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Why Do People Adopt, or Reject, Smartphone Password Managers?

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Motivation...

Password Managers can help people to manage their passwords

They are not widely used!

How can we encourage their adoption?



USERNAME:
Administrator

PASSWORD:
.....

LOGIN

Password Managers

Password Managers provide a vault to store all passwords... securely. These are accessed via ONE strong password

We all carry smartphones so we could use one of the Smartphone apps

So, why don't people use them?



Factors from Related Areas

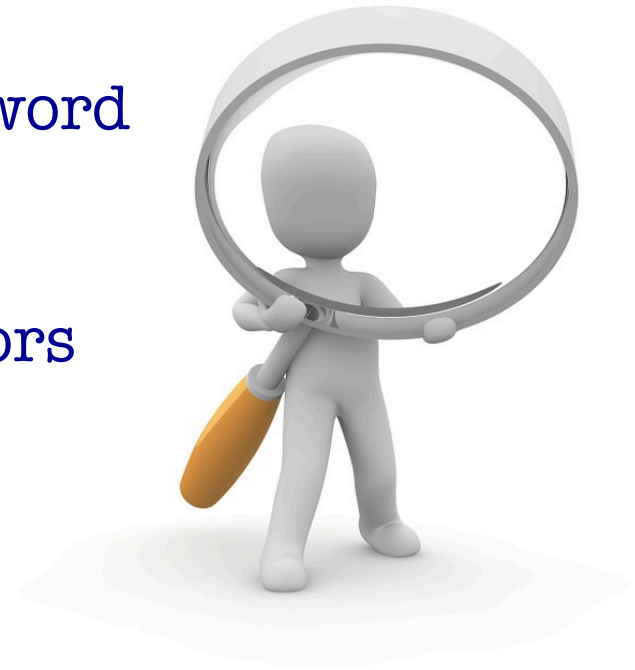


1. Contextual – usefulness, ease of use, security, cost, effort, gender, interest in technology
2. Psychological & Sociological – support for relatedness, social needs, subjective norms, ethics, habit
3. Age Specific – technology-anxiety, resistance to change
4. Hedonic – enjoyment

Our Study

Carried out to determine:

1. Current Use of Smartphone Password Managers
2. Identify Adoption/Rejection Factors



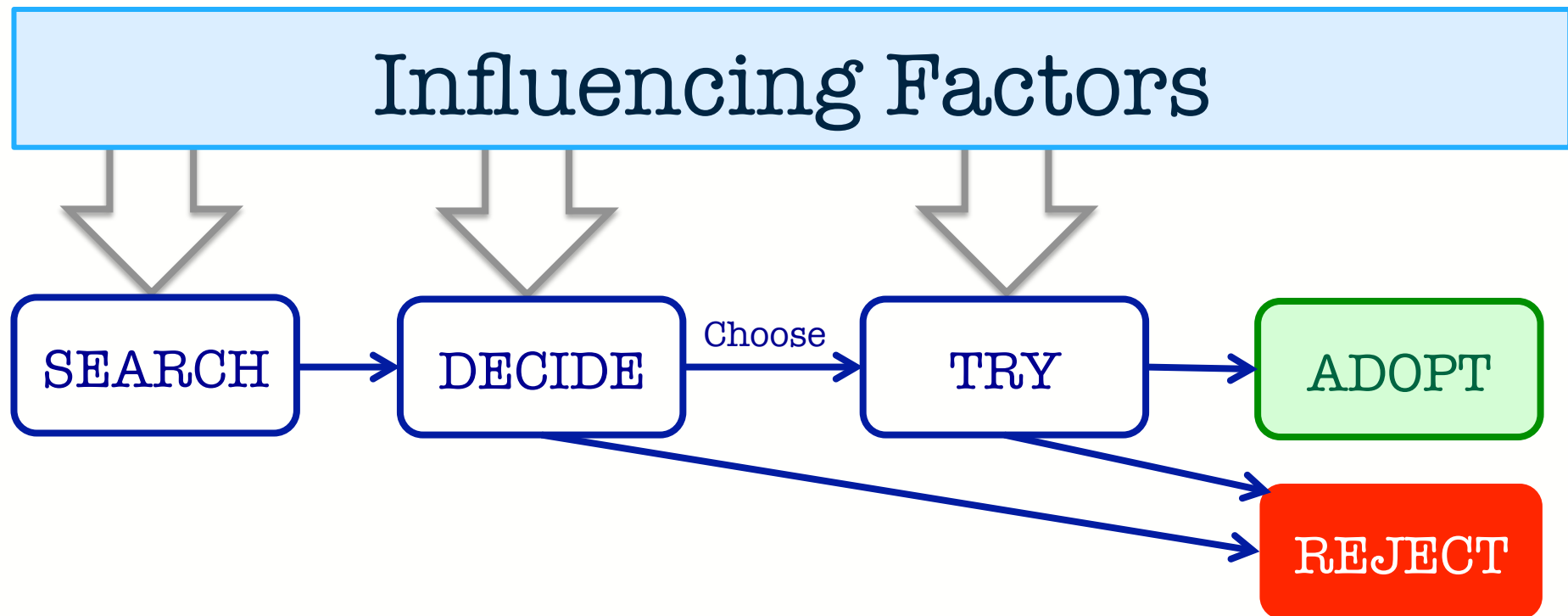
Methodology

Collected data from:

1. Playstore and iTunes Appstore Password Manager Reviews
2. Online Survey



Adoption Life Cycle



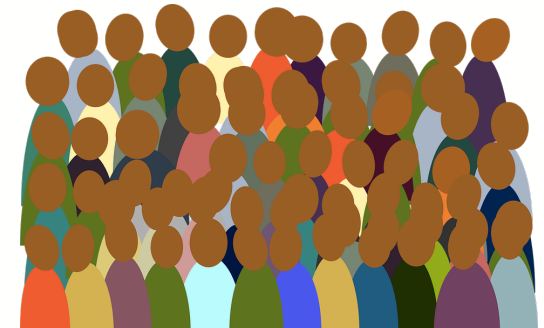
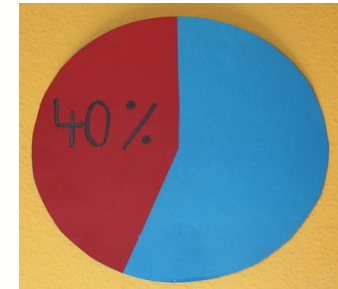
Study

120 Reviews (60% positive)

- UK & USA Stores
- None from Saudi Arabia

352 Responses to Online Survey

- Snowball Sampling
- 17 were discarded due to not answering questions or nonsense responses



Password Manager Usage

17.6% (62) used a password manager

BUT!

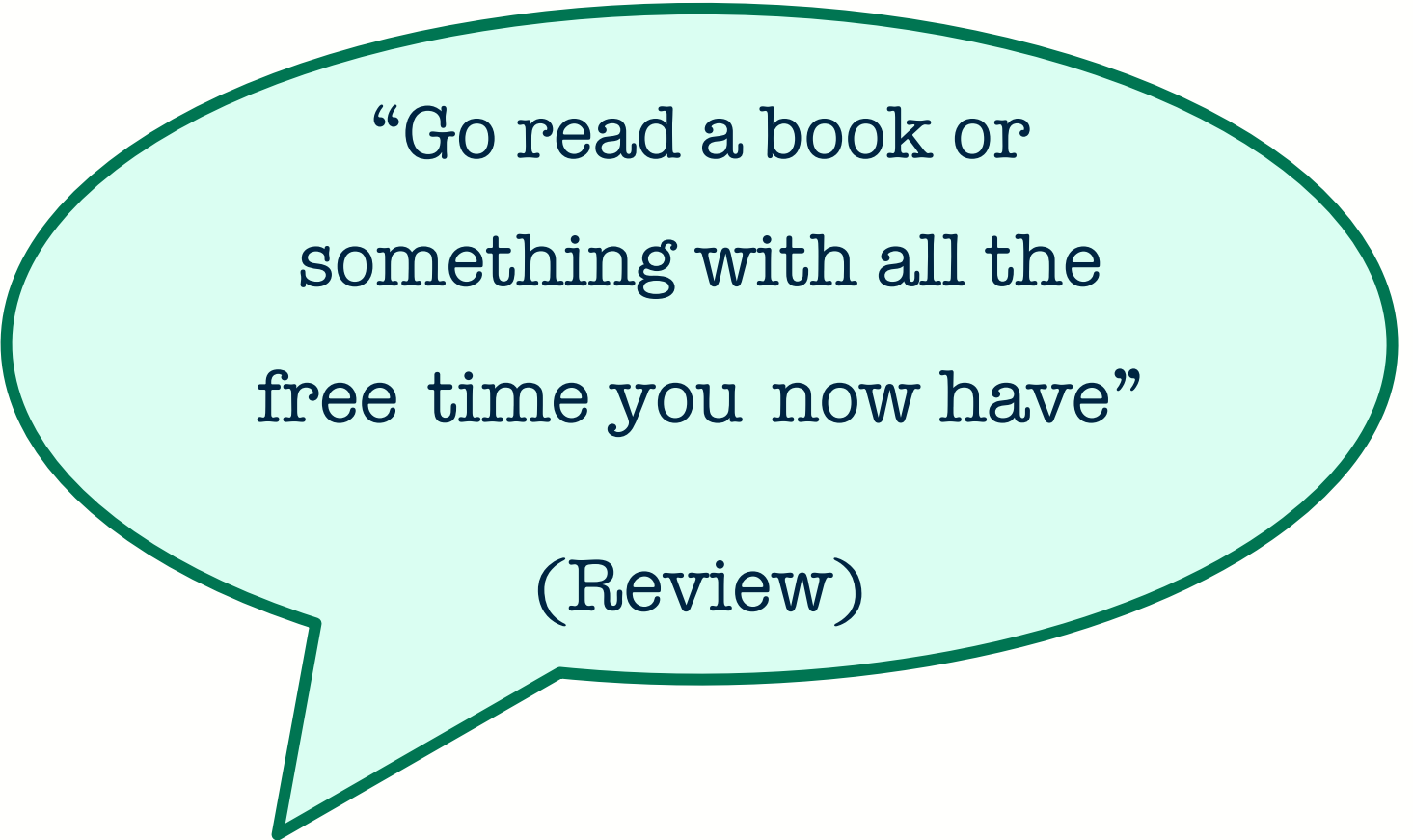
- Only 24 provided the name of an actual password manager
- The others used browser password recording
- Some thought it referred to the screen lock mechanism
- 32 didn't understand the term



Adoption Factors (13)

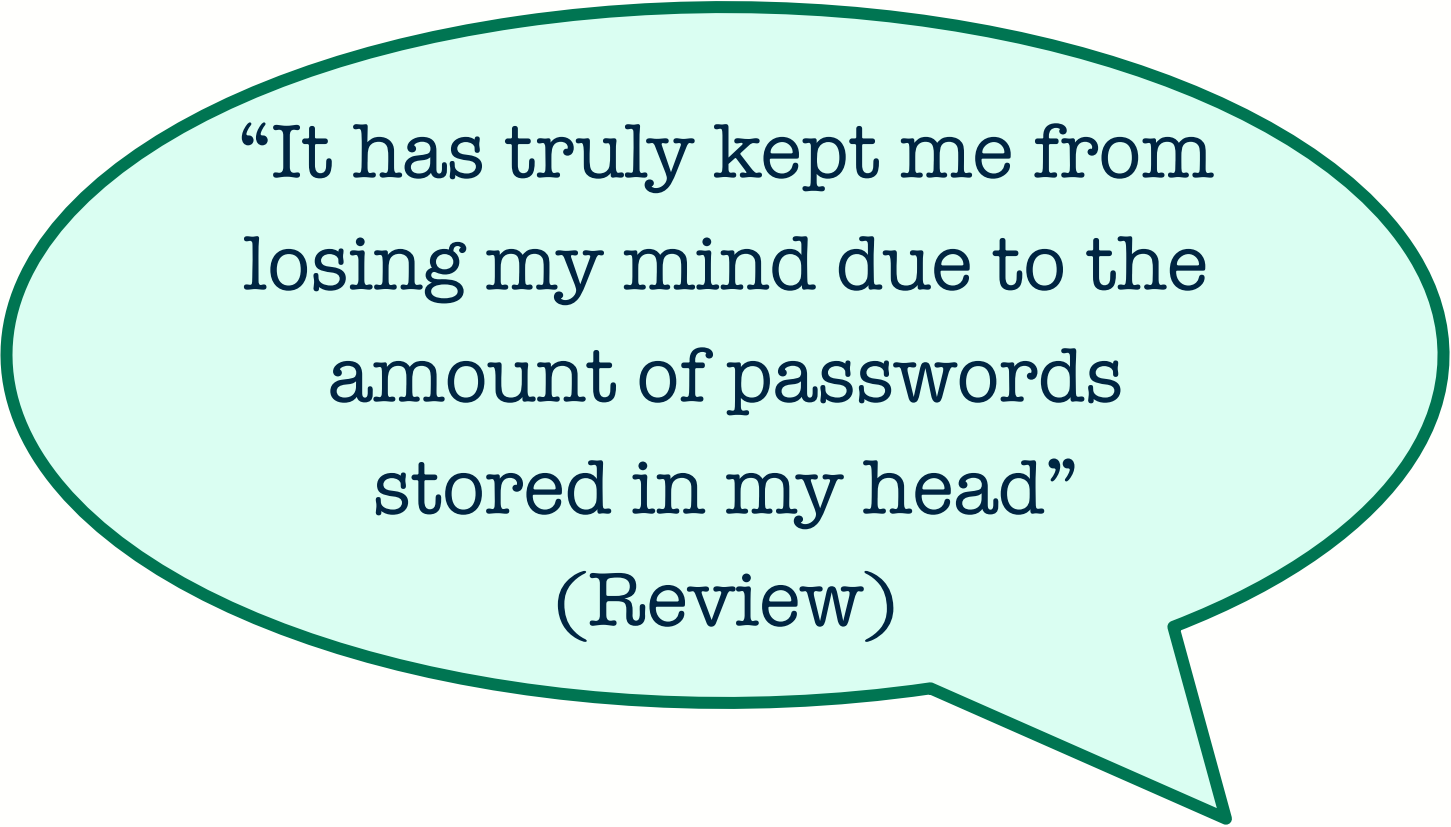


1. Subjective Norms
2. Time Saving
3. Experience of being hacked
4. Privacy
5. Security (including feeling secure)
6. Social Need Fulfilment
7. Perceived Usefulness



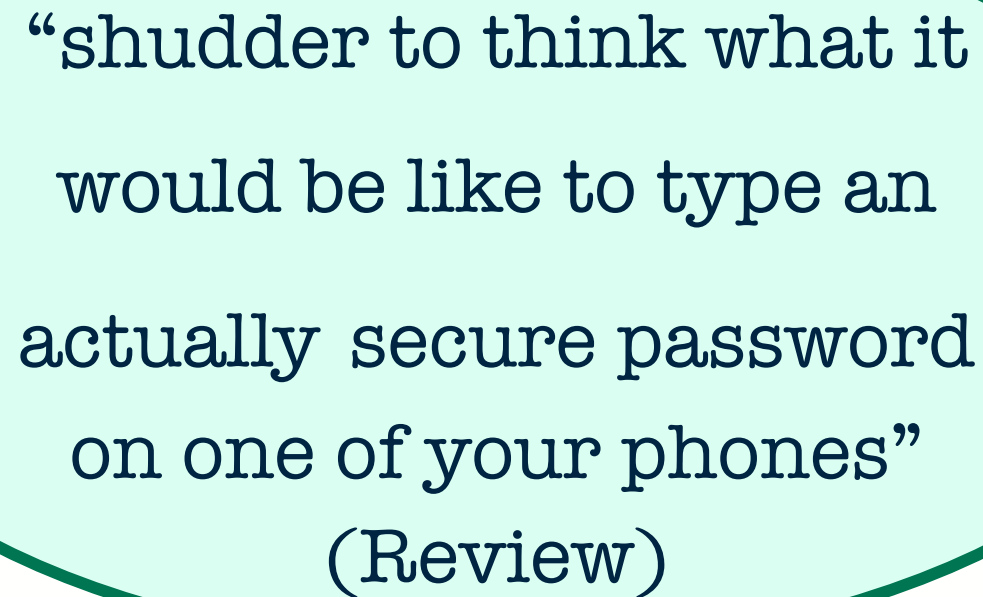
“Go read a book or
something with all the
free time you now have”

(Review)




“It has truly kept me from
losing my mind due to the
amount of passwords
stored in my head”

(Review)



“shudder to think what it
would be like to type an
actually secure password
on one of your phones”
(Review)



“It acts as a complete storage for everything important such as wallet items, router & server info, and much much more” (Review)

Rejection Factors (18)



1. Poor/No Awareness

2. No Perceived Usefulness

3. Cost

4. Security/Privacy
Concerns

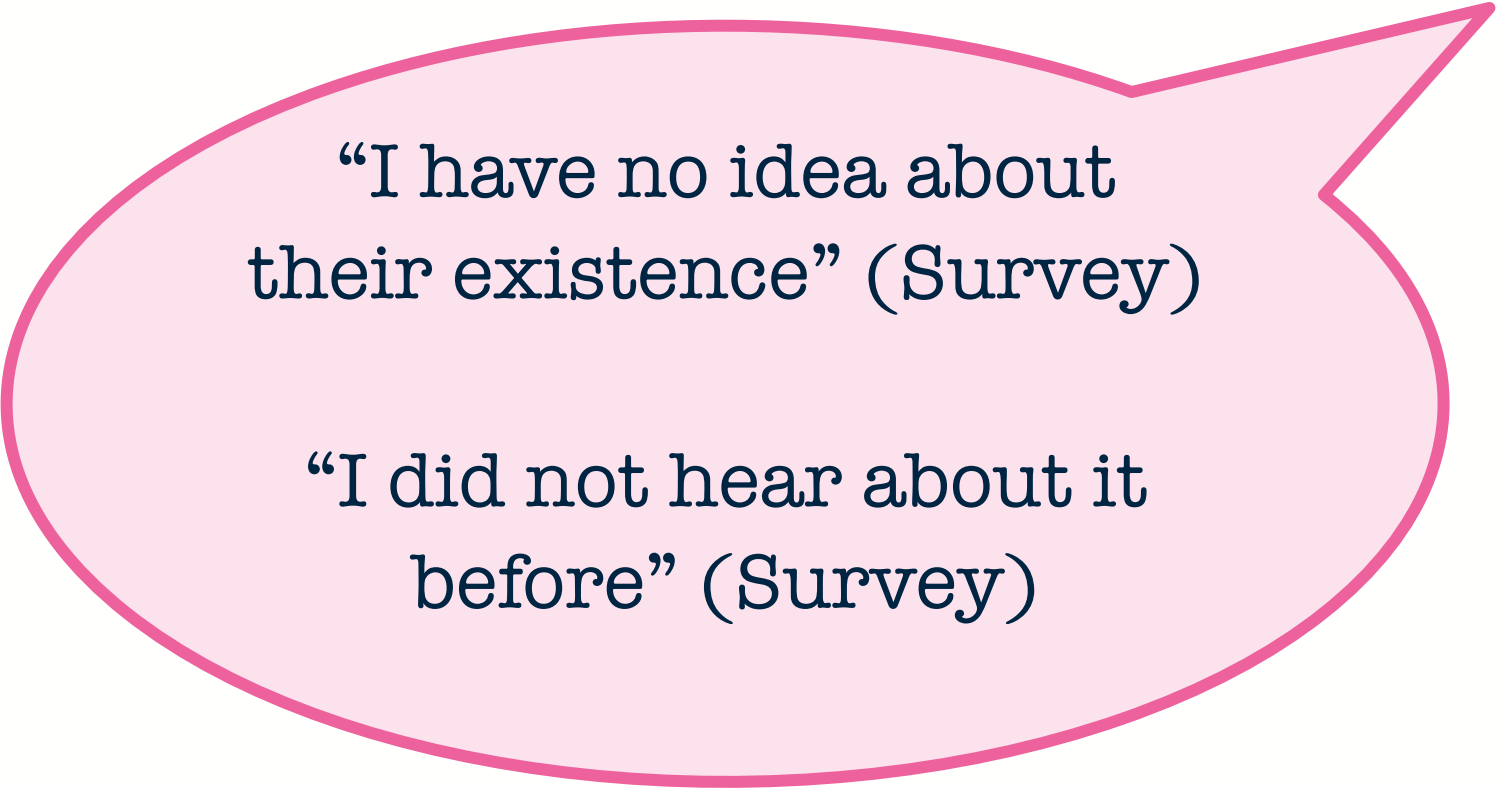
5. No Control

6. Need Mastery

7. (Un)certainty

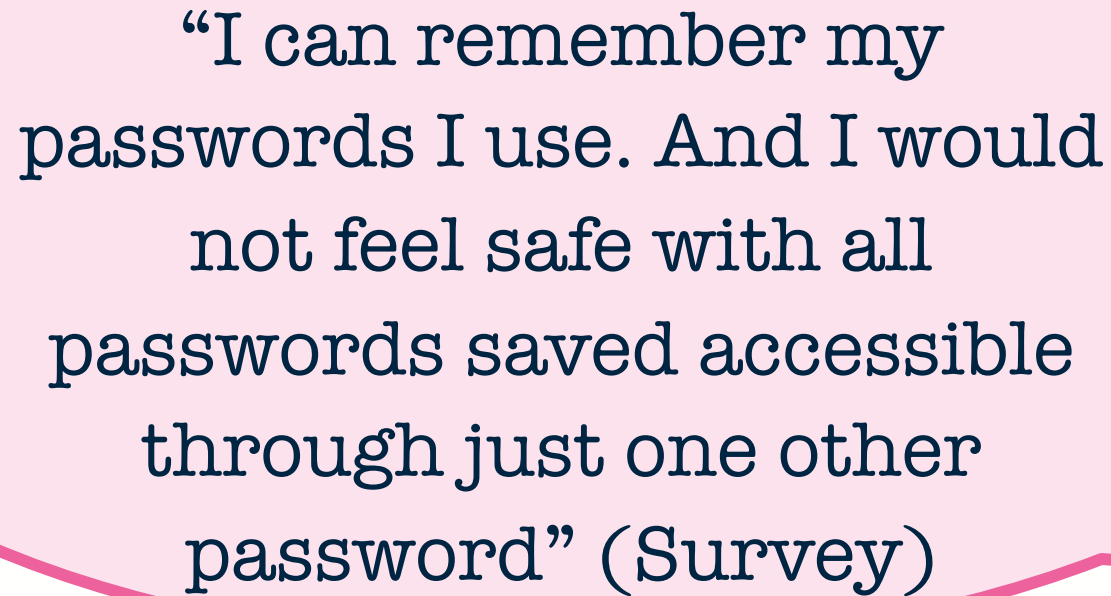
8. Insignificance

Daniel
Pink's
Motivators

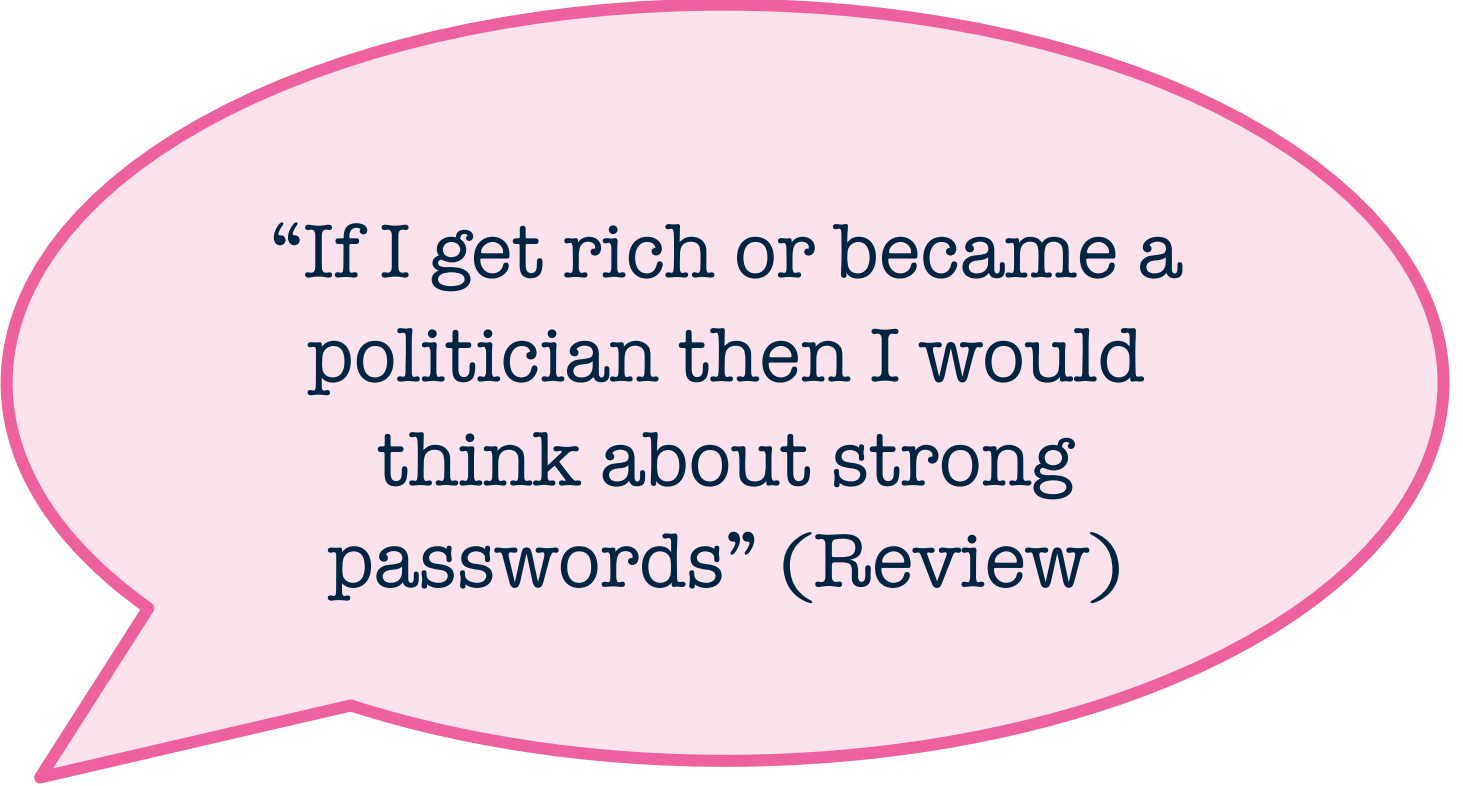
A pink speech bubble with a dark pink outline, containing two lines of text.

“I have no idea about
their existence” (Survey)

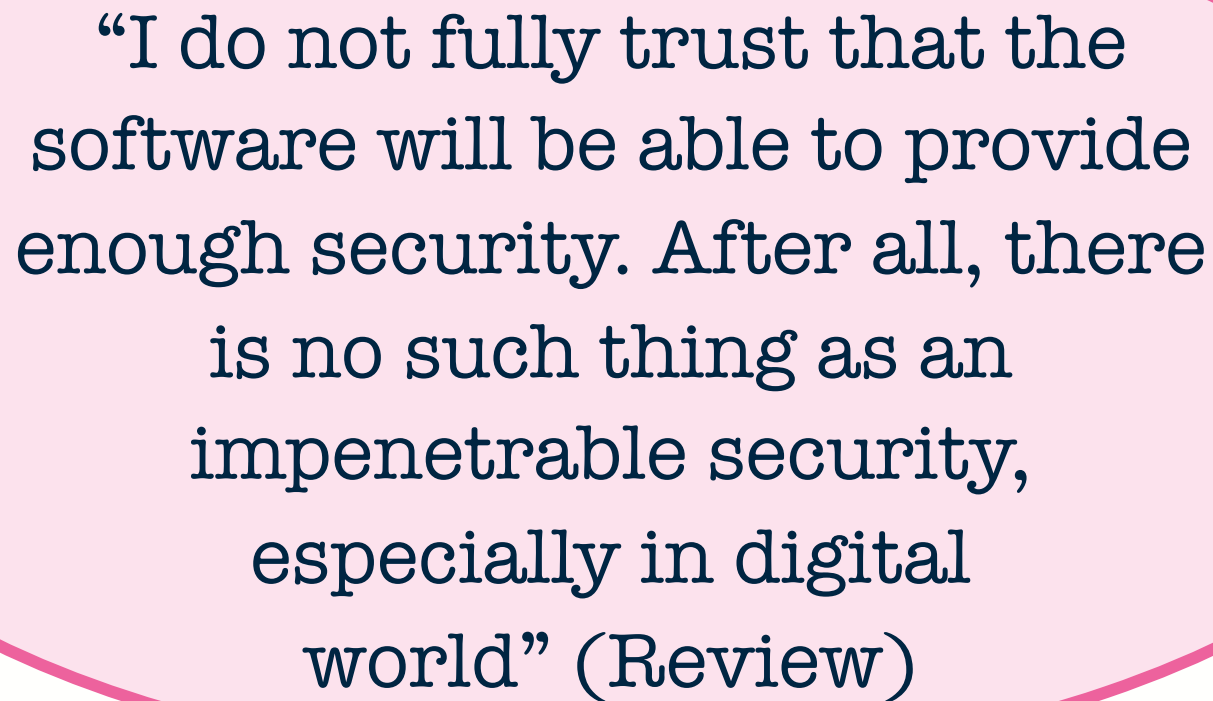
“I did not hear about it
before” (Survey)

A pink speech bubble with a darker pink outline, containing text. The bubble is oriented horizontally and has a small tail pointing towards the bottom right.

“I can remember my
passwords I use. And I would
not feel safe with all
passwords saved accessible
through just one other
password” (Survey)



“If I get rich or became a
politician then I would
think about strong
passwords” (Review)



“I do not fully trust that the software will be able to provide enough security. After all, there is no such thing as an impenetrable security, especially in digital world” (Review)

Summary



	Adoption	Rejection
Contextual	Time, Ease of Use, Perceived Usefulness, Perceived Effort Amelioration, Experience	No perceived usefulness, Negative Features, Cost, Perceived Effort
Psychological & Sociological	Subjective Norms, Social Need, Security, Privacy	Not wanting to be first. Privacy Concerns, Security Concerns, Competency, Control, Mastery, Uncertainty

SEARCH

Time Pressure and Workload; Subjective Norms;
Experience of being Hacked; Memory Support;
Typing Difficulty; Privacy concerns; Security concerns;
Poor or no awareness; Mastery; Not wanting to be first;
Insignificance; Data is not valuable; Feeling secure;
Owning few passwords;

Safe
Sharing

DECIDE

Insignificance;
Data is not valuable;
Owning few passwords;
Feeling secure;

Access, Availability,
Feeling Secure,
Social & media influence,
Time Commitment, Control

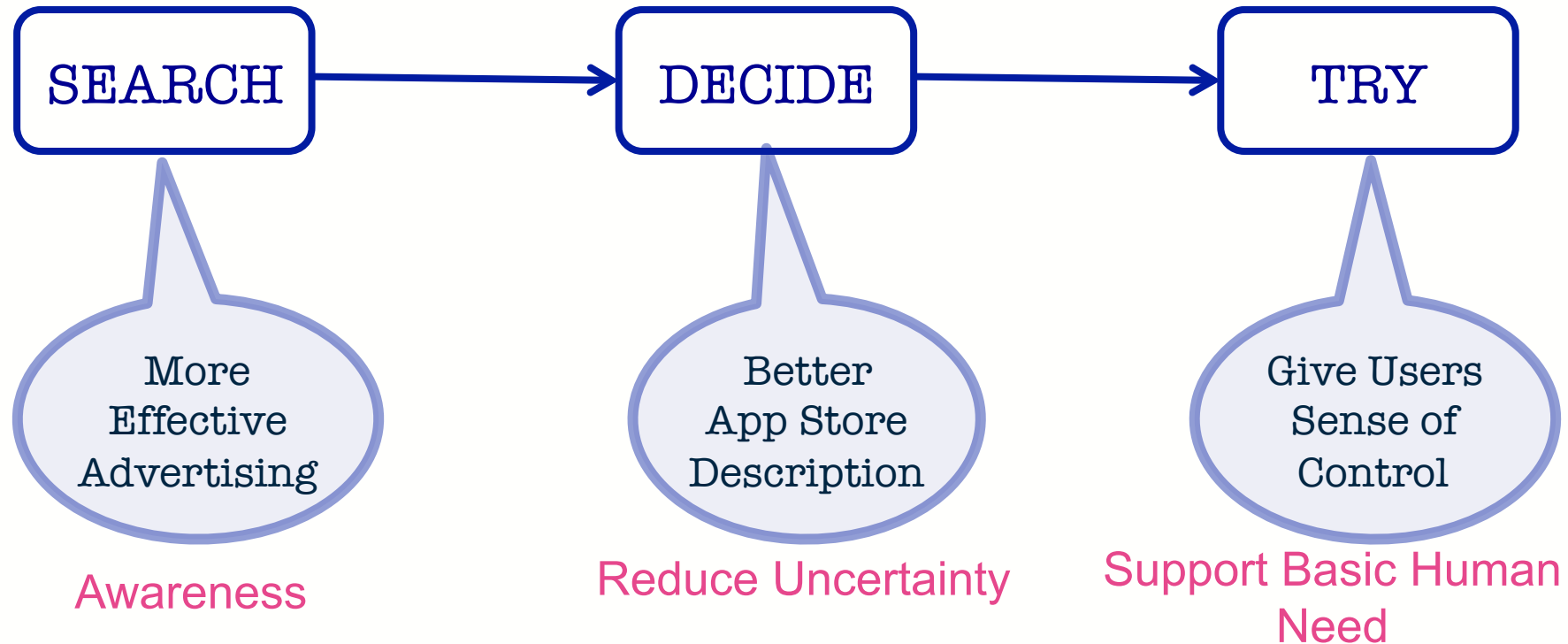
Usability,
Additional Features,
Uncertainty, Cost

Transparency in Reporting;
Customer Support;
Regular Updates;
Support from other service providers;

Device resource consumption: Memory, Speed & Battery; Internet Connection;
Device & Country exclusive Features; Require Third-Party Cloud Service;

TRY

Encouraging Adoption



Limitations



1. We did not collect gender or any other demographics.
(to encourage disclosure)
 - a) Country-specific differences could have been missed
2. Snowball sampling means the sample might not be representative of the general population
3. Reviews might not reflect the views of all users
4. The impact of different factors were not weighted.
 - a) Future work should do this

Conclusions



We carried out a study to find out why password managers were not being used

We discovered a number of factors that encouraged and discouraged adoption

We made some suggestions about how adoption can be encouraged



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Thanks for your attention!

Any Questions?