

APPLICATION NOTE

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PsychVeyApp: Research survey app



Phi-Vu Nguyen^{1†}, Jeremy Poon-Heng Lim^{2†}, Ian-Hartono Budianto¹ and Samuel Ken-En Gan^{1,2,3*}

Abstract

Surveys are used extensively to gather information from clinical, market, and psychological research studies. However, this process is time-consuming and error-prone especially with the tedious data entry. Psychvey is a web and mobile application that allows the easy design, creation, analysis, and taking part in surveys electronically. Collected data are easily exported into spreadsheets for subsequent statistical analysis, displacing the physical collection of survey responses and manual data entry. This allows for added confidential security and prevents data entry errors while maximising participants' convenience. Psychvey facilitates data collection from simple surveys to long multi-typed studies and aids studies and data collection, thus catering to a whole range of purposes.

Introduction

Surveys are used in multiple disciplines ranging from opinion polls, market research and academic studies in clinical research and psychology (see our examples: [1–3]). Academic studies, in particular, can be lengthy and encompass hundreds of questions that can take hours to answer. Long surveys are time-consuming and tedious to compile, making it error prone during data entry. To address this problem, the widespread use of smartphones and mobile devices offers a potential solution. Mobile apps are the next frontier tools for scientific research [4], with the potential to displace laboratory equipment and facilitate “on-the-go” analysis (see www.biospectrumasia.com/biospectrum/opinion/220592/use-smartphone-apps-biomedical-research). Over the last few years, an increasing number of applications and equipment have been “appletized” into smartphone apps to boost research productivity. In the same manner, survey-based research can benefit from apps that aid in the design and participation of surveys on smartphones.

Psychvey is a secure, simple and easy-to-use app on both web and Android platforms to help create and analyze surveys. Psychvey employs a three-tier software architecture including a presentation tier, a logic tier, and a data storage tier. The presentation tier

involves the design of surveys, where users create surveys in the web application. Answering a survey is via the web or the Android app. The logic tier supports the analysis, management, administration, and the remote connection between the mobile application and the database (RESTful web service). This web service is linked to the data storage tier using Microsoft SQL Server.

The Psychvey web application was created using the Microsoft .NET framework (C# programming language), while the web service and the Android application were developed in Java using Eclipse IDE (<https://www.eclipse.org/downloads/>).

Creating surveys

Psychvey enables users to create surveys easily. Users can specify the title and type of survey they wish to create (Fig. 1). Company or institution logos can be inserted for customization. For display categorization, surveys are set to “public” or “private”. “Public” surveys are displayed and available for public view in the app and webpage, whereas “private” surveys require the specific “SurveyID” for access. Expiry dates can also be assigned to limit the availability of the surveys.

Psychvey offers five different question types: “Single Selection Multiple Choice”, “Multiple Selection Multiple Choice”, “Open Ended”, “Likert Question” and “True or False”. These are dynamically added (Fig. 2). A “Save” button allows users to save each question as they are created, or the “Save All” button for saving multiple

* Correspondence: samuelg@bii.a-star.edu.sg

†Equal contributors

¹Bioinformatics Institute, Agency for Science, Technology, and Research (A*STAR), Singapore, Singapore

²Quintech Life Sciences Pte Ltd, Singapore, Singapore

Full list of author information is available at the end of the article

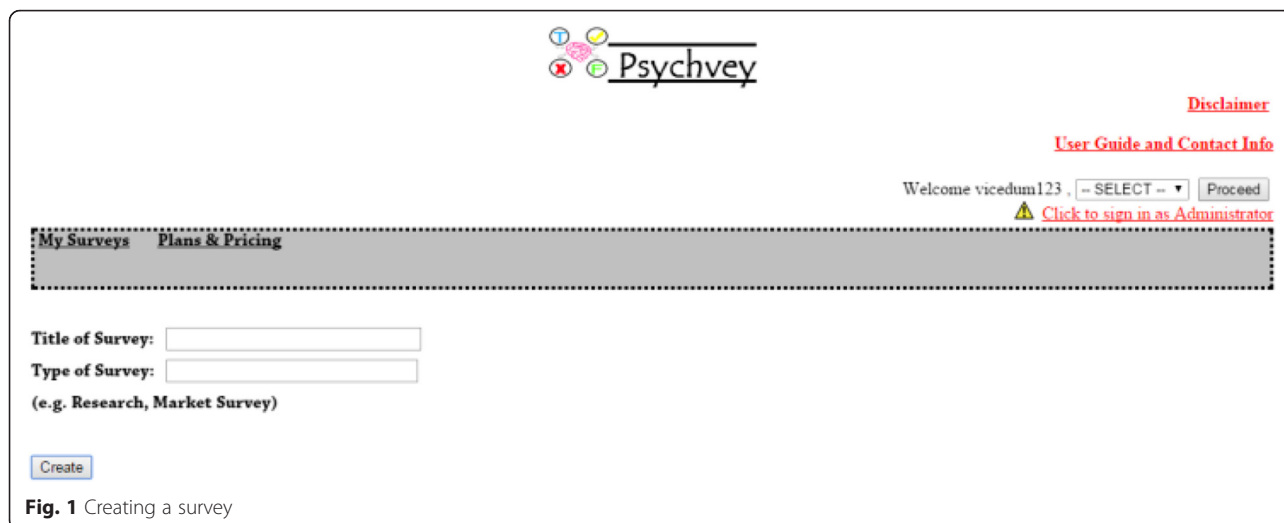


Fig. 1 Creating a survey

questions at a go. This allows the current session of the survey to be stored for later continuation in the survey creation. As a web app, these features can also be accessed using the mobile device browsers for on-the-go survey designs.

For clinical and psychological studies, information sheets and consent forms are often essential as part of informed-consent. These features are built-in to Psychvey where they are automatically displayed prior to the start of the survey (see Fig. 3). Checkboxes are customizable and can be added for additional criteria e.g. above 18 years of age. To protect both the surveyor and participant, participants are required to

acknowledge having read the information sheet and consent to the study prior to the questions.

Answering surveys

Participants can choose to answer a survey anonymously or through a registered account. For registered users, certain fields in a survey would be automatically populated from the user account profile e.g. age. In the selection of surveys to answer, “public” surveys would be displayed with their “SurveyID” in a table (see Fig. 4). One attempt is permitted for any survey for registered users. For the convenience of users,

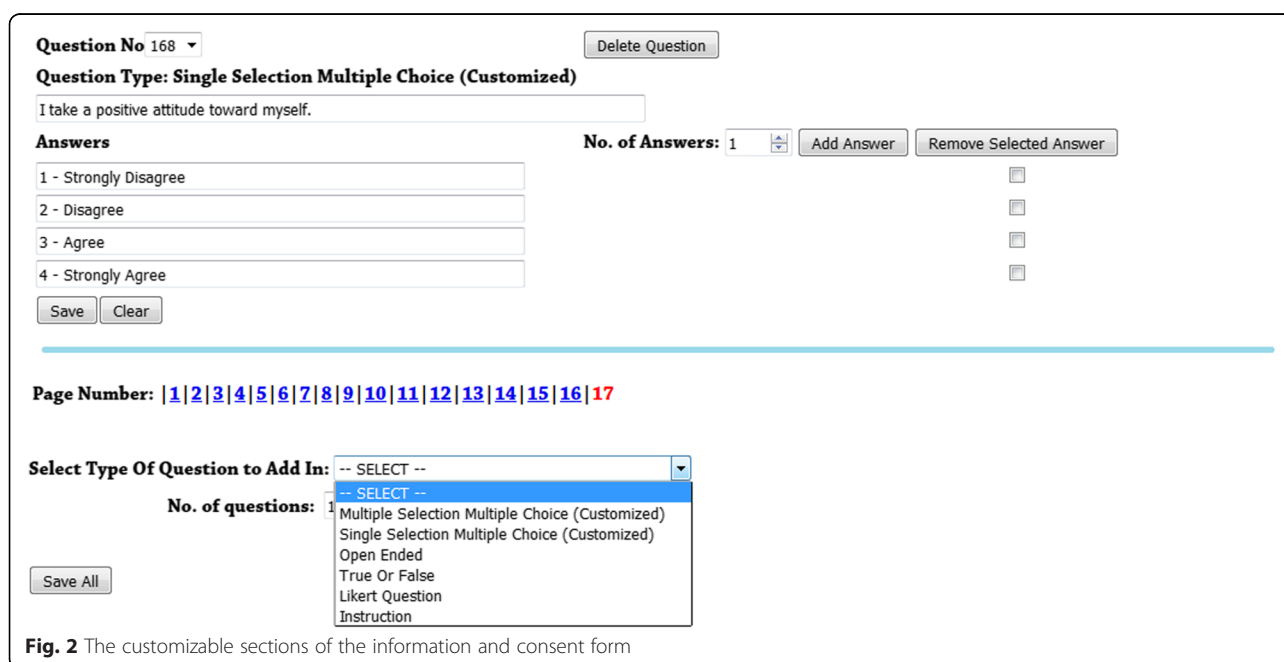


Fig. 2 The customizable sections of the information and consent form

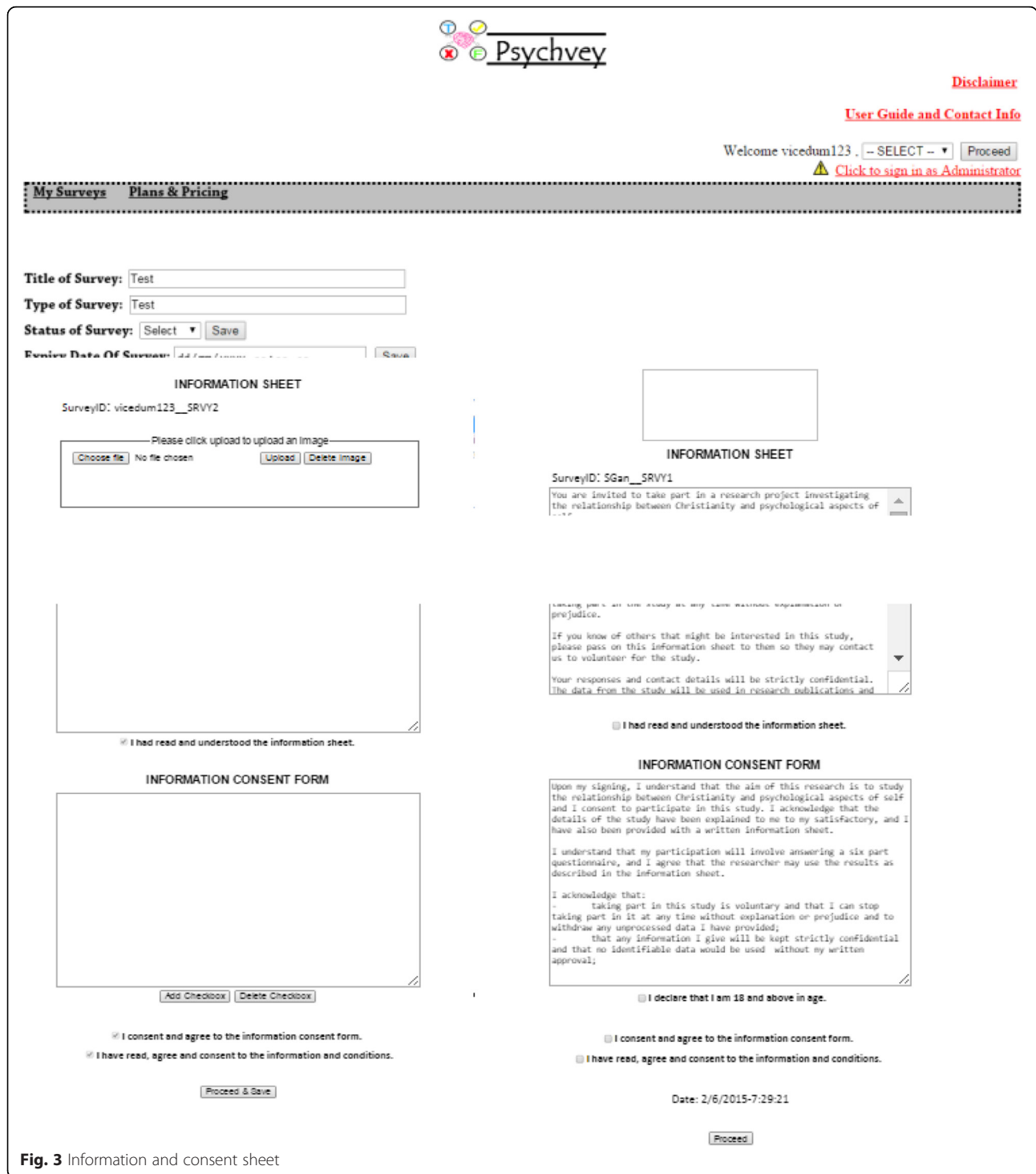


Fig. 3 Information and consent sheet

incomplete surveys can be saved to facilitate continuation at another session (feature not available for anonymous logins).

Analyze surveys

To analyze a survey, participants' responses can be exported to a spreadsheet, minimizing workload on

data entry and easy "copy and paste" to statistical package software. The export feature is only available for desktop versions and would categorize each question and sub-question as columns, whereas each participant would form a row. The results table is also displayed in the survey creator's account under the "Analyze Survey" tab of the specific survey.

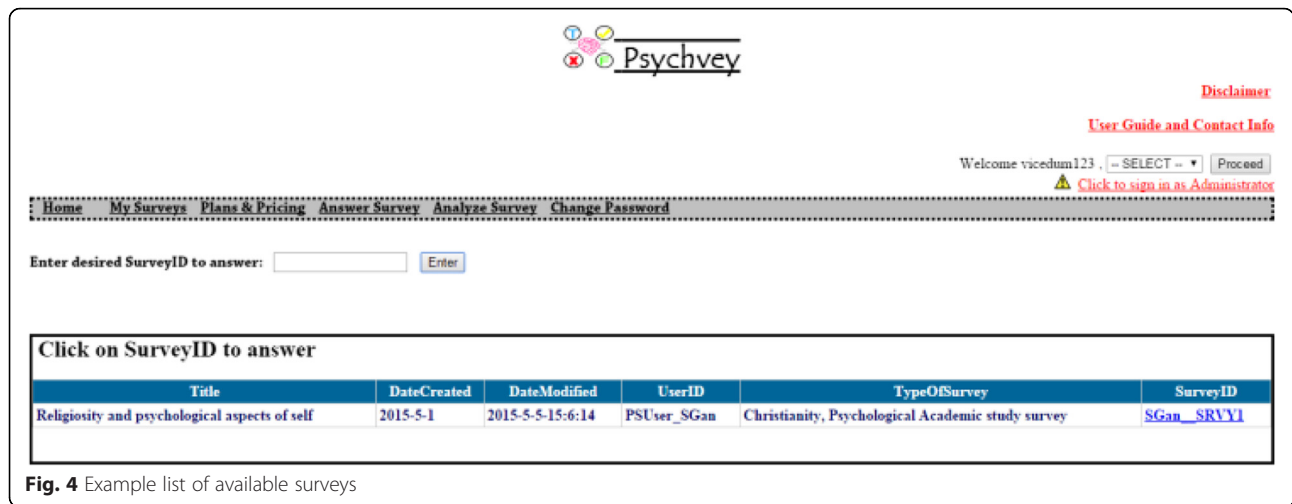


Fig. 4 Example list of available surveys

Conclusion

The Psychvey mobile and web application aids in information gathering in a paperless and convenient manner. Both researchers and survey participants can benefit from the web application and the Android version. It offers simple survey creation, analysis, and participation. For long surveys, both creators and participants can break the survey into multiple sessions with ease. Psychvey thus promises to be a valuable tool for market, clinical and psychology survey research.

Availability and implementation

PsychveyApp for Android is freely available on the Google Play Store as 'PsychveyApp'. The web version is available at <http://sgke.psychvey.com/>. More details on the app can be found at www.facebook.com/APDLab. The 'PsychveyApp' user guide is available at <http://tinyurl.com/PsychVey>.

The trial user account is free for use with set expiration and time limits on the surveys and respondents.

Competing interests

PsychVey is available free for trial use and is available commercially by Quintech Life Sciences Pte Ltd, Singapore.

Authors' contributions

PV and JPH made the website, webservice, database and app. IH did the debugging and implemented new features. SKE conceived and designed the website and app. All authors read and approved the final manuscript.

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Author details

¹Bioinformatics Institute, Agency for Science, Technology, and Research (A*STAR), Singapore, Singapore. ²Quintech Life Sciences Pte Ltd, Singapore, Singapore. ³p53 Laboratory, Agency for Science, Technology, and Research (A*STAR), Singapore, Singapore.

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