž "ceremony" and "social ritual" cZjch]b[ " K \]`Y fU gYX cb]m Vm U a]cf]hm cZ fYgdcbXYbhg fl+ı cZ i gYfg k \Yb Ug_YX UVci h]!jch]b[ž %ı k \Yb Ug_YX hc Yl d`U]b h Y]f dfYZYfYbWY Zcf cb]bY cf ]b!dYfgcb jch]b[ Łž ]h k Ug U dUgg]cbUhY`m \Y`X j ]Yk . h Y "physical act of voting [is] more of an occasion"ž UbX ]h k ci `X "lose its   . Voting in-person was "democracy in action"ž]a dcfhUbh hc VY dUfh cZ h Y "community…being part of a bigger exercise". +h]g k cfh bch]b[h Uh h\]g dYfWYdh]cb »   ]   »   h

Do attitudes change after testing the prototype app?

@cc_]b[˙U¨]hh˙Y˙XYYdYf˙k Y˙]XYbh]Żm˙h\fYY˙[fci dg˙cŻˇi gYfgžk \c˙k Y˙WUb˙XYgWf]VY˙
Ug˙a U]bhU]bYfgž]a dfcj Yfg˙UbX˙XYW]bYfg.˙

- *% ˙cŻˇfYgdcbXYbhg˙cŻŻfYXˇ]XYbh]WU˙gWcfYg˙VYŻcfY˙UbX˙UŻhYf˙h\Y˙hf]U˙
  (maintain)
- ˙&ı ˙]bX]WUhYX˙Ub˙]bWfYUgYX˙]_Y˙]\ccX˙cŻˇjcth]b[˙cb˙]bY˙f]]a dfcj YXŁ
- +ı ˙gU]X˙h\Ym˙k YfY˙˙Ygg˙]]_Y˙m˙hc˙Xc˙gc˙fKYWC]b]b[Ł

H\cgY˙k \cgY˙fUh]b[g˙ghUm˙YX˙h\Y˙gUa Y˙k˙fYžcn ˙h\Y˙k \c˙Yžei]hY˙k]˙]b[˙hc˙jcthY˙
cb]bY˙U˙fYUXm˙fa YUn˙gWcfY˙cŻ, ˙"˙ ˙ci h˙cŻˇ%Ł"�+b˙WcbhfUghž˙h\cgY˙fYgdcbXYbhg˙
k \cgY˙]]_Y]\ccX˙cŻˇjcth]b[˙cb]bY˙]bWfYUgYXžgUk ˙h\Y]f˙a YUb˙gWcfY˙]bWfYUgY˙
Wcbg]XYfUV˙m˙Żfca ˙*"+˙VYŻcfY˙h\Y˙hf]U˙hc˙, "+˙UŻhYf˙5 a cb[˙gh˙h\Y˙ga U˙˙bi a VYf˙
cŻˇfYgdcbXYbhg˙k \cgY˙gWcfY˙XYWfYUgYXžh\a˙Y˙UbgžŻY˙˙Żfca ˙- "$˙hc˙, "$"**Overall,
experience of testing the i-voting app either maintained or increased
willingness to vote online amongst those who were initially more sceptical.**

Who was more inclined to i-vote?

K ca Yb˙k YfY˙a cfY˙]]_Y]˙m˙hc˙VY˙dcg]h]jY˙UVci h˙!˙jcth]b[˙Vch\˙dfY˙UbX˙dcgh˙h\Y˙
d]˙ch˙: c¨ck]b[˙h\Y˙hf]U˙žh\Y˙a YUb˙gWcfY˙cf˙k ca Yb˙Ug˙-˙" ž˙Wca dUfYX˙k ˙]h˙
, "$˙Żcf˙a Yb"K Y˙U˙gc˙cVgYfj Y˙h\]a dUWh˙cŻˇk]XYf˙]bhYfbYh˙VY\Uj]ci f˙cb˙h\Y˙
k]˙]b[bYgg˙hc˙jcthY˙cb]bY"˙5 g˙k Y˙k ci ˙X˙Y]dYWhž˙h\cgY˙k \c˙i gYd˙h\Y˙]bhYfbYh˙
a cgh˙fY[i ˙Uf˙mŻcf˙VUb_]b[žg\cdd]b[˙UbX˙\cVV]Yg˙k YfY˙a cfY˙]]_Y]m˙hc˙Żuj ci f˙
cb]bY˙jcth]b[žk]h\˙h\Y˙a UWh˙cŻVUb_]b[˙VY]b[˙dUfh]W˙Uf˙mghfcb[žV˙k b˙k]˙]b˙
h\Y˙ga U˙˙gUa d˙Y˙5 [Y˙]g˙U˙gc˙U˙dfYX]Whcf˙Gd]\hh]b[˙h\Y˙gUa d˙]bhc˙hk o ˙Yei U˙
[fci dgž˙k Y˙cVgYfj Y˙h\Uh˙h\cgY˙U[YX˙%!&(˙k YfY˙a cfY˙]]_Y]˙m˙hc˙Żuj ci f˙!˙jcth]b[ž
Vch\˙VYŻcfY˙UbX˙UŻhYf˙h\Y˙hf]U"˙: c¨ck]b[˙h\Y˙hf]U˙žh\cgY˙U[Y˙% ˙hc˙&(˙gWcfYX˙
U˙a YUb˙cŻ, ˙* ˙Wca dUfYX˙k ˙]h˙, ˙%Żcf˙h\cgY˙U[YX˙&) ˙UbX˙UVcj Y"K Y˙cVgYfj Y˙
U˙g]a]˙Uf˙U[Y˙YŻŻYWh˙k \Yb˙Wca dUf]b[˙dfYŻffYX˙a cXY˙cŻˇjcth]b["˙H\Y˙a YUb˙
U[Y˙cŻˇh\cgY˙dfYŻff]b[˙cb]bY˙jcth]b[˙k Ug˙&-ž˙Wca dUfYX˙k]h\˙˙*˙Żcf˙h\cgY˙
favouring voting in-person

Cj YfU˙ž XYgd]hY˙ h\Y˙ dcg]h]jY˙ ˙j Y˙g˙ cŻ˙ k]˙]˙]b[bYgg˙ hc˙ jcthY˙ cb]bY˙ cj YfU˙ž
U˙gi VghUbh]U˙˙a]bcf]hm]gh]˙`˙ŻUj ci fYX˙h\Y˙]b!dYfgcb˙Żcfa ˙cŻˇjcth]b[˙"˙H\Y˙j]XYbWY˙
gi [[Yghg˙h\]g˙Wci ˙X˙VY˙fY˙UhYX˙hc˙h\fYY˙VfcUX˙ŻUWhcfg˙X]gWi ggYX˙UVcj Y.˙
fPŁ˙gYW˙f]hm˙WcbWYfbgžžž˙f&Ł˙dfYŻfYbWYg˙Żcf˙UbX˙W˙ffYbh˙i gU[Y˙cŻˇX]˙]hU˙˙XYj]WYgž
dUfh]W˙Uf˙mga Uf˙h˙d\cbYgžUbX˙f˙Łh\Y˙a cfhUbWY˙cŻˇjcth]b[˙]b!dYfgcb˙cb˙gcW]U˙
and cultural grounds.

″ *Those aged 19-24 were more likely to favour i-voting, and women were more likely to be positive about i-voting both before and after the trial.*

Which device would people prefer to use, if i-voting were available?

<Uj]b[˙hf]YX ˙U``' ˙X][ ]hU`˙XYj]W̌gž̌k Y˙Ug_YX˙i gYfg˙k \]W̌˙cbY˙h\Ym̌k ci ˙X˙VY˙
a cgh`]_Y`m̌hc˙i gY˙g\ci ˙X˙]!j ch]b[˙VY˙Uj U]̌UV˙Y"˙H\YfY˙k Ug˙U˙W̌YUf˙dfYZYfYbW̌Y˙

4. Conclusions and recommendations

K Y˙XYg][bYX˙U˙dfchchmdY˙]!j ch]b[˙UddžUbX˙hYghYX˙h\˙]g˙k]h\˙U˙X]j YfgY˙fUb[Y˙ cZ" &˙dchYbh]U`jchYfg˙Uh˙Ub˙]b!XYdh\˙i gYf˙Yl dYf]YbcY`¨ ¨UV˙" **We learned that:**

- **ı ˙cZ˙i gYfg˙k ci ˙X˙VY˙k]`]b[˙hc˙!jchY˙]Z h\YfY˙k Ug˙h\˙Y˙cdh]cb/˙'(ı ˙

Appendix

Thematic analysis of interviews

Table 2

1. What did you like about the app?

9Ugmž]a d`Yž ghfU][\hׁcfk UfX`hc` use	ÃYUgY`cZ`i gYÄˉfℓ8`%ˍˍ Ãg]a d`YžghfU][\hׁcfk UfXÄˉfℓ8`)ℓ ÃYUgm·hc`Zc``ck Äˉfℓ8`**ℓ	&)ˉi gYfg fℓ+ˏɪ ℓ
8Yg][b`UbX``Umci h` cZ`h\Y`Udd	Ãg]a d`]\]hmžX]fYÄh·a UhÄX`hc`h\Y`dUdYf""bc`k Y]fX` Wˉc`ci fg·cf`g\UdYgÄˉfℓ8`*ℓ ÄWYUfˊ]bhYfžUWУ·!·⅛gh·\]_Y`dUdYfÄˉfℓ8`(+ℓ Ãbch·hcc`a Ubmׁei Ygh]cbgÄˉfℓ8`*(ℓ	22 users fℓ*-ˏɪ ℓ

2. What did you like about the app?

8Yg][b`UbX``Umci h	ÃE F `WˉcXY`YUg]YfÄˉfℓ8`(ℓ Ãhcc`g]a d`YžWˉci `X`\Uj Y`\cj Yf`YℤYWhgÄˉfℓ8`%Ⅼˍ Ãg\Wˉc``]b[`UbX`X]gd`Um·k Ugb√₣[fYUh·cb`d\cbYÄˉfℓ8`&*ℓ Ãd\cbY`!·hmd]b[`h\Y`i fžYUg]hc·a]ghmpžⅤi h·c_`cb` `Udhcp`UbX`hUV`YhYÄˉfℓ8`'-ℓ	% fℓ$ɪ ℓ
GYWˉf]hmžUi h\Ybh- WUh]cbžUbX`hfi gh	ÃJˉch]b[`g\ci `X`bch·VY`cb]bY`!·hcc`YUg]hc`a Ub]di `UhYÄ· fℓ8`'ℓ ÃbYYXg·Yl hfU`UmYf`cℤgYWˉf]hmÁˍa UmⅤY`]bhY[fUhY`dUgg- dcfh·WЩYUÄ·fℓ8`)-ℓ Ãk \YfY`]g·OXUhUⓄVУ·b[`ghcfYX3Äˉfℓ8`*$ℓ	%$ˉ fℓ%ℓ ℓ

3. If you did vote online, which one platform would you be most likely to use? What are the main reasons for your preference?

7cbj Yb]YbWУ·UbX` ease	Ãga Ufhd\cbY`YUg]i gY``Udhcp`fY[i `Uf`mÄˉfℓ8`)+ℓ Ãi gY`d\cbY`U``h\Y`h]a YžÄˍi `WℓÄˉfℓ8`*(ℓ	% fℓ)-ˏɪ ℓ
Size of screen and/or keyboard on device	ÃV[[`Yf`gWˉfYYb`Á`YUg]Yfhc·i gYÄˉfℓ8`+ℓ Ã\Y`dg·fYUX]b[``Á·gWˉYYb`g]nžYUgm·hc`Vfck gÄˉfℓ8`**ℓ	%% (34%)

4. If you had the choice, would you prefer to vote online or in-person? What are the main reasons for your preference?

7cbj Yb]YbWУ·ž gdУYXžYℤ[W]YbWm	Ã[ck Yf`UfℤYf·hc`Ybhfmžׁbch\Uj `]b[`hc·hfUj Y`Äˉfℓ8`,ℓ ÃUjc]X`\i fX`Yg·UbX`\UggУ·gÄˉfℓ8`))ℓ	% fℓ)-ˏɪ ℓ
Security and pri- vacy	ÃdYcd`Y`Wci ·X`VWXYUh·UbX`a]gWУW·UhУ""a Ub]di `UhY` dYcd`Уˊ]b`WXUb[`Y·cℤgcⓁhk UfYÄˉfℓ8`ˈℓ ÃK ci `X`k U]hׁhc·gYY`[cj Yfba Ybh+H`Zcf·a cfY`Zcfa U`]mÄˍ fℓ8`%ℓ Ã6YWˉf]hmˊfYUgcbg/Hfi a d`UbX`Хi ggⓁU/YUg]Yfhc·U`Y[Y` WXYUh·b]·cb]bYÄˉfℓ8`)-ℓ	%% (34%)

User experience scores – detailed analysis

Table 3 User experience ratings across devices

Mean Scores (Std Dev)	Smartphone	Tablet	Laptop
Pragmatic			
Supportive	%" & ˙fP%- &Ł	%"* * ˙fP%, , Ł	&"$ * ˙fP%"*) Ł
Easy	%+, ˙fP%+(Ł	%, (˙fP%"* %Ł	&"&) ˙fP% +Ł
9ž Wbh	%) $ ˙f&"$ $Ł	%) - ˙fP%+&Ł	&"% ˙fP%+' Ł
Clear	%- $ ˙fP%+* Ł	&"% ˙fP% , Ł	&"&) ˙fP% (Ł
Hedonic			
Exciting	$"* , ˙fP%, $Ł	$"*) ˙fP%( ) Ł	$"(& ˙fP%"* %Ł
Interesting	$") $ ˙fP%+$Ł	$"- $ ˙fP%(+Ł	$"( ) ˙fP%) $Ł
Inventive	$"+(˙fP%+' Ł	$"+(˙fP%(, Ł	$" - ˙fP%, &Ł
Leading Edge	$"+(˙fP%"* - Ł	$") + ˙fP%+, Ł	$"++ ˙fP%+, Ł

Notes: Questions are coded from -3 to +3, with 0 as the middle point. Standard deviations in parentheses. Not all respondents scored each of the traits, averages provided here are for all available data.

An association between voting preferences and device preferences

K Y ˙`cc_YX ˙]bhc ˙k \Yh\Yf ˙cj YfU``` dfYZYfYbWY ˙Zcf ˙]b!dYfgcb ˙cf ˙]!jch]b[˙ k Ug ˙fY`UhYX ˙hc ˙k \Uh˙i gYfg˙h\ci [ \h˙UVci h˙X]ZZYfYbh˙XYj]WYg"K Y ˙Wcbghfu WhYX ˙gWU`Yg ˙cZ ˙h\Y Y][\h˙i gYf!YldYf]YbWY ˙ei Ygh]cbg ˙Zcf ˙ga Ufhd\cbYg ˙UbX ˙`UdhcdgžVY]b[ ˙ h\Y ˙hk c ˙a cgh˙dcdci `Uf˙cb ˙]bYd ˙d˙Uh˙Zcfa g"H\Y ˙gWU`Yg ˙UfY ˙fY`]UVcY ˙YžVch\ ˙dfcXi W]b[˙ 5 ˙d\U˙gWcfYg ˙cZ ˙U˙a cgh˙$"- ˙fh˙Y ˙WcbjYbh]cb ˙]gh˙Uh˙$"+ ˙]gh˙h˙Y ˙VUgY`]bYŁ"K Y ˙U`gc ˙ WfYUhYX ˙gWU`Yg ˙cZ ˙h\Y ˙dfU[a Uh]Wfbži ddcfh]jYžYUgmžYZ˙ W]]YbhžWYUfŁUbX \YXcb]W fYl W]]h]b[ ž]bhYfghb[ ž]bj Ybh]jYž`YUX]b[˙YX[YŁ˙UgdYWhg ˙Zcf˙Vch\ ˙ga Ufhd\cbYg ˙ UbX ˙`Udhcdg"5[˙U]bžh\Y ˙5 ˙d\U˙gWcfYg ˙YldYYYX ˙$", ˙]b ˙U``Zci f ˙WUgYg"

K Y ˙WUb ˙i gY ˙h\YgY ˙gWU`Yg ˙hc ˙YjU`i UhY ˙k \Yh\Yf ˙h\Y ˙i gYf ˙YldYf]YbWY ˙X]ZZYfYX ˙ Zcf ˙h\cgY ˙k \c ˙k ci ˙X ˙k]g ˙ hc ˙jchY ˙cb ˙]bY ˙WcadUfYX ˙hc ˙h\cgY ˙k \c ˙k]g\YX ˙hc ˙ jchY ˙]b!dYfgcbžk YfY ˙gi WV ˙U˙WY]WWc]WVW ˙hc ˙VY ˙UjjfU`˙UV˙Y"H\Y ˙gWU`Yg ˙WUb ˙VY ˙UXXYX ˙ i d ˙fh\Ym˙k YfY ˙WcXYX ˙Zcea ˙Á' ˙hc ˙Ž' ˙Łhc ˙dfcXi WY ˙U ˙a UI]a i a ˙hchU˙gWcfY ˙cZ ˙&(" ˙ HU _]b[˙h\Y ˙dfU[a Uh]WUUbX ˙\YXcb]WgWU`Yg ˙gYdUfUhY ˙mžh\Y ˙a UI ]a i a ˙gWcfYg ˙UfY ˙ %&˙YUWV"H\Y ˙fYgi `hg ˙UfY ˙g\ck b ˙]b ˙HUV`Y ˙("

Ļb ˙Vch\ ˙a cXYg˙cZ˙jch]b[˙žU]\][\Yf˙gWcfY ˙f]]bX]WUhY]b[˙U˙VYhhYf˙i gYf˙YldYf]YbWYŁ]g ˙ Uggc W]]UhYX ˙k]h\ ˙U˙[fYUhYf˙`_Y`]\ccX ˙cZ˙dfYZff]b[˙cb!]b]bY ˙jch]b["<ck Yj Yfžh\Y ˙ X]ZZYfYbWYg ˙UfY ˙a cfY ˙dfcbci bWYX ˙b ˙fYgdYWh˙cZ˙ga Ufhd\cbYg/]bXYYX ˙Uhh]hi XYg ˙ hck UfXg˙h\Y ˙ga Ufhd\cbY ˙Udd ˙UddYUf˙hc ˙VY ˙a cfY ˙dc ˙Uf]gYX ˙k \Yb ˙k Y ˙Wca dUfY ˙ h\Y ˙dfYZYffYX ˙jch]b[˙a cXY": cf ˙Yl Ua d`Yžk \]Y ˙h\Y ˙X]ZZYfYbWY ˙VYhk YYb ˙h\Y ˙ gWcfYg ˙Zcf ˙`Udhcdg ˙Ua cb[gh˙h\cgY ˙k \c ˙k ci ˙X ˙dfYZYf ˙hc ˙jchY ˙]b ˙dYfgcb ˙hc ˙ h\cgY ˙k \c ˙k ci ˙X ˙dfYZYf ˙hc ˙jchY ˙cb ˙]b ˙Yg˙) "- ž]h˙]g ˙%" " ˙Zcf ˙ga Ufhd\cbYg"Ļb ˙ [YbYfU`ž h\cgY ˙k \c ˙k ci ˙X ˙dfYZYf ˙hc ˙jchY ˙]b ˙dYfgcb ˙gWcfY ˙a i WX ˙`ck Yf˙cb ˙U`` ˙ h\fYY ˙ga Ufhd\cbY ˙gWU`Yg"H\]g ˙gYfjYg ˙Ug ˙Ži fh\Yf˙Yj]XYbWY ˙h\Uh˙fYgdcbXYbhg ˙ \UX ˙a cfY ˙WcbÌ XYbWY ˙]b ˙h\Y ˙`Udhcd ˙d`UhZcfa "