
WHY OLDER ADULTS (DON'T) USE PASSWORD MANAGERS

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MOTIVATION

- Low **adoption rate** of password managers (PM). ^[1]

[1] Nora Alkaldi and Karen Renaud. Why do people adopt, or reject, smartphone password managers? The 1st European Workshop on Usable Security (EuroUSEC), 2016

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- **Older adults** also express the necessity of convenience and privacy. [2]

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[2] Anabel Quan-Haase and Dennis Ho. Online privacy concerns and privacy protection strategies among older adults in east york, canada. Journal of the Association for Information Science and Technology, 2020.

MOTIVATION

- **Low adoption rate** of password managers (PM). [1]
- **Older adults** also express the necessity of convenience and privacy. [2]
- **Declining levels** of physical dexterity and cognitive prowess. [3]

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[2] Anabel Quan-Haase and Dennis Ho. Online privacy concerns and privacy protection strategies among older adults in east york, canada. Journal of the Association for Information Science and Technology, 2020.

[3] Avner Caspi, Merav Daniel, and Gitit Kavé. Technology makes older adults feel older. Aging & mental health, 23(8):1025–1030, 2019.

RESEARCH QUESTIONS

What are the challenges faced (or) barriers impacting adoption of password managers for older adults?

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What are the differences and similarities of the above with that of a younger population?

Replication of elements in Pearman et al.'s study

[Sarah Pearman, Shikun Aerin Zhang, Lujio Bauer, Nicolas Christin, and Lorrie Faith Cranor. Why people (don't) use password managers effectively. In Fifteenth Symposium On Usable Privacy and Security (SOUPS 2019). USENIX Association, Santa Clara, CA, pages 319–338, 2019.]

STUDY DESIGN

- Used Pearman et al.'s interview protocol.
- 26 semi-structured interviews (age > 60).
 - 30 minutes for non-PM users, 45-60 minutes for built-in and installed PM users.
- Two state-operated senior centers.
 - Diverse socio-economic and educational backgrounds
- Inductive thematic coding with two coders.

GROUPS OF PARTICIPANTS

NON-PM USERS

Ten (10) participants

BUILT-IN PM USERS

Nine (9) participants

INSTALLED PM USERS

Seven (7) participants

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Address Books
Sticky Notes
Business Cards

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Google Chrome



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MacOS Keychain

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LastPass



KeePass

1Password

OUTLINE

- Barriers towards adoption of separately-installed PMs
 - Non-PM users 
 - Built-in PM users 
- Experiences of separately-installed PM users 
- Adoption motivators for separately-installed PM users 



BARRIERS TO INSTALLED PM ADOPTION NON-PM USERS

- Cost-conscious – not worth paying for.

“When you’re on a fixed income, you’re counting your pennies. And you gotta see what’s important.”



BARRIERS TO INSTALLED PM ADOPTION NON-PM USERS

- Cost-conscious – not worth paying for.

- Importance of control.

“When you’re on a fixed income, you’re counting your pennies. And you gotta see what’s important.”

“It’s simple. I always remember what a book is. And my book is safe. But you can take control of my phone.”



BARRIERS TO INSTALLED PM ADOPTION NON-PM USERS

- Single point of failure.

“What if your computer or something is down, and all your passwords are stored, and you can’t retrieve ‘em?”



BARRIERS TO INSTALLED PM ADOPTION NON-PM USERS

- Single point of failure.

- Not worth the time and effort.

“What if your computer or something is down, and all your passwords are stored, and you can’t retrieve ’em?”

“I’m not going to be making any more passwords now at my age.”



COMPARISON TO YOUNGER ADULTS

Older Adults

- Less inclined to pay for special features in PMs.

Younger Adults (Pearman et al.'s Study)

- More inclined to pay for special features in PMs.



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- Less inclined to pay for special features in PMs.
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Younger Adults (Pearman et al.'s Study)

- More inclined to pay for special features in PMs.
- Valued control in organization of passwords.



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- Valued control in password management methods.
- Single point of failure – technology failure
- Not worth adoption – age and time

Younger Adults (Pearman et al.'s Study)

- More inclined to pay for special features in PMs.
- Valued control in organization of passwords.
- Single point of failure – external threats
- Not worth adoption – accounts not important



BARRIERS TO INSTALLED PM ADOPTION BUILT-IN PM USERS

- No strong incentives to change their routine.
Less sense of urgency.

“I would have to be convinced that it is really beneficial to me in some way. Nothing has happened to me to motivate me to use a password manager.”



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BARRIERS TO INSTALLED PM ADOPTION

BUILT-IN PM USERS

- No strong incentives to change their routine.
Less sense of urgency.
- Set-up process would be too cumbersome.
- Less trust in the security of PMs.

“I would have to be convinced that it is really beneficial to me in some way. Nothing has happened to me to motivate me to use a password manager.”

“They can hack into even the government so what is to say they can’t hack into a password manager?”



COMPARISON TO YOUNGER ADULTS

Older Adults

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Younger Adults (Pearman et al.'s Study)

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COMPARISON TO YOUNGER ADULTS

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- Loved the autofill feature of built-in PMs.
- Aware of most features in installed PMs.

Younger Adults (Pearman et al.'s Study)

- Loved the autofill feature of built-in PMs.
- Unaware of certain features in installed PMs (such as password generation)



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- Expressed more distrust towards installed PMs.

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EXPERIENCES OF SEPARATELY INSTALLED PM USERS

- Easy and simple set-up process.

“The website had a list of instructions on what to do. The instructions were very clear, and if I followed the steps as it was written, it was no problem.”

EXPERIENCES OF SEPARATELY INSTALLED PM USERS

- Easy and simple set-up process.
- Dislike and distrust the process of synchronization.

“The website had a list of instructions on what to do. The instructions were very clear, and if I followed the steps as it was written, it was no problem.”

“If they claim to be syncing passwords across all my devices, that means they are storing them somewhere outside my apartment.”

ADOPTION MOTIVATORS FOR SEPARATELY-INSTALLED PM USERS

- Recommended by family members.

“My son recommended it to me...I had a brief discussion with him on how to create my passwords and he helped me.”

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ADOPTION MOTIVATORS FOR SEPARATELY-INSTALLED PM USERS

- Recommended by family members.
- Too many passwords to remember.
- Higher security benefits.

“My son recommended it to me...I had a brief discussion with him on how to create my passwords and he helped me.”

“Since I am using it only on the PC, all the stuff is stored in the PC and nowhere else, and maybe they are encrypted.”

COMPARISON TO YOUNGER ADULTS

Older Adults

- Enjoyed the password generation feature in their PMs.

Younger Adults (Pearman et al.'s Study)

- Some users disliked password generation and would reuse old passwords.

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- Some users disliked password generation and would reuse old passwords.
- Preferred having cloud storage capabilities.

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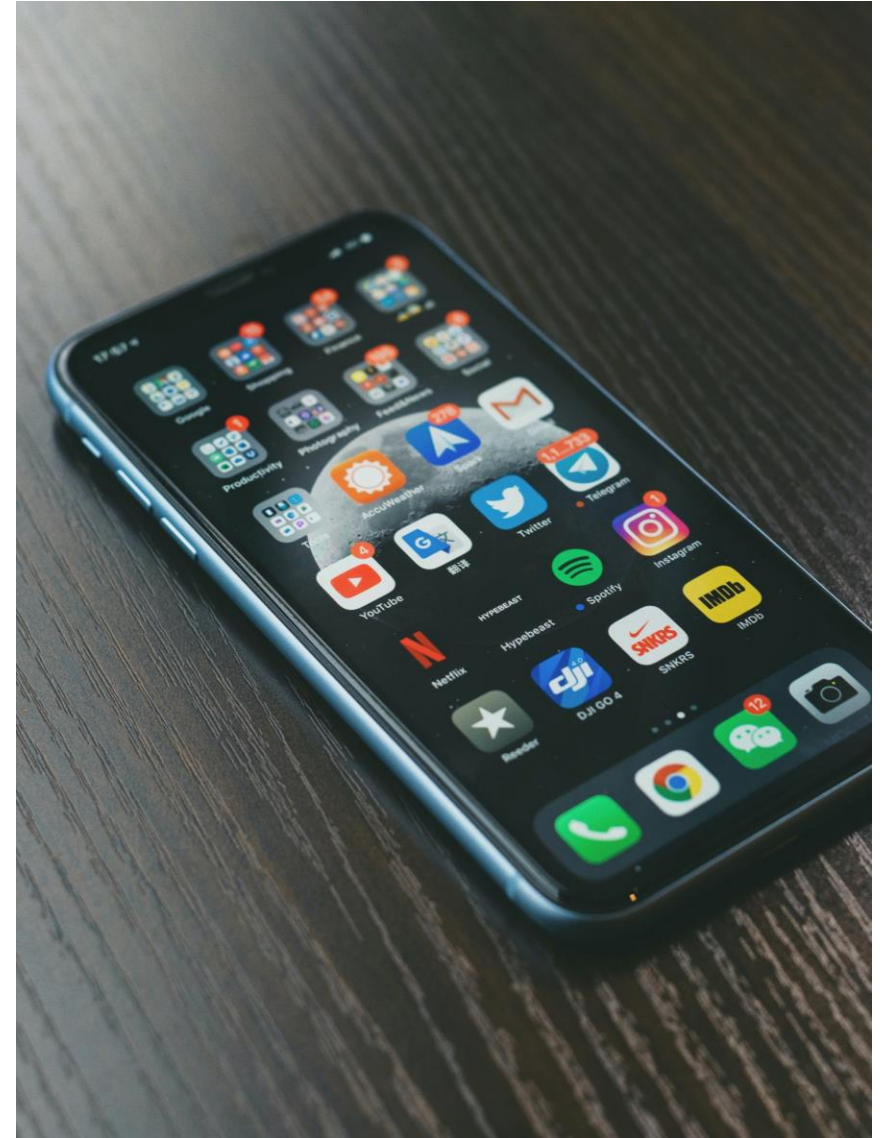
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- Preferred having cloud storage capabilities.
- Preferred synchronization across devices.
- Recommended by colleagues and online forums.

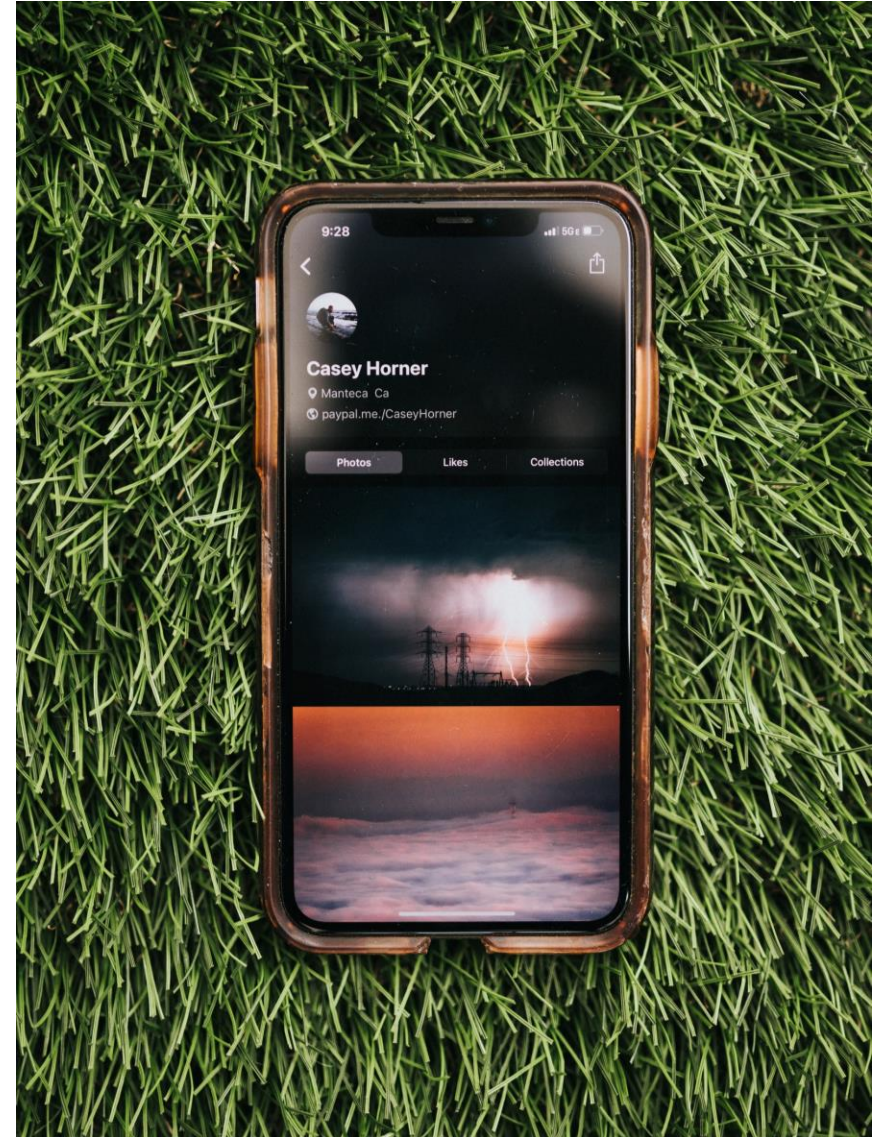
DISCUSSION OF BARRIERS TO PM ADOPTION

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DISCUSSION OF BARRIERS TO PM ADOPTION

- Time management and disruptions.
- Effect of technology on memory and control.
- Lack of self-efficacy and lack of trust.



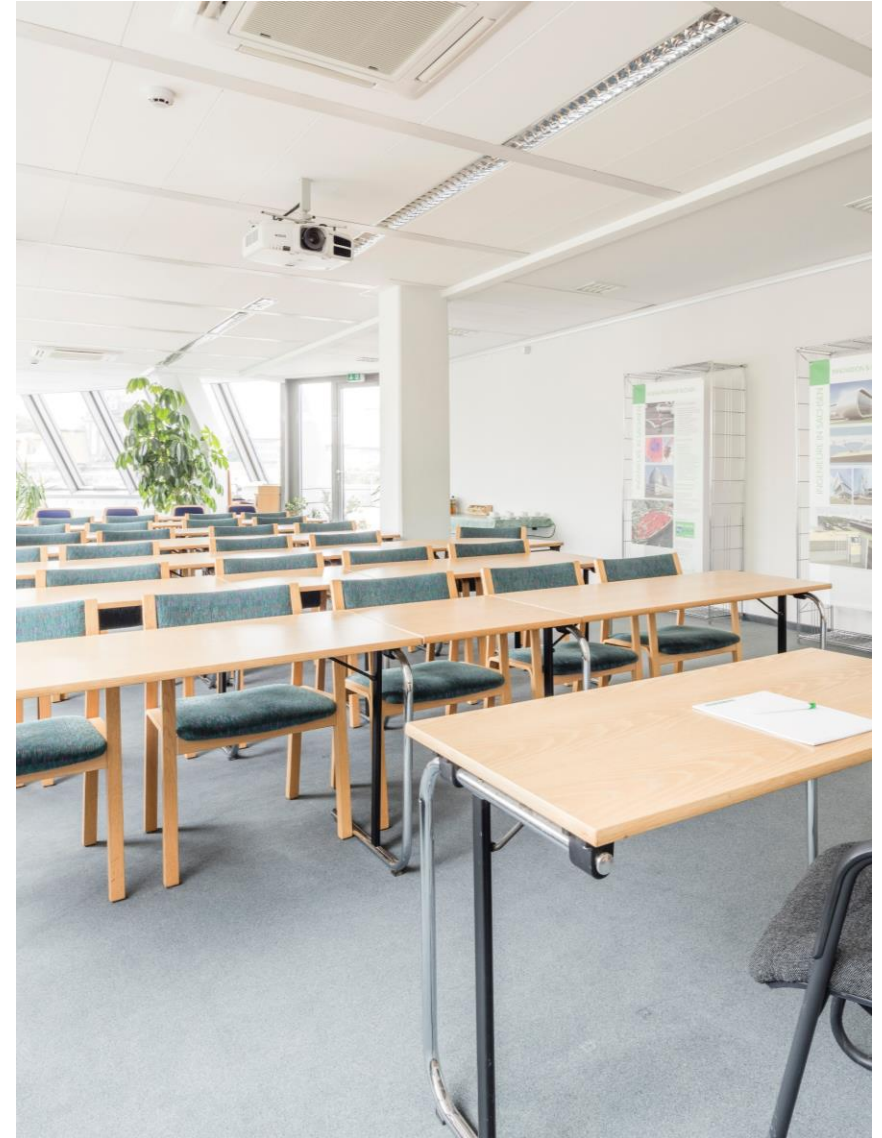
ENCOURAGING PM ADOPTION

- Advocacy from family members.



ENCOURAGING PM ADOPTION

- Advocacy from family members.
- The role of education and outreach.



DESIGN IMPLICATIONS

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- Reassure users of password security on PM interfaces.
- Provide nudges to use PMs during account creation on websites.
- Streamlined set-up process.

CONCLUSION AND TAKEAWAYS

Barriers to PM adoption among older adults:

- Not worth the time and effort to set-up.
- Feel the need to have control and ownership.
- Lack of self-efficacy.
- Lack of trust.

PM adoption can be encouraged through the advocacy from family members and trusted friends, and through educating its importance and benefits.

Methodological contributions – used existing validated codebook for a different user group to draw direct comparison of themes.

THANK YOU!

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