Pre-Analysis Plan
Part 1: A new review screen

Policy problem

The Personal Property Securities Register (PPSR) allows businesses to safeguard their security interests (money owed to them); helps businesses make informed purchasing decisions by letting them know whether the asset they are purchasing has outstanding financial obligations tied to it; and facilitates secure lending to businesses by financiers. Businesses can register on the PPSR by completing an online form hosted by the Australian Financial Security Authority (AFSA). Businesses need to get key elements of the registration exactly right. Even a small mistake may render the registration invalid, exposing the business to greater financial risk.

Research aims

This trial aims to test whether changes to the PPSR registration's review process can improve the usability and accuracy of registrations.

Specifically, we are looking to:

1. test whether a more involved review process will help users make fewer errors, and,
2. examine the impact the revised review screen had on user experience.

Interventions

Review Process

The intervention is a 'review process' (the process) shown to the user at the end of a PPSR registration, just before they submit the form. The process is comprised of a 'review point' pop-up and a redesigned 'review screen':

- The review point requires users to confirm they understand:
    - the importance of getting the form right, and
    - they now have an opportunity to review the form.
- On the actual review screen, registrants will need to confirm the Secured Party Group, the Grantor and the Collateral information is correct, or choose to update this information.

Primary outcome measures

Primary Outcome 1: Registration accuracy

We will measure accuracy using a proxy. We will estimate the accuracy of the registration by cross-referencing key registration information relating to the 'Grantor Identifier' with the Australian Business Register (ABR) and the Australian Securities Investment Commission (ASIC) databases. This is a binary measure; we will class observations either as 'correct' or 'incorrect'.

In most cases, the Secured Party Group or SPG (the party making the registration) must provide information about the other party in the transaction- the Grantor. Information that 'identifies' the grantor is referred to as an 'identifier'. This identifier can be an Australian Business Number (ABN), Australian Company Number (ACN), or one of other available identifier. The registrant must follow specific hierarchy of correct identifiers (i.e. if an organisation has multiple identifiers (e.g. ABN and ACN), the registrant must choose what identifier to use).

If at any point, cross-referencing the entity with ASIC and ABR databases shows that the wrong level or type of identifier was used, the registration will be deemed to be incorrect.

In cases where we cannot explicitly determine that a registration is incorrect by way of the Grantor Identifier, we will assume it is correct. Multiple grantors may be included within a single registration, so all grantor information must be correct in order for the registration to be valid.

If the grantor is the same as the registered Secured Party Group (SPG), the registration will be classified as inaccurate, even where the data entered correctly matches the ABR/ASIC data. This is a common and known error, and it is not possible for a valid registration to contain the same grantor and SPG.

Primary Outcome 2: Changes made after review point

We will examine whether or not users make changes to the form after the encounter the review point. AFSA will collect this data. We will treat this as a binary variable (made changes / did not make changes).

Secondary Outcome Measures

Ease of use – survey questions

We will conduct a four-question survey at the end of form. We will only use results from the first (*How did you find the registration process?)* and fourth (*How helpful did you find the review screen?*) question to inform this outcome measure, and it will be treated as a continuous variable for the purposes of our analysis.

Time taken

We will measure the amount of time taken by participants after the first point at which they reach the review screen until they submit the registration. We will also measure the time spent on the review screen itself.

Navigation back and forth

We will examine the number of movements back and forth between the review page and other parts of the form after users are exposed to the review screen.

Hypotheses

Primary Hypotheses

In registrations where users see the **new review process**:

H1. Registrations will have **lower error rates** in the grantor identifier section than those in the control group (**one-tailed**).

H2. A **greater proportion of users will make changes** to their registration before submitting, than those in the control group (**one-tailed**).

Secondary Hypotheses

H3a. There will be a difference in the self-reported ease of use of the **review screen**, when compared to the control group (**two-tailed**).

H3b. There will be a difference in the self-reported ease of use of the **registration process** as a whole, when compared to the control group (**two-tailed**).

H4a. There will be a **greater time** between seeing the review point and submitting the registration than those in the control group (**one-tailed**).

H4b. Users will spend more time on the review point and review screen than in the control group (**one-tailed**).

Sample characteristics

Trial participants will be PPSR account holders who create a registration during the duration of our trial.

We will exclude accounts that have ever created more than 10 registrations within a single month from the sample. All registration made by new accounts will be included.

Trial design

This trial is a field experiment in the form of a two arm randomised controlled trial.

We are interested in registrations, however, because individual accounts can create more than one than one registration, the trial will be randomised (clustered) at the account level.

Randomisation will be conducted on a rolling basis by AFSA as registrations are created. Accounts will be assigned to treatment or control in a 1:1 ratio.

The trial will remain in the field for up to fourteen weeks. At the conclusion of the trial, we will be left with forms that are complete (submitted), and ‘pending’ (forms that were not submitted but that were saved by users being partially complete). Pending forms will not contribute to our outcomes.

Power calculations

Based on historical data and using a conservative ICC estimate of 0.2, a sample size of around 4,970 registrations would allow for a minimum detectable effect size of about 3.5 percentage point change at a base accuracy rate of 60%.

The above calculation assumes conventional power of 0.8, but deviates from convention to an alpha of 0.1. We believe the risks associated with making a Type I error are small, therefore we have opted to increase alpha in order to achieve a reasonable level of statistical power.

Method of analysis

Primary and secondary analysis

We will use ordinary least squares (OLS) regression to estimate the effects of our intervention. For all hypotheses, effect estimates, confidence intervals and *p*-values will be derived from the following model:

$$Y_{ij} = \alpha + \tau T_i + \beta x_i + \gamma x_i T_i + v_j + \omega_{ij}$$

Where *Y* is one of our pre-registered primary or secondary outcomes, α is the intercept, T_i is an indicator for treatment group membership, x_i is a mean-centred covariate (see below), $x_i T_i$ is the interaction between the treatment indicator and the mean-centred covariate, v is the error for each cluster (account) *j,* and ω is the registration level error term.

Standard errors will be CR2 cluster robust with a degrees of freedom adjustment (Pustejovsky and Tipton, 2018).

Covariates

All models will include one covariate - the number of registrations each account previously created. This is included as a proxy measure for experience. We anticipate higher rates of previous registrations means an account is more experienced and therefore less likely to make a mistake. This covariate will be mean centred and interacted with the treatment indicator as per Lin (2013).

Missing Data

Registrations with critical information not entered will be treated as missing, however, we do not expect this to be widespread in registry entries. The survey is optional, so we expect to have at least some missing data in our dataset.

Registrations that are incomplete by the time the trial is closed will be treated as missing. Where data is missing for a specific outcome we will exclude that record for the corresponding analysis.

Pre-analysis plan commitments

We have two standard commitments:

- ‘No trial data have been collected/no analysis has been undertaken prior to the completion of this pre-analysis plan.’
- ‘We will be transparent about, and provide justification for, any deviations (additions or omissions) from this plan.’