Research Bulletin

Conducting survey research using inmate digital tablets: Lessons learned from research conducted in NSW correctional centres

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Aims

Conducting survey research in custodial environments can often be grounded in constraints, requiring substantial time, resources, and organisational engagement. In recent years, improved inmate access to secure internet-connected digital devices in many jurisdictions has created new ways for incarcerated people to access information and engage with online content. Since late 2020, Corrective Services NSW (CSNSW) has provided inmates with access to such digital tablet devices.

This paper outlines our experience using these tablets for collecting survey data directly from inmates as part of an evaluation of the introduction of the devices in two pilot correctional centres in NSW. The survey was delivered via a whitelisted website accessible on the device web browser, utilising a web-based survey platform. The devices were also utilised as the primary method for promoting the survey and encouraging inmate participation.

While previous research has involved using similar devices to deliver surveys directly to inmates, there are limited reflections on the challenges involved or examples of best-practice approaches for doing so. We therefore take this opportunity to outline the key ethical, practical, technical and security considerations involved in developing and administering a survey accessible by inmates via digital devices. Throughout, we reflect on the lessons learned across each phase of the process in designing and implementing the survey.

Conclusions

We ultimately conclude that using digital tablets to conduct survey research with inmates is beneficial in terms of speed, consistency, and scalability. However, both the development and implementation of the survey were impacted by similar security and administrative requirements traditionally associated with research in custodial environments, with the tendency to impact specific design features and functionality of the survey itself. Recommendations are presented with the aim of developing and approaching survey research using digital devices based on best-practice principles.

INTRODUCTION

Obtaining reliable survey data is important for conducting meaningful research about the views and experiences of people incarcerated in correctional centres. Until recently, due to the limited access that inmates have to computers and digital devices, collecting such data directly from inmates required substantial effort and resources. In practice, this has typically involved an extended process to administer a paper-based survey, including the distribution and collection of the survey itself, as well as the digitisation of data, but with the added complications of working in a secure prison environment, which substantially limits access to prospective respondents (Robberechts & Beyens, 2020; Sutton, 2011).

In recent years, improved inmate access to secure internet-connected digital devices in many jurisdictions has created new ways for inmates to access information and engage with online content (Kerr & Willis, 2018). However, due to the relatively recent introduction of digital devices into correctional centres, and subsequently the use of those devices for delivering surveys to inmates, there is limited existing information about best-practice principles for doing so.

To date, we have identified only two examples of such research published in recent years. Both studies involved surveys conducted in United States prisons using an education platform provided by the company Edovo. In the first example, a 2018 survey administered via 5,500 digital tablets returned 1,888 responses across 35 correctional centres (Diller et al., 2022). In the second example, a survey administered via digital tablets in 142 correctional centres returned approximately 7,600 responses (Bartley et al., 2020). In the latter example, 30,000 paper copies of the survey were also provided as part of a printed newsletter mailed to inmates in 501 correctional centres, with 650 completed surveys returned. While these studies highlight an emerging interest in utilising digital devices for administering surveys to inmates and suggest that inmates may be more inclined to complete and return a digital survey than a paper-based survey when given the option, the authors otherwise provided little insight into their experiences with this novel approach for collecting inmate data.

Corrective Services NSW (CSNSW) has enabled inmates to access digital tablet devices since 2020, providing a recognised opportunity for administering surveys directly to inmates via those devices. The current paper outlines our experiences using the tablets for collecting data directly from inmates. In doing so, we draw on the survey component of an evaluation of initiatives aimed at transforming inmate rehabilitation through digital technology introduced by CSNSW under the NSW Premier's Priority to reduce adult reoffending (see Barkworth et al., 2022).

The survey utilised for the study was the first of its kind to collect data directly from inmates in CSNSW correctional centres using the digital tablets. This paper provides us with an opportunity to reflect on lessons learned and best practices for utilising this new mode of survey delivery. Herein, we consider important ethical and practical implications, as well as the security and technological issues that impact this approach to data collection. This paper presents a detailed overview of the decisions made regarding such issues and the lessons we learned through conducting research via these devices. The insights provided aim to inform future decision-making when using similar data collection methods as inmates' access to digital technology is extended across correctional centres within NSW and other jurisdictions.

Inmate tablets in CSNSW correctional centres

The digital tablets that were both the subject *and* the medium of delivery of the survey conducted with inmates as part of Barkworth et al.'s (2022) study were piloted in two correctional centres in NSW in 2020, which has since expanded to a state-wide rollout. The tablets are mid-sized Android-based devices with a full-colour touchscreen. They are configured for wireless access to the internet via a secure Wi-Fi connection specific to each centre.

The tablets provide inmates with access to a variety of services and information, with further features added over time based on a roadmap for meeting inmate, centre and organisational needs. At the time the survey was conducted in August 2021, the features available to inmates included:

- Voice calls to approved phone numbers
- Pre-approved whitelisted websites, including news and entertainment sources, education resources, and information about health and wellbeing as well as welfare services (read-only access)
- Games
- Information about centre administration
- Facility Messages, which allows centre management to send messages directly to inmates' devices.

Within months following the administration of the survey, two additional major features were added to the tablets to facilitate inmates' ability to manage several of their own administrative needs:

- Self-service grocery 'buy-up' orders, replacing paper forms managed by staff
- Access to personal administrative information such as trust account balance and court dates.

Future expansions and modifications of tablet features are planned, with new features including additional entertainment options, a learning delivery system and expanded self-administrative functions.

Inmates mainly have access to the tablets during the time they are in their cells, from the afternoon lock-in, through to the morning 'let-go'. The ability to make phone calls using the tablet is disabled at 10pm, but inmates may otherwise use the tablets freely until they are collected by staff and placed in charging bays, usually during the morning 'let-go' from the cells.

DEVELOPING A SURVEY FOR INMATE TABLETS

The digital tablet pilot evaluation (Barkworth et al., 2022) sought to understand inmates' use of the tablets and how access to tablets affects their experiences of life in prison. The survey was designed to include both topical questions, that directly asked inmates about their use, experiences and perceived impact of tablets, as well as three validated psychometric measures relating to inmates' perspectives of their lives and the correctional centre environment.

Previous limitations placed on inmates' access to digital devices and online resources mean that the method of administering surveys digitally is a novel approach still in a phase of development. As a result, there was little established literature available to inform best-practice principles for both developing and administering a digital survey in this context. Given that, we first undertook an extensive period of consultation to consider a range of technological, methodological, and ethical issues that may arise. This section details the consultation process, as well as the issues and considerations that arose from those consultations and throughout the development and design of the survey. We also detail the methods identified for addressing these

issues, as well as the lessons learned throughout that process.

The consultation process

An overarching challenge associated with conducting surveys via inmate tablets involves identifying the appropriate survey characteristics, technical solutions, and supports that can facilitate effective delivery of the survey. While the project researchers have extensive experience with a wide range of research methods, including online survey platforms, additional expertise is necessary to navigate local factors associated with tablet access, functionality, security, and user experience. To address this, a variety of stakeholders with a diverse range of expertise were consulted to discuss avenues for the development and administration of the survey via tablets. Key stakeholders included those involved in the implementation, operation, use, and administration of the tablets.

We first consulted with the CSNSW Offender Digital Services (ODS) team, who were managing the implementation of tablets in participating centres. This consultation was important for understanding the practicalities of implementing the survey, including details of tablet functionality and the planned rollout of additional tablet features. They assisted with considering the security risks associated with different survey designs and the methods of survey implementation, including options around online survey platforms, question formatting, and delivery of the survey.

Second, we felt it was important to include consultation with inmates in relation to these issues. It has previously been identified that user experience and research foci should reflect the needs and interests of those completing the survey (Apa et al., 2012; Mitchell et al., 2022). To address this, we engaged with Inmate Development Committees[1] (IDC) in both centres where the tablets were being piloted. In-person discussions with the IDCs were conducted in collaboration with a team of researchers from the University of Technology Sydney's (UTS) Design Innovation Research Centre (DIRC).[2] These discussions informed our understanding of inmates' engagement with the tablet technology and the role that the tablets could realistically play in data collection. The discussions also provided us with a more practical understanding of inmates' interest and considerations in deciding to complete a survey, their willingness to answer different types of questions, and their views regarding inmate abilities to use the tablets to complete surveys. Information provided by the IDCs therefore assisted with decision-making regarding the design and direction of the research, highlighting the value of engaging with inmates who use the very technology that is being examined.

Selecting a survey platform

A key consideration relating to both the design and implementation of the survey is selecting a suitable platform that would meet the requirements and purpose of the survey. Consideration needs to be given to how the survey would be delivered to inmates, and how both the features and functions of that platform might interact with or be affected by the specific limitations and functionality of the

[1] An inmate-nominated body that represents inmates at each correctional centre in discussions with CSNSW (CSNSW Custodial Operations Policy and Procedures 9.8).

[2] The DIRC team were engaged by CSNSW to contribute to the development of a research and evaluation strategy that addressed 'transforming rehabilitation through digital technology'. We worked closely with that team to engage with key stakeholders relevant to both the development of the digital technology research and evaluation strategy in general, as well as specific to our immediate research priorities relating to the evaluation of inmate digital tablets.

tablet. We reviewed the existing functions and capabilities of the digital tablet system to consider whether a survey could be delivered via any existing or purpose-built application.

One option considered was to adapt a planned 'e-Forms' app, which was created to replace the previous need for inmates to submit all requests and applications via paper forms. However, this feature was not planned for rollout in the pilot tablet centres prior to the expected date of survey administration. The use of the 'e-Forms' app would have therefore led to substantial delays to the implementation of the survey. Developing a bespoke survey app to be installed on the tablets would also lead to substantial delays due to the in-depth process that would have been involved to develop, test, security screen, and roll out a specially designed feature.

A second consideration when selecting the survey platform relates to the level of privacy afforded to respondents, and the confidentiality of their information (National Health and Medical Research Council, 2018). Roberts and Indermaur (2008) argue that the unique status of inmates, and the control that authorities have over many aspects of their lives, makes maintaining their privacy particularly difficult. They emphasise the importance of considering the access that prison authorities have to any data provided by inmates, noting that centre staff can often intercept inmate documents and become aware of survey participation and even direct responses, potentially affecting their relationships with inmates. However, consultations with IDCs indicated that inmates using the tablets do not expect complete confidentiality and consider their use of tablets in a similar way to any discussions they have with contacts over unit phones, which are openly monitored for security purposes. While inmates had such expectations, the preference is for inmate participation, and their responses, to remain as confidential as possible. Importantly, the use of an existing or purpose-built app for data collection would have likely required a third party (e.g., staff member or vendor representative) to access that data for the purposes of providing it to the research team, with implications for both data confidentiality and researcher's access to and control of data outputs.

In considering the best method for delivering the survey to inmates, we worked to balance ease of use for inmates with the complexity of set-up, timing, inmate privacy and security requirements. Ultimately, we concluded that delivering the survey as a pre-approved whitelisted website via the tablet web browser using an external, web-based survey platform would be most practical, secure, and appropriate. The web browser was already installed on tablets in the pilot centres, with established technical and content approval protocols limiting the likelihood of significant delays to administering the survey. Furthermore, the web browser could display rich text as well as an attractive user interface that can be designed and administered remotely, enabling us to amend the survey as required without the need for support or approval of ODS or the tablet vendor. A web-based platform also provides adaptable and predictable data export options to ensure that collected data is available directly to researchers in a readily usable format.

Using an external web-based platform further limits the risk of centre staff intercepting inmate responses, allowing us to provide inmates with assurance that their participation would remain confidential. To inspire confidence in inmates and encourage them to complete the survey, we highlighted these, and other, privacy benefits via the information sheets and the introduction section of the survey. The documents informed them of the independence of the Corrections Research, Evaluation and Statistics team within CSNSW and its separation from local staff and management, and that the survey data would only be accessible to members of the research team.

Although many off-the-shelf web-based survey platforms, such as SurveyMonkey[3] and Qualtrics[4], could be appropriate for delivering a survey using an inmate tablet web browser, we selected Alchemer[5] as the preferred platform. Alchemer is a feature-rich web-based survey platform that members of the team had extensive experience using in a variety of contexts and delivery methods, including administration via email, kiosks, mobile phones and (non-inmate) tablets. Given our substantial knowledge of, and experience with, the platform's features and structure we were best positioned to adapt it to this novel context.

Survey design: An iterative approach

Informed by consultations with ODS and IDCs, we identified considerations regarding the design of the survey that were relevant to both the tablet functionality and the specific target population. Parameters of tablet functionality and security can interact with, and influence, the viability of different survey methods and can subsequently affect different elements of the survey design, resulting in the need for an iterative approach to development of the survey.

Initial design

As noted, while the research team had extensive experience using Alchemer for administering surveys via a range of digital devices, including mobile phones and tablets, inmate tablets are purpose-built with security at the forefront. It was unclear during the early design phase how the functionality of the tablets might affect specific features or question formatting that may otherwise be standard in online surveys. This remained a key theme in the identified importance of thorough and iterative testing of the survey as applied to the specific digital technology inmates were able to access, which will be described in greater detail in the following sections. Our explorations of tablet functionality also raised interacting implications for key features of the overarching survey and research design.

A notable consideration regarding survey design related to our use of open-ended questions. Initial project planning considered the most effective and efficient ways to collect information on inmates' views and experiences of using the tablets. Open-ended questions were identified as a suitable approach on the basis that it would allow inmates to provide rich qualitative information regarding their experiences. Consultations with ODS indicated that use of open-ended questions in a tablet survey would be possible, with the only technical requirement being the need for the tablet vendor to enable access to the keyboard when listing the survey link as a whitelisted website.

An interacting consideration emerged during the development process in relation to use of unique identifiers. We regarded use of identifiers as important for two key reasons. First, incorporating an identifier enables respondents to save their progress and continue later, thus reducing the risk of non-completion or duplicate responses in the event that the survey was not completed in one sitting. We saw this as an important survey design feature due to the anticipated length of the survey and the inclusion of multiple psychometric items, that may elicit survey fatigue (Brower, 2018). It was also identified during consultations with ODS and the IDCs that technical limitations of the tablets led to intermittent Wi-Fi dropouts and forced sign-out after a period of idleness on the tablet, increasing the likelihood of unintentional session disruptions. Second, a unique identifier provides an option to link individual survey responses with inmate demographic data available through the CSNSW Offender Integrated Management System (OIMS). As

[3] https://www.surveymonkey.com/
[4] https://www.qualtrics.com/
[5] https://www.alchemer.com/

such, it was determined that the most appropriate option would be to ask inmates to use their Master Index Number (MIN) as a 'password' for logging in to the survey, which would allow easy data linkage to information available via OIMS.

An unintended consequence identified by ODS, however, indicated that if inmates were able to log in to the survey using their MIN, it would create an opportunity for untraceable and potentially inappropriate communication between inmates through the open-text field enabled for open-ended questions. Subsequently, there was a need to weigh the choice between the use of a MIN-password log-in system and the use of open-ended questions. We reasoned that forcing respondents to complete a large number of questions in one sitting, combined with the risk of needing to re-start the survey if the page is unintentionally closed, could lead to a low response and/or completion rate. Therefore, it was decided to eliminate open-ended questions from the current survey in favour of the MIN-password log-in system. The identification of this interconnected and consequential decision further highlighted the need for an iterative and collaborative process for designing, testing, and piloting the survey prior to administering it to the target population.

Testing and piloting the survey

As previously noted, given it was unclear how the unique functionality and security requirements associated with the inmate tablets would affect both the design and implementation of the survey, it was important to establish a process for testing and piloting the survey prior to its administration. This section outlines that process, including the issues that arose during this phase and the solutions that were implemented.

To prevent unauthorised use outside of approved prisons, the tablets are restricted to use only within their assigned correctional centre. This meant that all testing was required to be completed on-site during visits to one of the correctional centres.[6] Furthermore, managing the technical (back-end) configuration of tablet features and functions required coordination with, as well as review and approval from, ODS. Agreed-upon changes also ultimately had to be actioned by representatives of the tablet system vendor. This meant that even approved changes to whitelisted website addresses and enabling the on-screen keyboard to allow respondents to enter their MIN could not be made immediately, often requiring several days to action. Due to this, two separate full-day site visits were necessary to finalise all survey testing and re-design as part of the iterative process.

Testing was conducted on a device identical to those provided to inmates, with the same data and display restrictions as those applied on inmates' devices. The testing involved a detailed review of each page and element of the survey to assess the design, readability, and functionality of the questionnaire on the device. Detailed testing proved critical to the effective presentation of the survey as it revealed that security restrictions built into the device web browser affected the display of several important design elements used in the survey. This meant that several question formats (e.g., Likert scale matrices), as well as page display elements (e.g., 'forward' and 'back' buttons), had to be amended to fit the browser requirements using a process of trial and error. Other security restrictions affected the browser's ability to display elements of different question types, which meant we were unable to include 'drag-and-drop' ranking questions and rating 'sliders'.

Ultimately, we amended the structure of several questions and simplified the presentation of survey

[6] A secure testing environment has since been established in a CSNSW office.

pages. This mainly resulted in removing visual elements from question presentation and even from page navigation buttons. For example, we simplified the design of visual 'drag-and-drop' style ranking questions and slider rating questions to plain 'radio button' rating questions. This, to some extent, made the survey less visually engaging and interactive, reflecting the need to find a compromise between visual appeal and basic functionality in our considerations of user experience and engagement in the survey. Additional technical testing was conducted by the local contact at each centre as a final review to ensure that all elements appeared as expected on the specific devices used by inmates.

Ideally, inmates would be requested to pilot the survey and provide feedback to confirm that the questionnaire wording and structure were appropriate, accessible and easily understood. However, security and access requirements would again create significant delays for a timely release of the survey. For example, the testing device and environment were in an area that was not accessible to inmates, and technical limitations made it impossible to place a link to the survey on only selected inmate devices (rather than all devices). Direct piloting of the survey was therefore conducted by colleagues and done only for the purpose of identifying typographical errors and assessing an estimated time for completion. Three colleagues who were not members of the research team completed the survey and provided feedback, including time taken to respond to all questions in the survey, giving us an upper-end benchmark of 20 minutes for survey completion.

The final survey questionnaire

The final questionnaire, after completion of the design, testing and piloting phases, included a total of 68 items. The opening page of the survey included information about the survey itself and how inmate data would be used. This introduction page was also where inmates entered their MIN to log in to the survey. Their MIN ultimately served the purposes of a password so they could complete the survey in multiple sittings, an identifier for linking responses with relevant demographic data obtained from OIMS, and an acknowledgement that they consented to participation.

The first section of the survey comprised 13 questions covering inmates' experiences of using the tablets and available features, as well as their views of the impact of the tablets on their lives in custody and their ability to connect with family and friends outside gaol. Due to the exclusion of open-ended questions in the survey, it was necessary to use a variety of closed question formats that included single selection, multiple selection, and Likert scale response options.

The second section of the survey included a total of 55 items across three validated psychometric measures, rated on a 5-point Likert scale:

- The Essen Climate Evaluation Schema (EssenCES) measures the social climate of the correctional centre using 17 items (Schalast et al., 2008).
- The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) measures the subjective well-being of inmates and consists of 14 items (Taggart et al., 2015; Tennant et al., 2007).
- The Basic Psychological Need Satisfaction and Frustration Scale (BPNSFS) measures both the satisfaction and frustration of identified basic psychological needs (autonomy, competence and relatedness) across a total of 24 items (Chen et al., 2015).

IMPLEMENTING THE SURVEY

Following the survey development process, several additional decisions were required to determine the best approach for administering the survey. Consideration was given to how best to promote the survey to the target population and the impact that this may have on the final sample and the potential for selection bias.

Apa et al. (2012) note that conducting research within a secure prison is particularly difficult due to the limited access to inmates and the often unpredictable nature of the custodial environment. They recommend developing a "collegial connection" with specific staff members at the prison who can assist with managing issues that require direct access to the prison. We identified such a connection as particularly important due to the novel methods and technology associated with the research. We therefore engaged a senior staff member with frontline responsibilities at each centre as a 'local contact'. The local contacts were identified by their respective centre Governor and assisted with the planning and coordination of the survey at their centre.

As part of the planning of the survey, the local contact informed us of specific or unique details of tablet implementation in their centre, such as the specific time of the afternoon lock-in as well as centre- or unit-specific rules that limited inmate access to the tablets during the day. The local contact also assisted with final on-the-ground testing before official dissemination of the survey and provided a list of MINs for all inmates residing in their respective centres at the launch of the survey. These lists were used to enable the inmate log-in system built into the survey, allowing inmates with a listed MIN to access the survey by entering their MIN on the survey log-in screen. A count of the MINs in each list was also used to determine the full inmate population at each centre at the commencement of the survey in order to calculate survey response rates.

Encouraging participation through survey promotion

Broad promotion of any survey to prospective respondents is critical to ensuring that it is completed by a large sample, with minimal sampling bias (Sue & Ritter, 2012). Given the focus of the survey was on inmates' experiences using the digital tablets, we sought to maximise inmates' exposure and awareness of the survey to achieve a well-rounded sample that would ideally be representative of the target population (i.e., all inmates across the two tablet pilot centres). Researchers have previously used a variety of different methods to engage inmates as participants when conducting standard paper-based surveys, with most focusing on face-to-face encouragement by staff and/or visiting researchers (e.g., Apa et al., 2012; Byrne, 2005). Researchers conducting web-based surveys (in non-custodial settings) note that sending visually appealing online messages with detailed information about the survey can be helpful for encouraging prospective respondents to access the survey (Sauermann & Roach, 2013).

Considering the newly introduced technology being utilised for delivering the survey, we identified an opportunity to enhance the promotion of the survey by using the device itself. An existing 'Facility Messages' feature available on the tablets allows messages to be sent directly to inmates, inclusive of rich text and images, as well as an attached image or PDF file. Inmates are alerted to new messages via a notification, although such notifications are only visible if the Facility Messages app is accessed.

Inclusion of a prospective respondent's name, as well as an individual survey link, in an invitation is commonly seen as best practice in a variety of

survey settings to encourage completion and reduce the risk of duplicate responses (e.g., Sauermann & Roach, 2013; Trespalacios & Perkins, 2016). Facility Messages, however, do not allow for the inclusion of a clickable link directly to the survey, or for personalised messages inviting inmates to complete the survey. We therefore examined various alternative promotion and personalisation solutions that could help simplify inmate access to the survey. For improved personalisation, we considered providing one-time passwords or developing other automated unique identifiers for respondents. These options were identified as having substantial limitations, usually making the survey completion process for respondents more difficult and time consuming. We had also previously identified that the use of inmates' MINs would act as passwords, which already addressed issues associated with survey completion, risk of duplicate responses and the ability to link individual responses with other relevant inmate demographics obtained through OIMS.

An alternative option proposed by the tablet implementation team was the development of a dedicated icon on the tablet's main screen that would provide inmates with direct access to the survey. The use of a specially designed icon had the potential to both shorten the multi-step process required to access the survey, as well as draw attention to the inclusion of a new feature when inmates logged in to the tablets. However, the development of an icon was determined to involve an extensive design and approval process that would have again substantially delayed the implementation of the survey.[7]

Ultimately, we determined that utilising Facility Messages to promote the survey, along with the MIN password log-in to personalise responses, would still be beneficial. The messages provide inmates with step-by-step instructions for how to find and access the survey through an approved whitelisted website. Of note, multiple Facility Messages could be sent over the course of the survey period, providing potential participants with reminders to complete the survey, which has been shown to increase overall response rates (e.g., Meterko et al., 2015; Phillips et al., 2016; van Mol, 2017).

Given the use of Facility Messages would still require inmates to access the app to see the messages, we aimed to further enhance awareness of the survey through engaging the local contacts. We asked them to assist with promoting the survey by informing inmates about the survey and encouraging them to complete it. In addition, we developed and provided information sheets and promotional materials for the local contacts to hand out to inmates or display around the centres. Figure 1 outlines the promotional activities local contacts engaged in over the course of the survey.

An additional consideration within the scope of promotional activities aimed at maximising inmate participation was whether material incentives would be offered to prospective respondents. The issue was closely examined based on a concern that a lack of incentives could lead to low response rates and may bias the sample towards inmates who already have strong feelings about the matter (Hsieh & Kocielnik, 2016). The final decision not to offer material incentives was made with consideration for the position of the Corrective Services Ethics Committee (CSEC) at the time, which outlined concerns around impacting the already unequal relationship of researchers with vulnerable

[7] The inclusion of a dedicated icon for inmate surveys is still under consideration for future use.

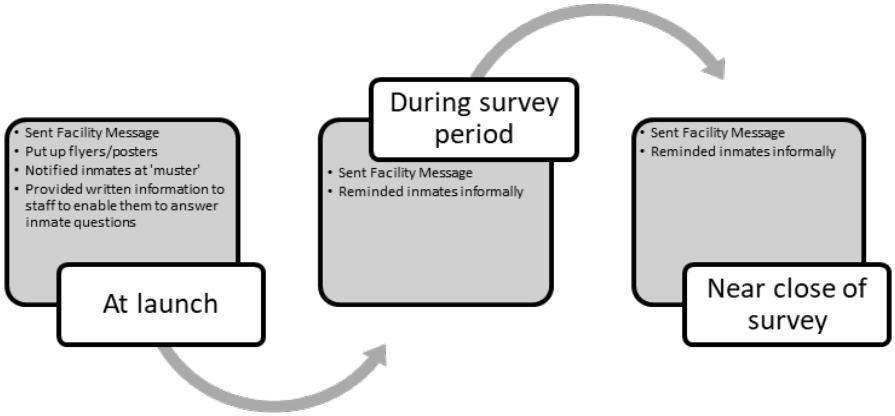

Figure 1. Overview of promotion and recruitment activities undertaken by local contacts.

groups such as people in prison.[8] There were also concerns about setting a precedent for all research to require inclusion of incentives, and how incentives may also unduly influence respondents from sharing their genuine views about the topic of interest. We therefore encouraged participation in the survey on the basis that inmates had an opportunity to share their views and experiences about the tablets, with the potential for that information to inform continued and additional improvements regarding the tablets and available features.

Sampling and selection bias

The novelty of both the delivery method (digital tablets) and the main promotional method (Facility Messages) for the survey were also raised as possibly impacting the ability and interest of inmates to respond to the survey, as well as the representativeness of the sample. Of greatest concern was that inmates with less experience using digital technology would be less likely to access the tablets or know about the survey, particularly if they did not access or read Facility Messages. Previous research notes that older inmates and those with poor literacy skills are often less likely to use digital tablets in custodial settings (Reisdorf & Jewkes, 2016; Seo et al., 2021), which raises additional concerns of selection bias in the sample of respondents (Bethlehem, 2010).

Consultations with IDCs, however, led us to believe that the cohort of inmates in participating centres who do not use tablets, or use them very little, is small. Follow-up interviews with inmates, post-survey completion, also supported this premise (Thaler et al., 2022). A large proportion of interviewees reported being unaware of any inmates who do not use the tablets at all. This highlights that much of the NSW inmate population come from a generation of 'digital natives', who generally have innate confidence in using digital technology (Prensky, 2001). A large proportion of NSW inmates serve relatively short custodial sentences, often less than 2 years, with only a little over 10% serving a period of 10 years or more (BOCSAR, 2021; Tang & Corben, 2023). As such, many inmates are unlikely to experience long breaks from accessing new and developing technology that would lead to a loss of confidence. While these factors indicate that the potential for excluding inmates due to their inexperience with digital technology may be relatively low, it remains an important consideration to promote inclusivity among these inmates when

[8] The official position of CSEC has since changed to supporting providing inmates with material incentives in recognition of their time and effort participating in research.

utilising such technology for research and other applications.

We note that a key facilitator for sampling representativeness in the context of this study was that tablets were freely available to all inmates at pilot correctional centres. It appears likely that the potential for sampling bias could be more pronounced, and less manageable, in jurisdictions where digital tablets are not given freely to inmates, but rather rented only to inmates who can afford them (Bardelli et al., 2022; Howard, 2020).

Survey timing

A final decision for consideration prior to administering the survey is determining the ideal length of the period that the survey would be available to inmates. Researchers conducting online surveys in traditional settings suggest that a period of between 3 and 4 weeks is optimal (Sue & Ritter, 2012). They argue that although additional time is likely to achieve a higher response rate, the majority of responses are achieved within the first few days after launch, and returns diminish substantially beyond that (Sue & Ritter, 2012). Based on an expectation that few additional responses would be received in subsequent weeks, as well as our interest in minimising the promotion and oversight work required of local contacts, the survey was ultimately made available to inmates for a period of 3 weeks.

As shown in Figure 2, the timing of responses received from inmates followed this expected pattern. More than half (58%) of all responses were received within the first week, with the largest 'spike' occurring the day the survey was launched (33.5%). A second spike occurred following the first survey reminder Facility Message, however the second reminder had little to no impact, with very few additional responses received at that point.

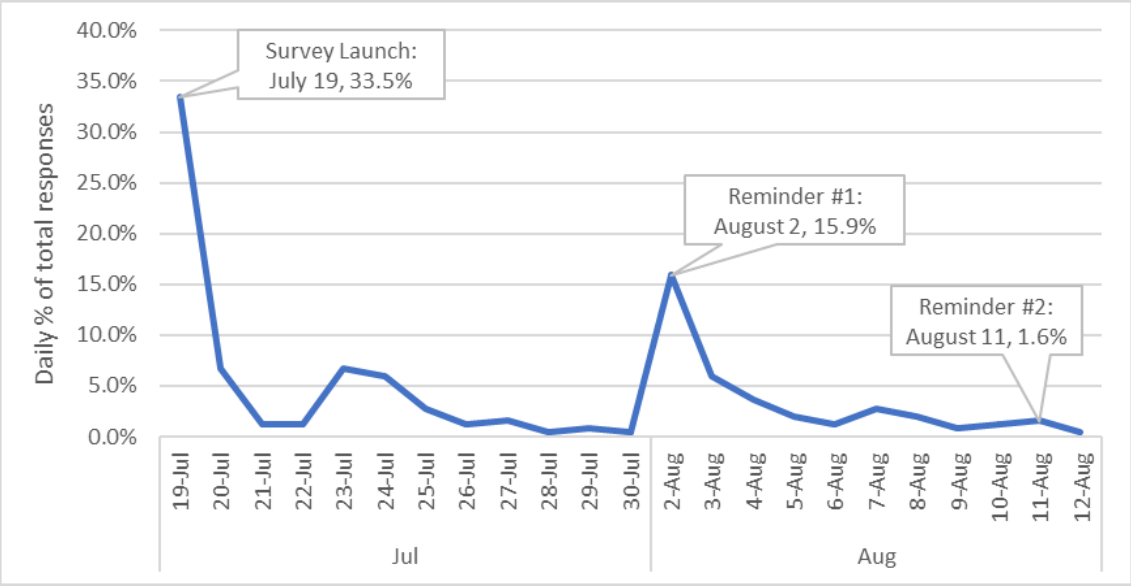

Figure 2. Percent of survey responses received by date.

UNDERSTANDING THE QUALITY OF DATA COLLECTED

The process of assessing the quality of data collected is important, regardless of the survey methods employed, and often involves steps to check the accuracy, completeness, and validity of the data (Tabachnick & Fidell, 2001). The accuracy of the data is often more of a concern with paper-based surveys that have the potential for data entry errors (Cavaiglia-Harris et al., 2012; Fletcher et al., 2003). The automatic digitisation of data collected via digital devices was seen as a key benefit of using this approach (Evans & Mathur, 2005; Saleh & Bista, 2017; van Selm & Jankowski, 2006). This section makes use of the opportunity to examine the quality of data collected from inmates via digital tablets in terms of both data completeness and data validity.

Response rates and attrition

The total identified population for participation in the survey was 632 inmates placed at the two tablet pilot correctional centres. The two centres were Dillwynia, a low/medium security facility for female inmates (population at time of the survey = 208); and John Morony, a medium security facility for remand and sentenced male inmates (population at the time of the survey = 424). All inmates in both centres who were residing in units where inmate tablets were available by the launch of the survey were invited to participate. A total of 208 inmates completed the survey (response rate = 32.9%). There was, however, a substantial difference between the response rates in John Morony (103/424 = 24.3%) and Dillwynia (105/208 = 50.5%).

The difference in response rates between the two centres is difficult to attribute to any one explanation. Previous studies examining the impact of gender on willingness to respond to web-based surveys have reported mixed results, suggesting that the simple distinction between male and female respondents may be a limited predictor of response rates (e.g., McCabe et al., 2006; Mcdonald & Adam, 2003; Smith, 2008; Yetter & Capaccioli, 2010). Structural differences between the centres may also play a role. For example, many of the inmates in Dillwynia reside in 6-person complexes, compared to those in John Morony who are generally in single or double-up cells. The increased ability for inmates in Dillwynia to continue socialising past the time of lock-in, when they have access to the tablets, may have created opportunities for an increased awareness about the survey among that cohort by sharing with each other that a new Facility Message had arrived or alerting each other to the presence of an additional whitelisted website. The importance of local contacts to the respondent recruitment process could also mean that differences in the eagerness and activeness of staff members involved in promoting and managing the survey in different centres may have also contributed to differences in response rates.

As is generally expected in survey research, particularly lengthier surveys, some attrition among respondents occurred at several points throughout the survey. The first substantial drop in the response rate occurred at the beginning of the psychometric items, with a drop of six percentage points from the last topical question to the first psychometric item (from 98% to 92% of respondents providing a response). Although progressively growing attrition of respondents over the course of a survey is common in all types of surveys (Galesic & Bosnjak, 2009; Liu & Wronski, 2018), the fact that a substantial part of the attrition occurred at the point where the survey shifts from topical questions to psychometric items could suggest that inmates were less interested in answering items they may have viewed as deviating from the expected topic of

the survey (Galesic & Bosnjak, 2009; Spenneman, 2022). Attrition, however, did not exceed 23% at any point in the survey, with the lowest completion rate of any single item being 78.4% (see Figure 3). A review of the responses found that most respondents completed all, or almost all, of the survey items. In total, respondents completed an average of 87.3% of the survey, while almost two-thirds (63%) of respondents completed every question.

It is important to note, however, that delivering surveys to inmates via digital devices is still in its infancy, and the characteristics of responses reported here may not be indicative of future surveys delivered via similar methods. The novel survey delivery method used in this study could be seen as encouraging inmates to engage with the survey out of curiosity, overstating the response rates that could be expected in future surveys. This could be seen as analogous to surveys conducted via email during the early phases of the internet in the 1980s and early 1990s. Muñoz-Leiva et al. (2010) report that such surveys received very high response rates due to the novelty of email and the limited number of emails received by users at the time. They noted that response rates for such surveys dropped markedly in more recent years as email gained popularity and researchers more regularly used email surveys, impacting their novelty and uniqueness.

The topic of the survey, covering inmates' experiences with the tablets themselves, could also be seen as having a similar effect. Researchers have previously identified the headline topic of the survey, and the focus of its questions, as having a powerful positive impact on inmates' interest in responding to the survey, as well as for reducing the attrition associated with long surveys (Saleh & Bista, 2017; Spenneman, 2022). Consequently, surveys covering topics that inmates may have less interest in or may not view as having an immediate or obvious benefit could result in reduced response rates.

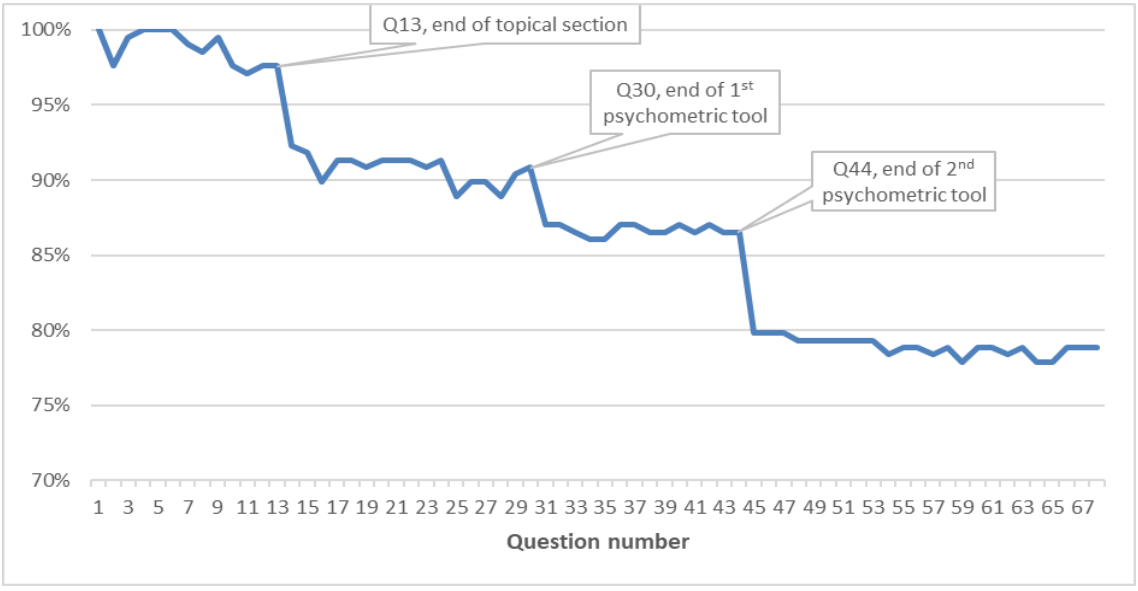

Figure 3. Percent of respondents who completed each survey question.

On the other hand, there is potential that aspects of the novel methods utilised here had suboptimal effects on response rates. For example, a security measure implemented in the tablets that logs users out of the system after short periods of inactivity or after every hour of tablet use may have led to inmates discontinuing participation prior to completion, despite the opportunity for them to log back in and continue from where they left off. There was also strong reliance on promoting the survey via Facility Messages, which relied on inmates accessing the Facility Messages app to be alerted to information about the survey and how to access it. While we supported this approach through utilising local contacts to also share verbal information and other promotional materials with inmates, it is not possible to determine whether either method was effective in promoting the survey or subsequently impacted the overall response rate.

Ultimately, the response rate achieved from the survey reported on here, while on the lower end, still falls within the range (30% – 89%) reported in previous research where surveys were conducted with inmates (e.g., Barkworth & Murphy, 2021; Brunton-Smith & McCarthy, 2016; Reisig & Mesko, 2009; U.S. Bureau of Justice Statistics, 2021; Wooldredge, 1999). Continued use of digital tablets for administering surveys to inmates will help to deliver further insights into how varying methodological approaches may affect overall response rates.

Careless or insufficient effort responding

An important process that was built into the data screening phase was designed to help assess the validity of responses received. Several survey characteristics have been identified as increasing the risk of careless or insufficient responding from participants, including the length, design, and structure of the survey; the context or theme of the survey; the environment in which the survey is delivered; and the mode of survey delivery or means of data collection (Bowling et al., 2020; Brower, 2018; Ward & Meade, 2023). Of the main characteristics identified by Ward and Meade (2023) as potentially impacting the validity of responses, those of most notable relevance in the current context relate to administering an online survey to respondents prone to boredom.

Data from respondents who did "not put in the effort required to respond accurately or thoughtfully to all questions asked of them" can substantially affect the validity of collected data and may have to be excluded from the final dataset (Curran, 2016, p. 3). Despite these concerns, following the model outlined by Ward and Meade (2023), the survey was identified as likely low risk, requiring only minimal review of careless responding. Based on this, we assessed the survey data for unexpectedly fast responses, as well as long strings of repeated responses (Meade & Craig, 2012; Ward & Meade, 2023).

An additional benefit of the digital survey approach was that survey platform metadata allowed us to assess the time taken by respondents from the moment they accessed the questionnaire to the moment they submitted their data. Despite the wide range of time taken for people to complete the survey (1 minute to 9.3 days), the majority (85.6%) completed the survey in under 30 minutes, with almost half of all respondents (48.6%) completing the survey in under 10 minutes (see Table 1). Less than 1 in 10 respondents likely closed their device (either intentionally or unintentionally) and continued the next day (i.e., they took more than 8 hours to complete).

Table 1. Time taken to complete the survey.

Time taken	Respondents (%)
Under 10 minutes	48.6%
10–30 minutes	37.0%
30–60 minutes	2.9%
2–8 hours	2.9%

Upon review of survey response patterns, only a small number of responses that could be described as 'straight-lining' were identified, meaning that the respondent did not vary their responses across multiple pages and sections of items (Ward & Meade, 2023). Respondents identified as displaying both 'straight-lining' and very fast responding were rare, and we ultimately only excluded data from three respondents identified as likely cases of careless or insufficient effort responding. The simplified methods used to assess such data are extremely conservative, erring on the side of caution in identifying careless responding (Curran, 2016). However, the small number of careless responses identified does provide an indication that the data collected via this novel approach, and from a sample of respondents who are likely to be prone to increased levels of boredom, is not subject to extreme levels of careless or insufficient responding.

CONCLUSION

Tablet-based surveys in custodial environments bring novel opportunities and benefits for research within this context, including improved speed, scalability, and consistency. They also allow for new ways to recruit inmates for participation and encourage them to engage with the survey. However, the development and administration of tablet-based surveys is also affected by the security and administrative requirements that complicate much research in custodial contexts.

As with any research conducted in a custodial environment, security is front of mind in digital-based inmate surveys (Apa et al., 2012). Digital tablets provided to inmates have been specially developed to prevent unauthorised communication, often affecting the display of even approved content. Furthermore, access to the tablets is restricted and governed by a complex and layered approval system, at times requiring a detailed process for requesting changes, such as adding whitelisted websites, and to access the tablets for the purposes of survey testing and making subsequent adjustments to how the survey is displayed. The specific considerations outlined throughout this paper are somewhat unique to these surveys, requiring careful coordination and problem-solving. This includes engaging custodial authorities closely in the survey review, testing and piloting processes, and ensuring that the survey platform used to host the survey has flexible display options.

It is important to note that the current paper draws on our experiences of developing and administering a survey for inmate tablets utilised by CSNSW, that have specific technology systems and functions. Systems utilised in other jurisdictions may significantly vary and have substantially different features, access rules and back-end management (e.g., Bardelli et al., 2022; Bartley et al., 2020; Diller et al., 2022; Mufarreh, 2022). Furthermore, the system used in CSNSW centres is neither complete nor static as it continues to undergo changes in terms of characteristics, functionality, access rules and available features. The process for administering surveys via the tablets, including the technical, ethical and practical considerations discussed in this paper are the result of the first case of utilising this method in NSW correctional centres. While this approach allowed us to consider some of the requirements and complications researchers could face when delivering surveys to inmates using digital tablets, they may not apply to future efforts of conducting research in NSW or in other jurisdictions where specific devices, functions, features and access protocols may vary.

Notwithstanding inter-jurisdictional variation in technological solutions, the following recommendations are intended to reflect common features of best practice when administering surveys to inmates via digital tablets:

- Develop and maintain relationships with relevant stakeholders, including IT and/or digital tablet project staff, prison management and inmate representatives, to ensure that issues can be identified and solved quickly, and that solutions meet the needs of different groups.
- Develop a clear understanding of the abilities and limitations of the unique system being used and the technical and administrative landscape in which it operates.
- Conduct comprehensive testing of the appearance and operation of the specific survey using an identical device with identical limitations that the end-user experiences to identify issues that might require re-design.
- Maintain flexibility regarding the possible design and administration of the survey, as well as the tools used to design and deliver it.
- Factor in additional time when planning the study to account for potential delays due to technical or security requirements associated with the inmate tablets.
- Consider principles of ethical research with inmates during the survey design and implementation phases, including the need to maintain inmate confidentiality and data security.

As noted throughout this paper, there were a number of ethical, practical, technical and security-related issues that are unique to both the technology and the context. The process undertaken in this novel case for using digital tablets to administer surveys in NSW correctional centres has provided an opportunity to reflect on principles of best practice that may be drawn from and adapted in the future. Overall, there is benefit in continuing to reflect upon and learn from these insights as digital tablets become a more utilised and business-as-usual approach to conducting survey research with inmates.

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Jan 2022	Quality of the therapeutic alliance and associations with program outcomes for offenders participating in High Intensity Program Units (HIPUs)
Dec 2021	The Initial Transitional Support (ITS) program: Implementation evaluation
Dec 2021	How does the role of custodial staff influence their perceptions of offender rehabilitation and responses to Five Minute Interventions (FMI) training?
Oct 2021	Five Minute Interventions (FMI): Short-term effects of training on staff attitudes towards prisoners, motivation and ability to support rehabilitation, and job stress and satisfaction
Sept 2021	Process evaluation of the Custody Based Intensive Treatment (CUBIT) program for sex-offenders: Within-treatment change
Sept 2021	Impact Evaluation of the Gurnang Life Challenge Specialised Program for Young Adult Male Offenders in NSW
June 2021	Evaluation of Custodial Case Management (CCM): The Planning for Adjustment, Responsivity, Reintegration, Criminogenic Needs, and Communication (PARRCC) Assessment Tool
March 2021	Evaluation of High Intensity Programs Units (HIPUs): Implementation of an innovative intervention model for offenders with short custodial sentences

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