



**“I’ve Got Nothing to Lose”:
Consumers’ Risk Perceptions and Protective Actions
after the Equifax Data Breach**

Yixin Zou, Abraham H Mhaidli, Austin McCall, Florian Schaub





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- ◆ Who was affected by this breach?



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- ◆ Who was affected by this breach?
- ◆ For those affected, how many of you have frozen your credit report?



EQUIFAX

- ◆ One of the **big three** U.S. credit bureaus.





EQUIFAX

- ◆ One of the **big three** U.S. credit bureaus.
- ◆ Key function
 - ◆ Provide **credit reports** of **individual consumers** to businesses.





THE EQUIFAX DATA BREACH

- ◆ Made public on **September 7th, 2017.**
- ◆ **146.6** million consumers affected.^[1]
- ◆ Information exposed:
 - ◆ Names
 - ◆ Addresses
 - ◆ Birth dates
 - ◆ **SSNs**
 - ◆ ...



[1] <https://www.nbcnews.com/news/us-news/equifax-breaks-down-just-how-bad-last-year-s-data-n872496>



THE EQUIFAX DATA BREACH

- ◆ Available protective measures:
 - ◆ Credit freeze.
 - ◆ Fraud alert.
 - ◆ Identity theft protection.
 - ◆ Credit monitoring.
 - ◆ ...





THE EQUIFAX DATA BREACH

- ◆ Available protective measures:
 - ◆ Credit freeze.
 - ◆ Fraud alert.
 - ◆ Identity theft protection.
 - ◆ Credit monitoring.
 - ◆ ...
- ◆ Low usage of **credit freeze** and **fraud alert**.^[2]



[2] <https://www.creditsesame.com/blog/credit/credit-cards-hacked-only-one-percent-fight-back-with-credit-freezes/>



RESEARCH QUESTIONS

1. What are consumers' **mental models** of credit bureaus?



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2. How do consumers perceive the **risks** of the Equifax data breach?
3. What **protective actions** did consumers take in response to the Equifax data breach, and **what are their reasons for taking or not taking actions?**



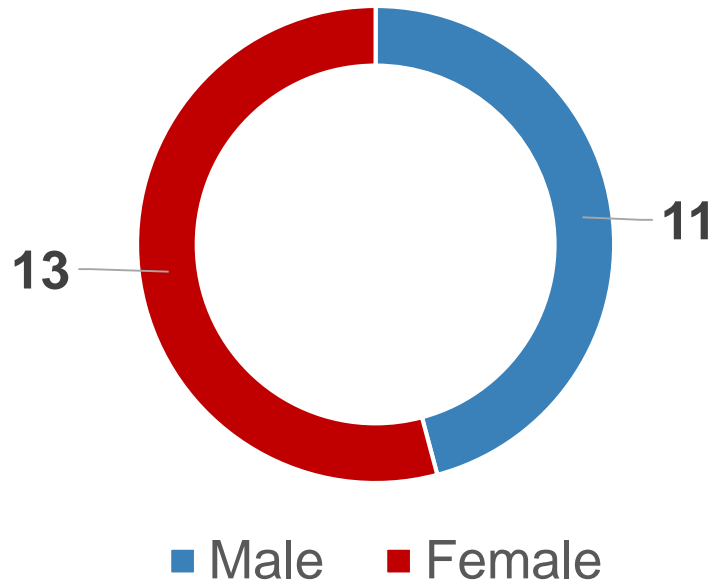
RESEARCH METHOD

- ◆ 24 semi-structured **interviews** between Jan. and Feb. 2018.
- ◆ Recruitment
 - ◆ Social media and email lists.
 - ◆ **Screening** survey for diverse demographics.

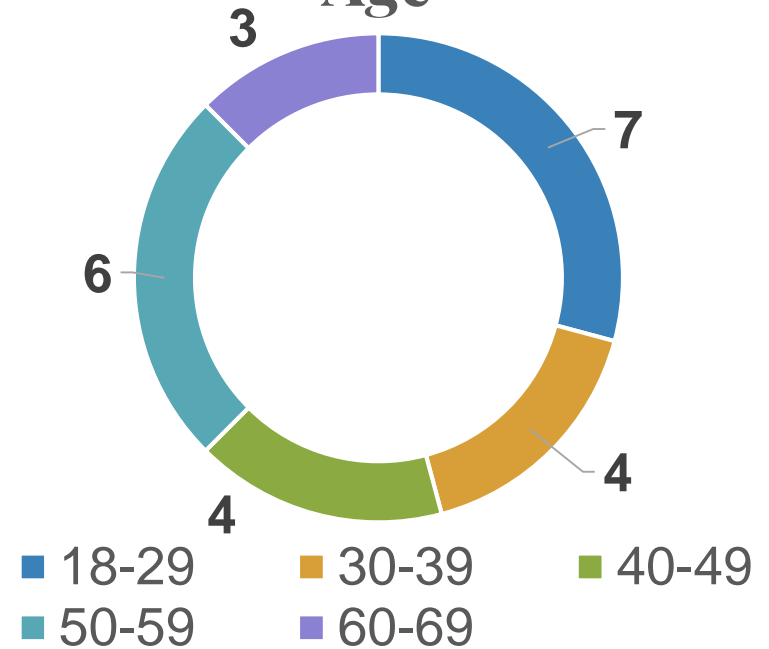


PARTICIPANT DEMOGRAPHICS

Gender



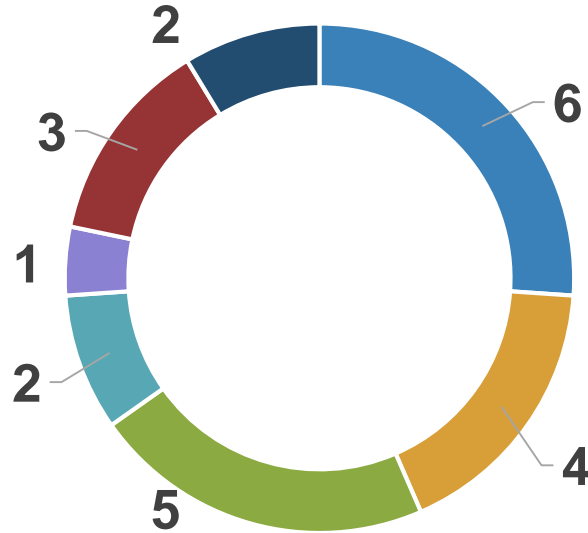
Age





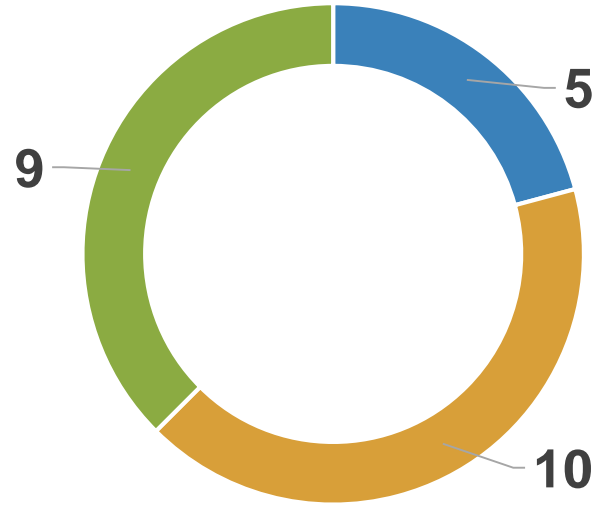
PARTICIPANT DEMOGRAPHICS

Income



- <25k
- 25-50k
- 50-75k
- 75-100k
- 100-125k
- 125-150k
- >150k

Education



- No college
- Bachelor
- Graduate



PARTICIPANT DEMOGRAPHICS

- ◆ Exit survey
 - ◆ NFEC **financial decision** test.
 - ◆ CFPB **financial well-being** scale.



PARTICIPANT DEMOGRAPHICS

- ◆ Exit survey
 - ◆ NFEC **financial decision** test.
 - ◆ CFPB **financial well-being** scale.
- ◆ Results
 - ◆ Medium level of self-assurance regarding financial situations.
 - ◆ Good knowledge of entry-level financial decisions.



KEY FINDINGS

Mental Model

Risk Perception

Protective Action



KEY FINDINGS

Mental Model

- ◆ **Most aware** of big bureaus and their function.

Risk Perception

Protective Action



KEY FINDINGS

Mental Model

- ◆ **Incomplete and inaccurate** understanding of:
 - ◆ Types of info collected.
 - ◆ Information providers.
 - ◆ Customers.

Risk Perception

Protective Action

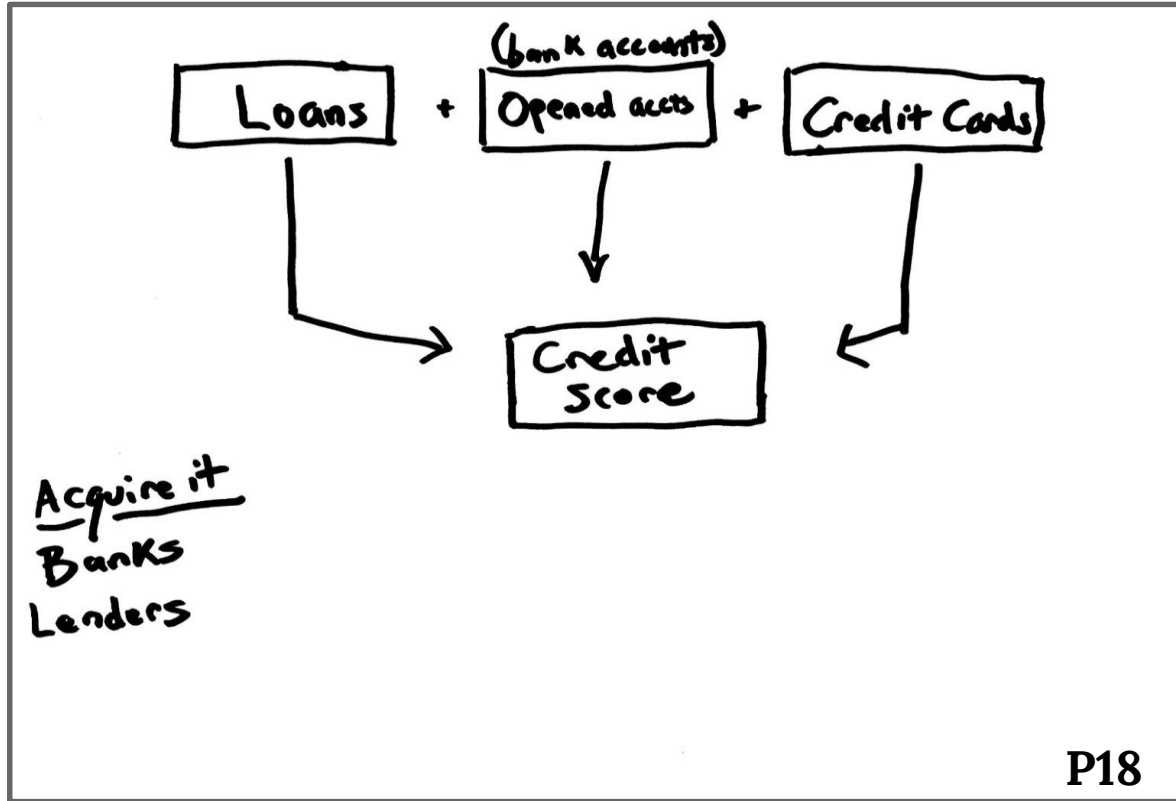


Fig 1. An example of **incomplete** mental models

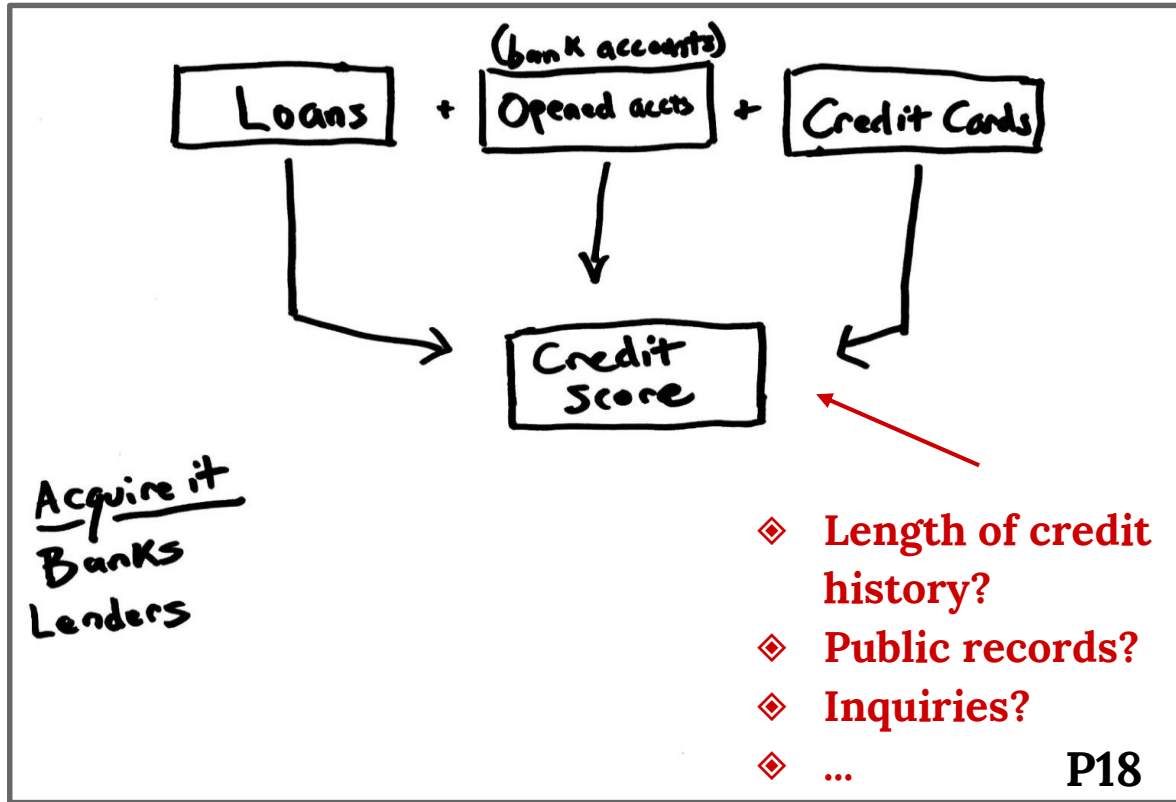


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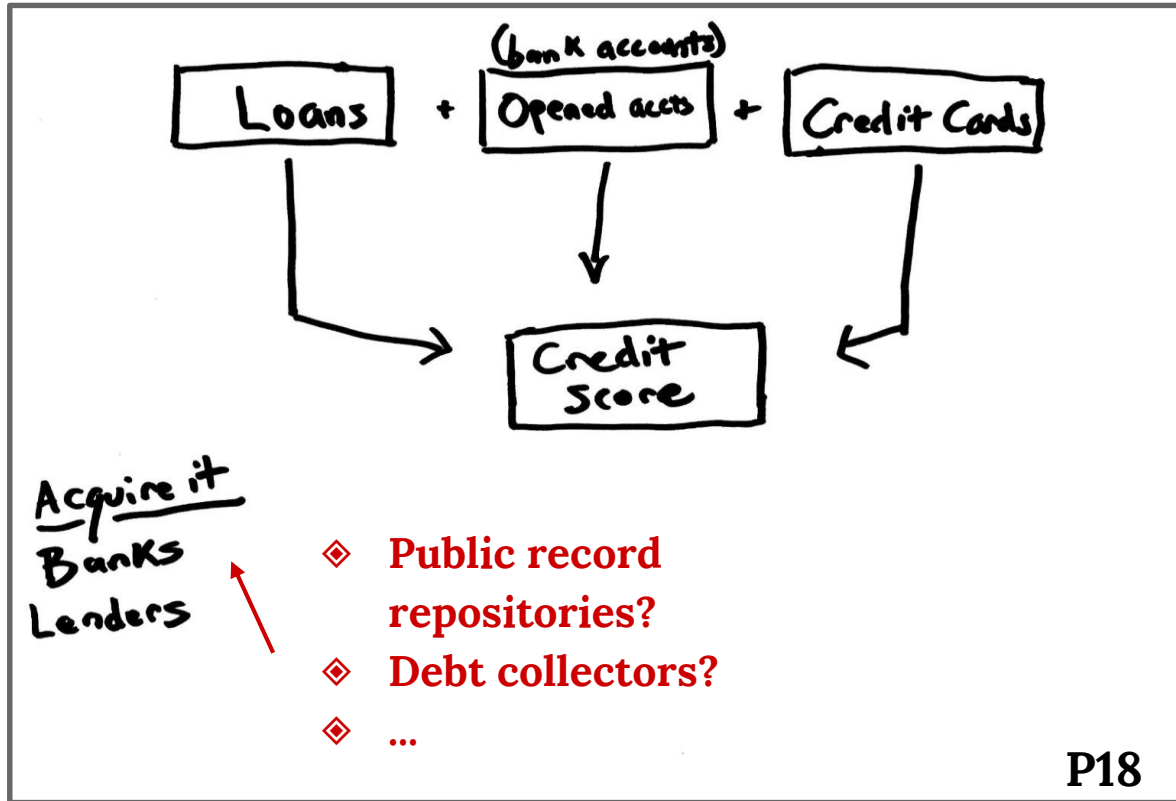


Fig 1. An example of **incomplete** mental models



P9

Address -
Employer - their SALARY
RELATIVES - COUSINS, AUNTS, ETC
COVERT 'SPYING' - Hire A DETECTIVE
FACEBOOK - their HOBBY, TRAVEL,
their BANKS OF C. UNIONS
TYPE OF CAR they DRIVE
APPEARANCE OF PERSON - clothes,
IRS - their TAX RETURNS^{ETC.}

CITY HALL, MAYOR'S OFFICE
CHAMBER OF COMMERCE

P9

Fig 2. An example of **inaccurate** mental models



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CITY HALL, MAYOR'S OFFICE
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Fig 2. An example of **inaccurate** mental models



KEY FINDINGS

Mental Model

- ◆ Most aware of big bureaus and their function.
- ◆ Incomplete and inaccurate understanding.

Risk Perception

- ◆ **Most aware** of the breach.

Protective Action



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Risk Perception

- ◆ **Most aware** of the breach.
- ◆ **Identity theft** and **privacy invasion**.
- ◆ **Optimism bias**.

Protective Action



REASONS FOR OPTIMISM BIAS

- ◆ The “I’ve got nothing to lose” fallacy.

“

*I don't have any credit. I have a bad record so I wouldn't do that [check Equifax's website to see if affected]. **Nobody can hurt me. It's already at the lowest place.** (P5)*



REASONS FOR OPTIMISM BIAS

- ◆ The “I’ve got nothing to lose” fallacy.
- ◆ **Vagueness** in notification message.



2017 Cybersecurity Incident & Important Consumer Information

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Important Update: As a result of ongoing analysis of data stolen in last year's cybersecurity incident, Equifax Inc. announced that the company has confirmed the identities of consumers whose partial driver's license information was taken. Equifax will notify these consumers by U.S. Postal mail, and will offer identity theft protection and credit file monitoring services at no cost to them. **We have included the most up-to-date information about the March 1, 2018, announcement on this website.**



Thank You

Based on the information provided, we believe that your personal information **may have been** impacted by this incident.

Click the button below to continue your enrollment in TrustedID Premier.

Enroll

For more information visit the [FAQ page](#).





REASONS FOR OPTIMISM BIAS

- ◆ The “I’ve got nothing to lose” fallacy.
- ◆ Vagueness in notification message.
- ◆ **Absence** of negative signals.



REASONS FOR OPTIMISM BIAS

- ◆ The “I’ve got nothing to lose” fallacy.
- ◆ Vagueness in notification message.
- ◆ **Absence** of negative signals.
- ◆ Presumption of **not being included** in Equifax’s database.



KEY FINDINGS

Mental Model

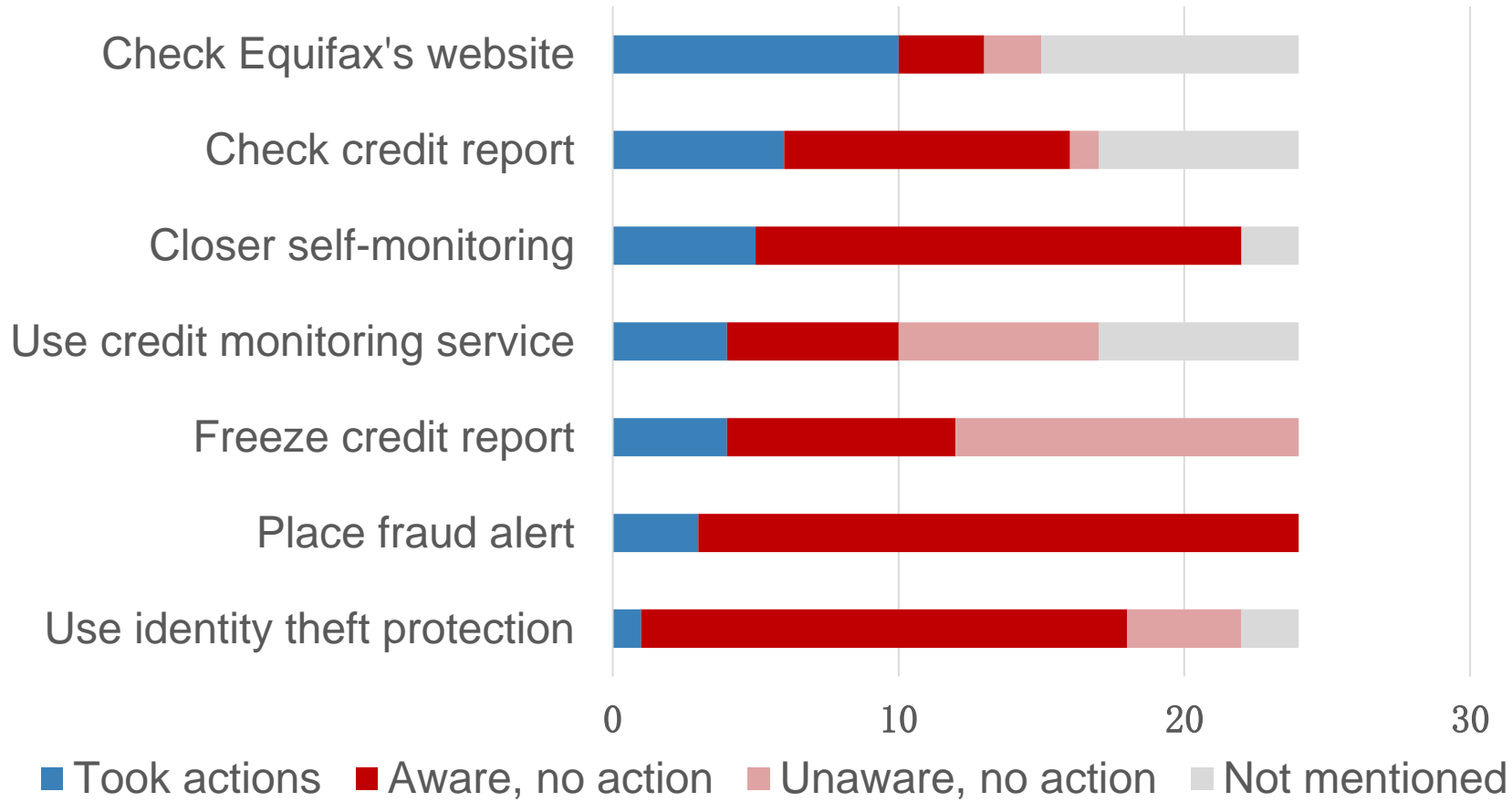
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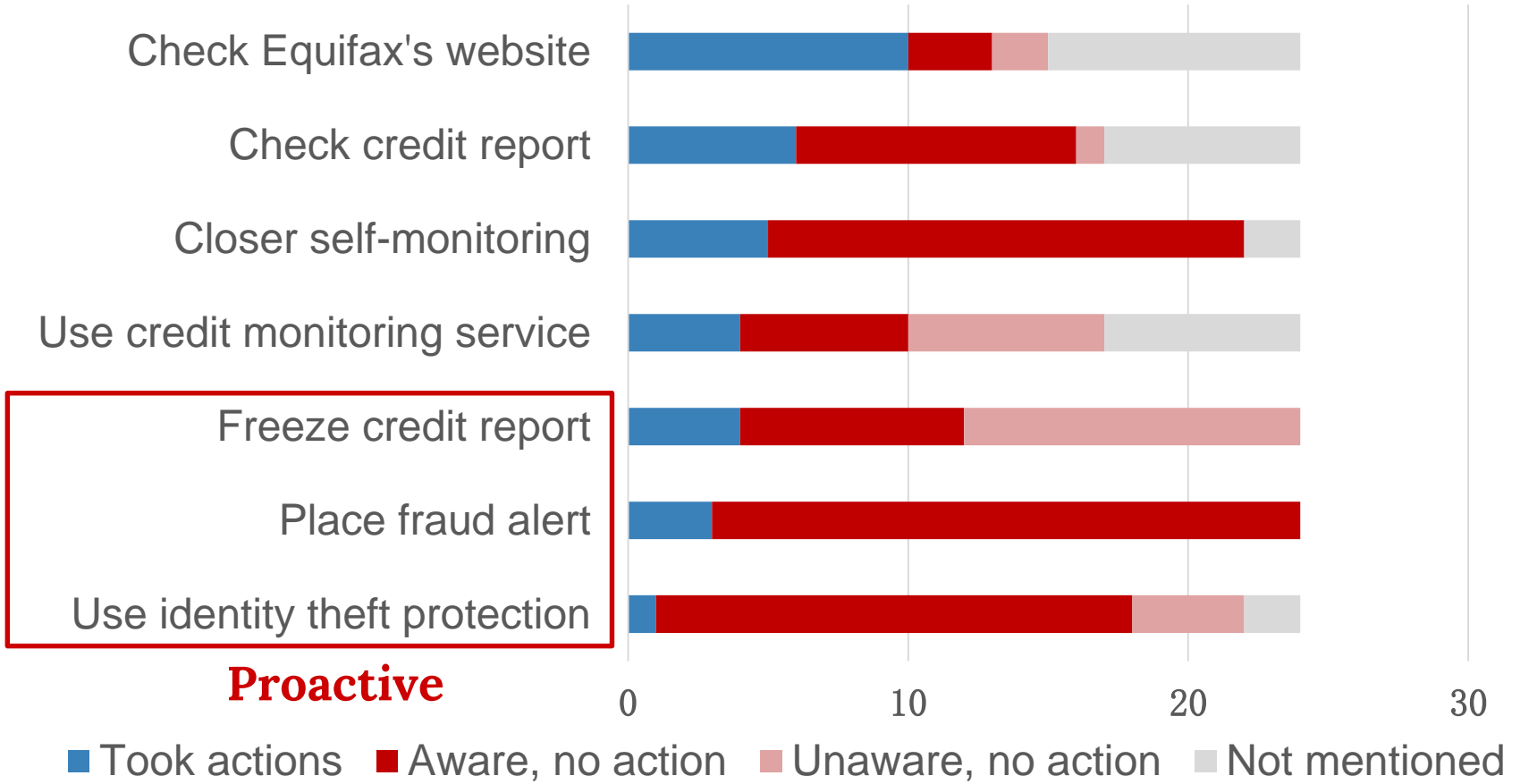
Risk Perception

- ◆ Most aware of the breach.
- ◆ Identity theft and privacy invasion.
- ◆ Optimism bias.

Protective Action

- ◆ **Most did not** take actions.
- ◆ Various **reasons** for inaction.



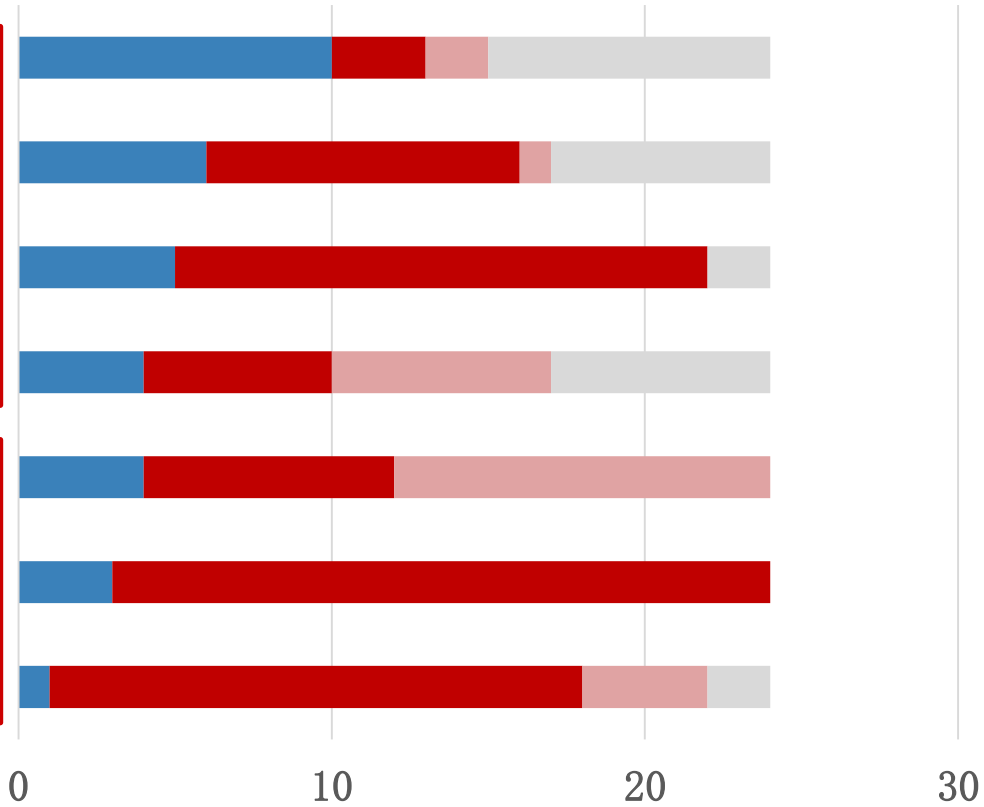


Reactive

- Check Equifax's website
- Check credit report
- Closer self-monitoring
- Use credit monitoring service

- Freeze credit report
- Place fraud alert
- Use identity theft protection

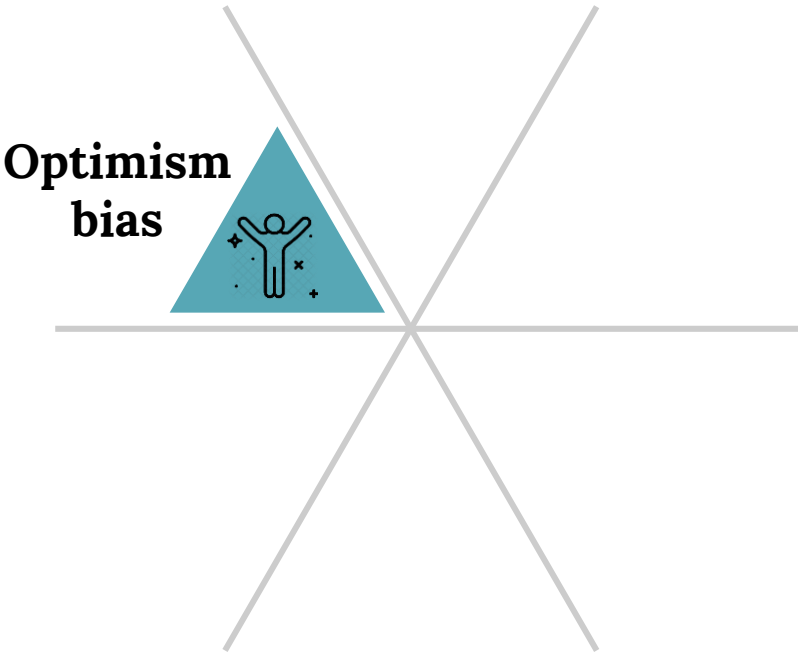
Proactive



■ Took actions ■ Aware, no action ■ Unaware, no action ■ Not mentioned

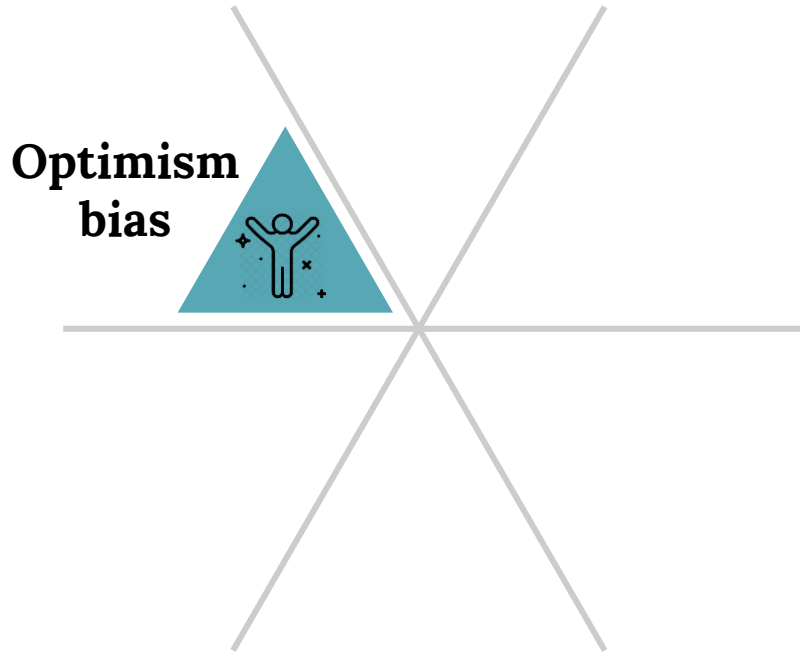


REASONS FOR INACTION





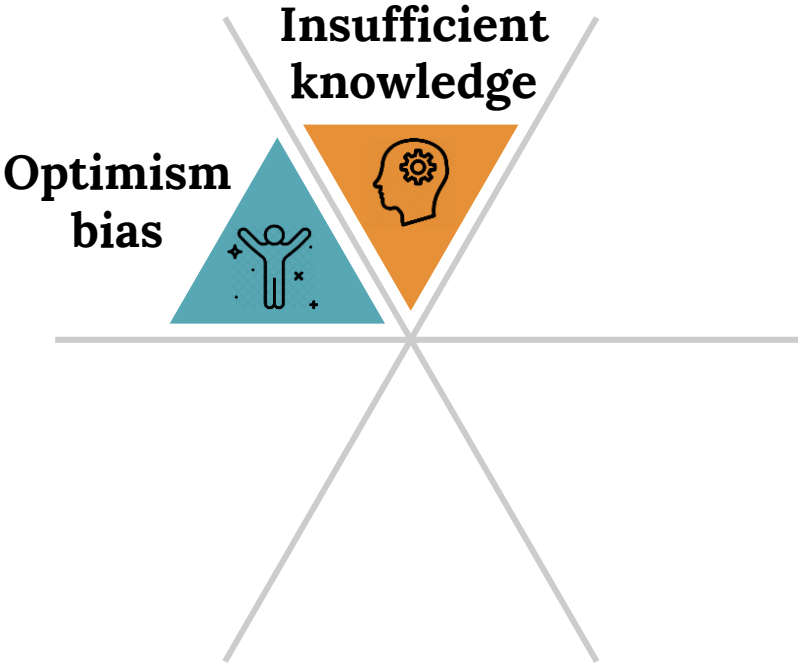
REASONS FOR INACTION



“Why would they come after me? If they’re going to go to all the bother of stealing my identity, why don’t they go after somebody with some real wealth?” (Pg)

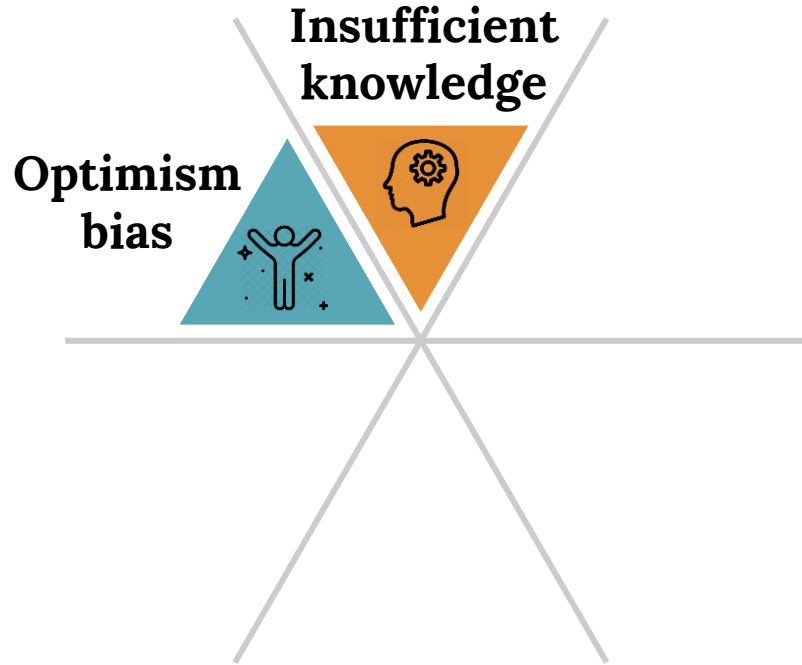


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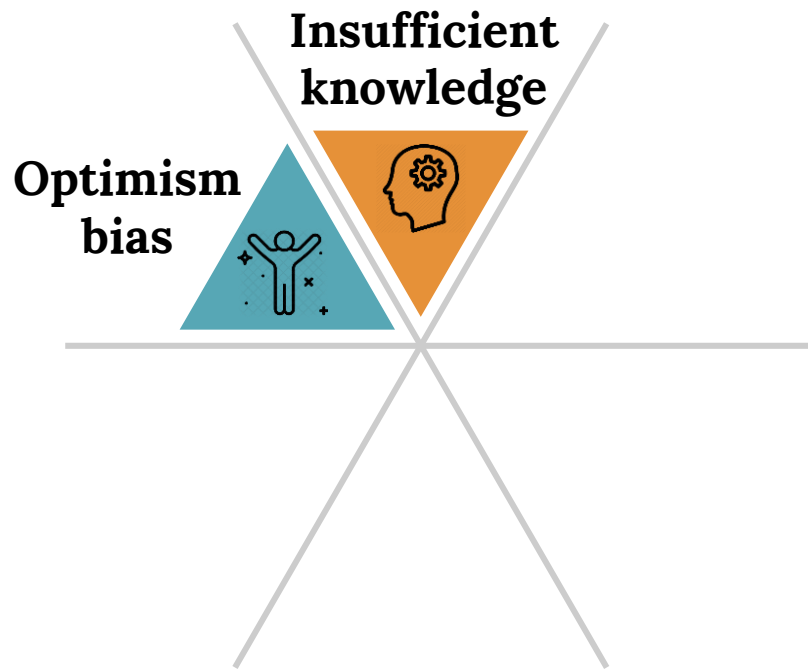


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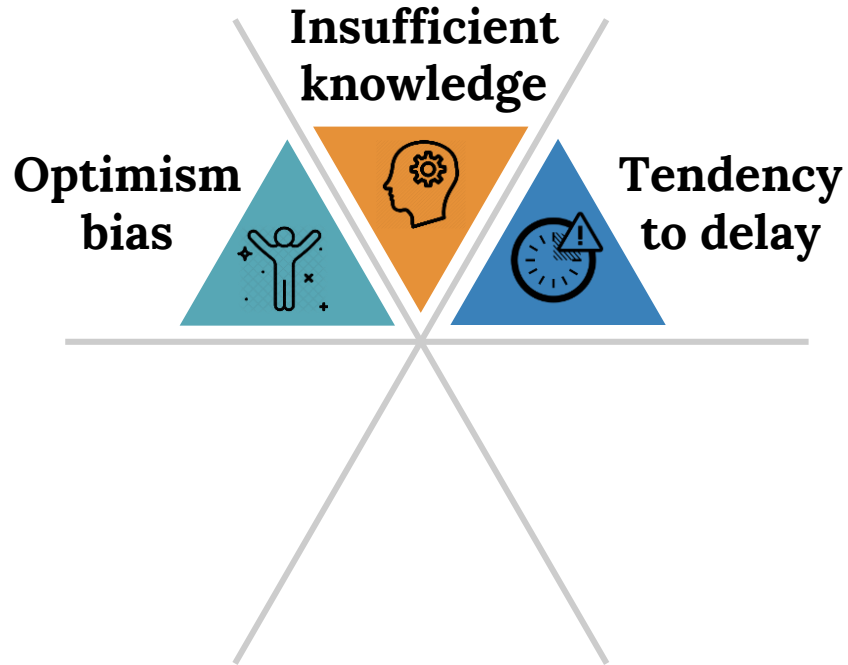


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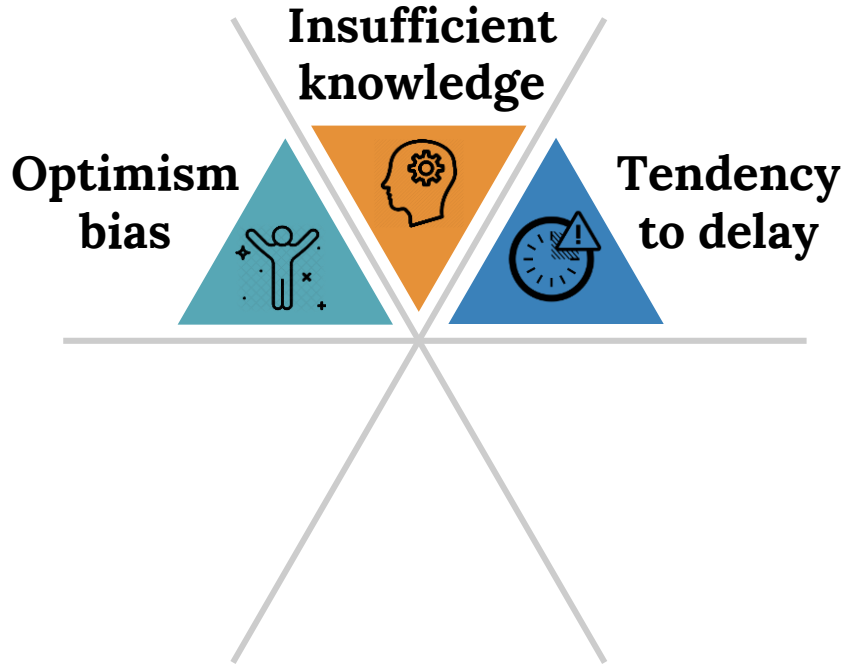


REASONS FOR INACTION





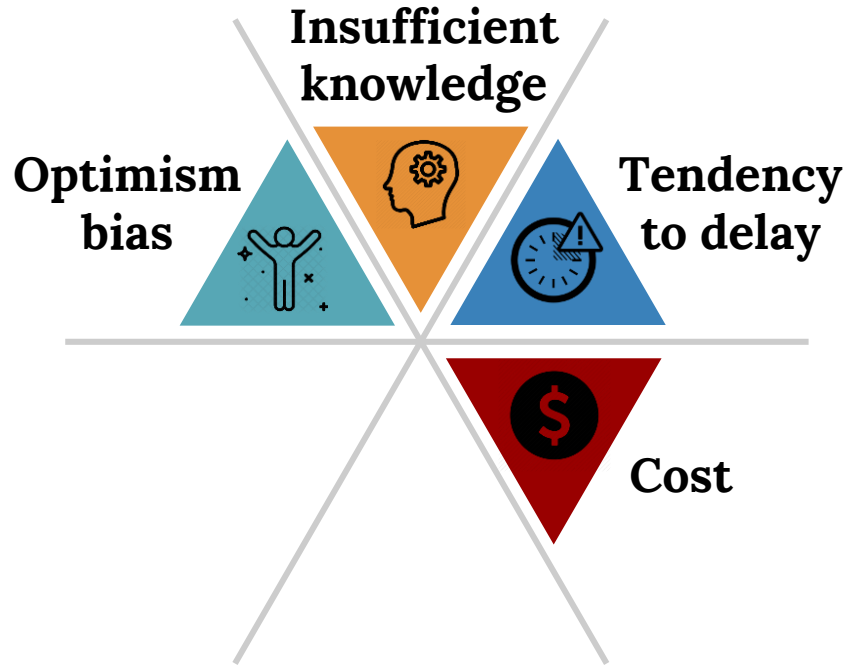
REASONS FOR INACTION



*“I wait until something bad happens and then I will react to it, so maybe it's **not as good as a proactive approach**. So far I think I'm okay with all the finance and nobody's stole my identity yet.” (P23)*

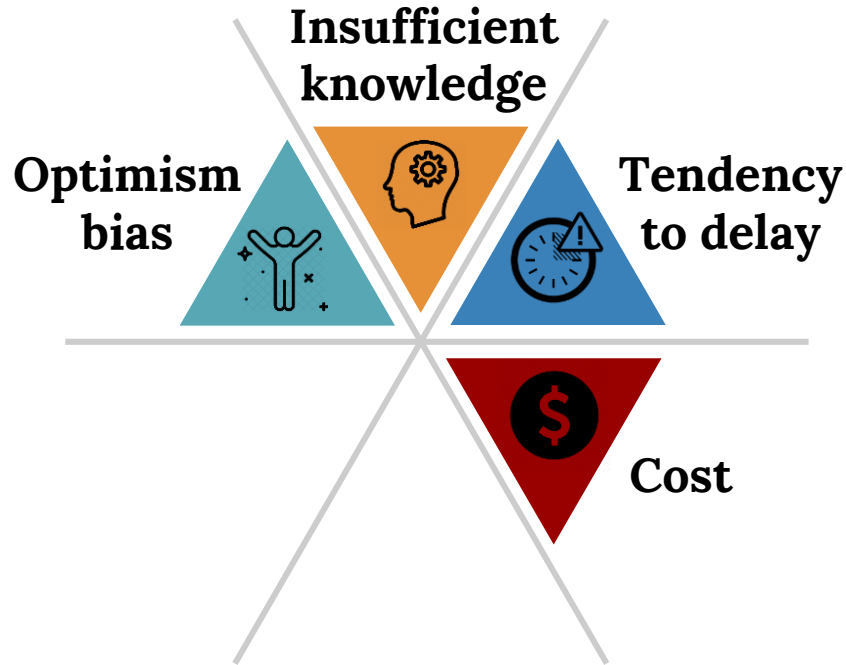


FACTORS IMPACTING ACTION/INACTION



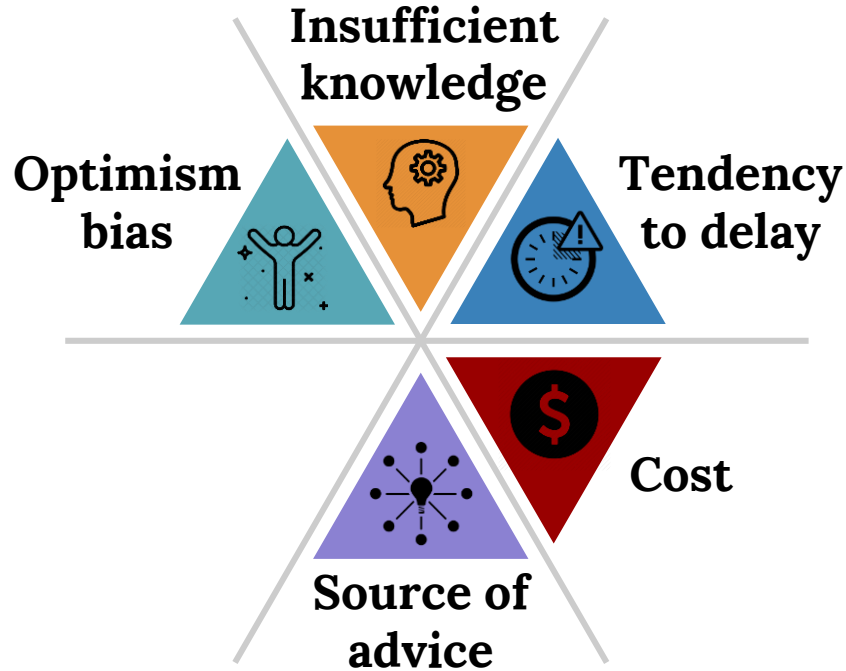


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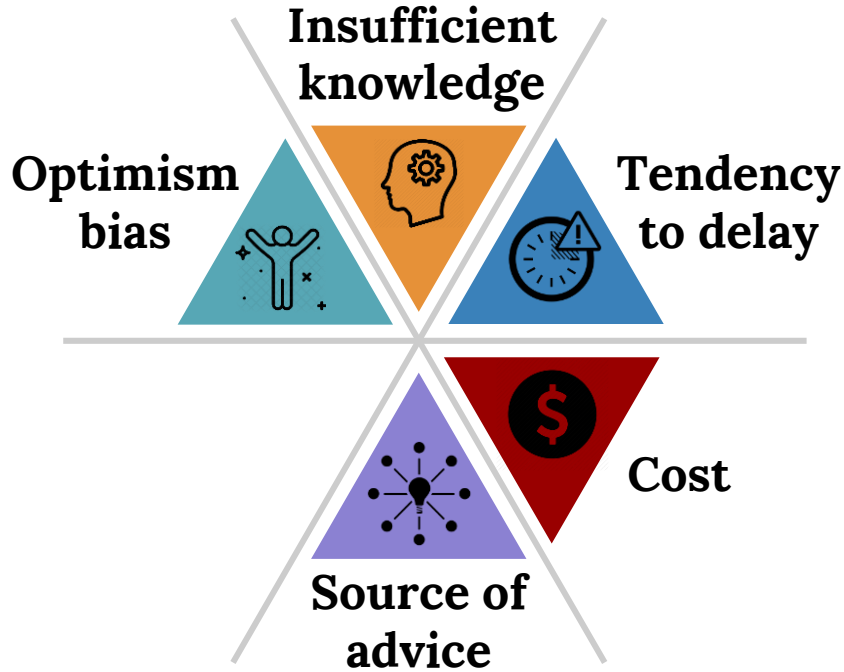


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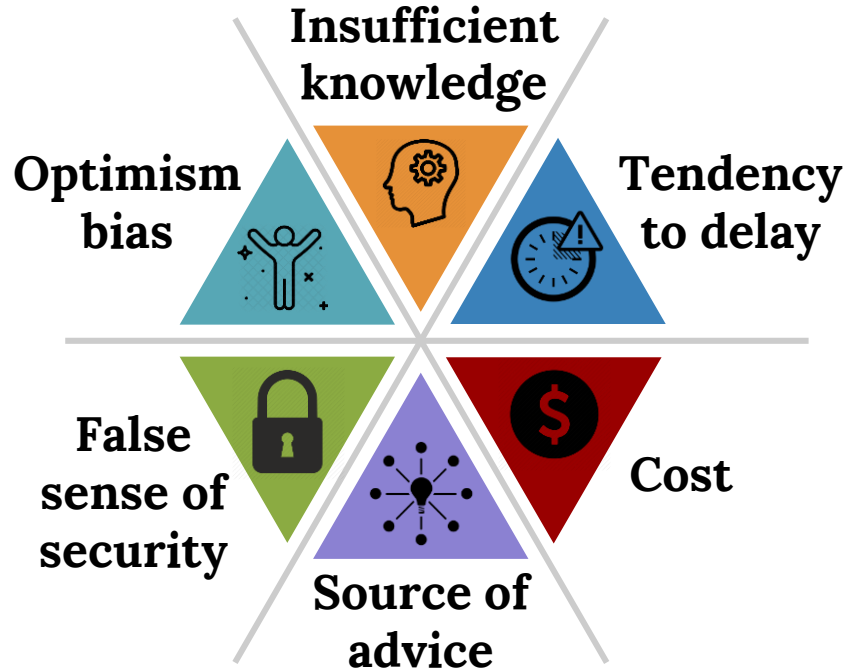


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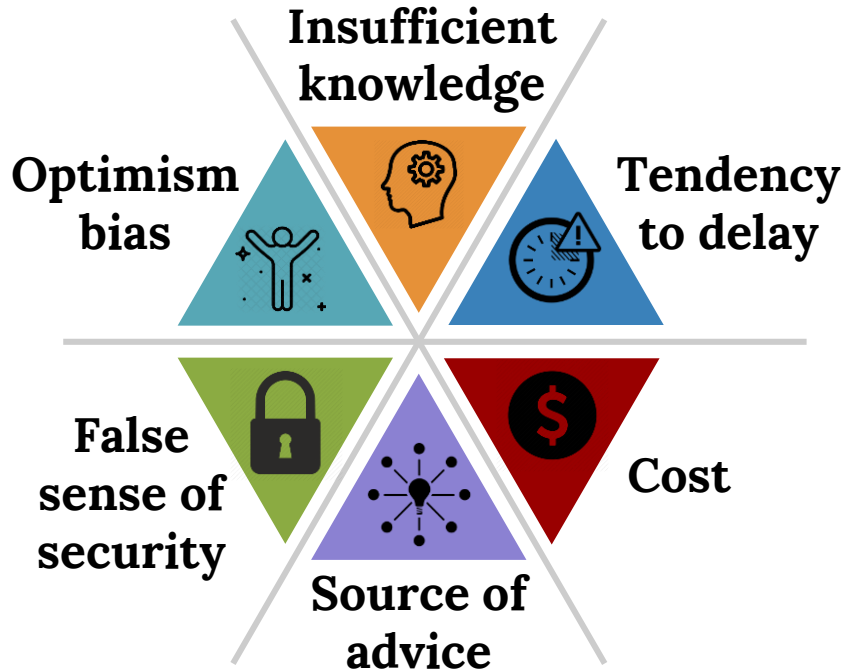


FACTORS IMPACTING ACTION/INACTION





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“The freeze might have given me a false sense of security...I haven’t spread out the frequency of my reports. I haven’t paid for reports more frequently than what I can get for free.” (P16)



IMPLICATIONS

Public Policy

Technical Solution

Educational Efforts



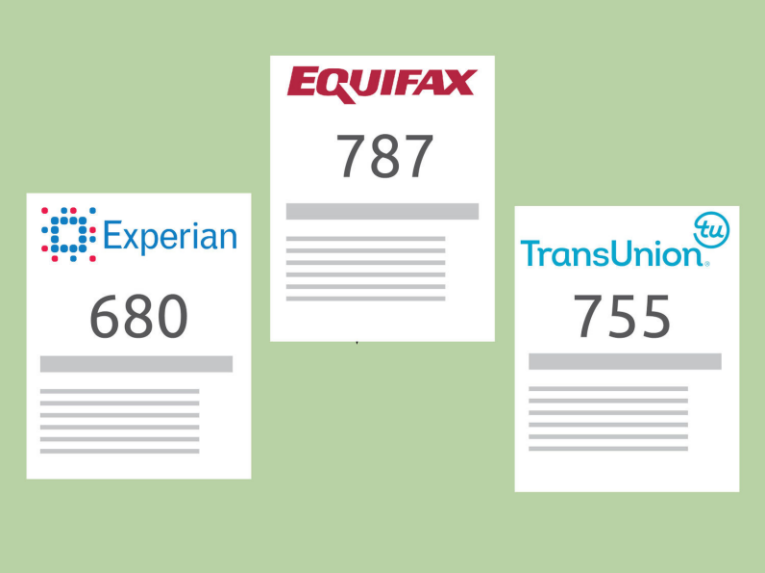
IMPLICATIONS

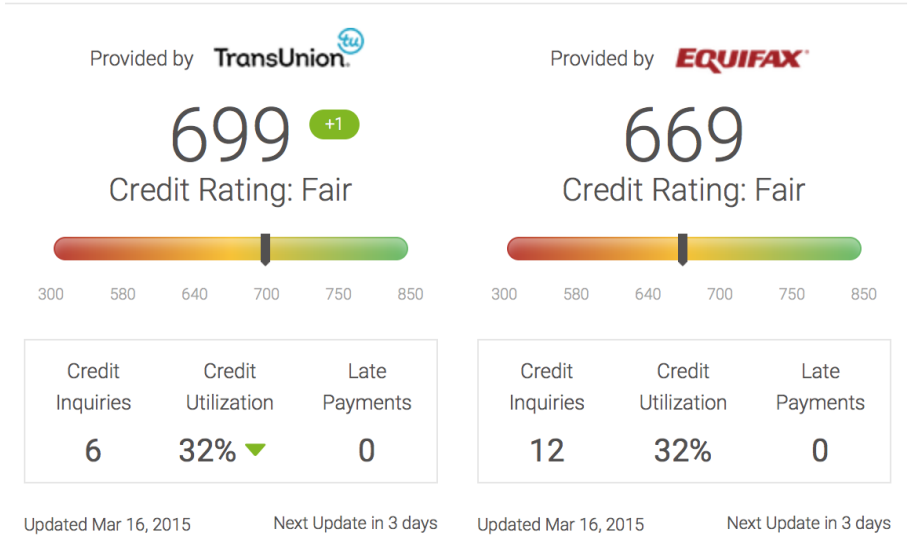
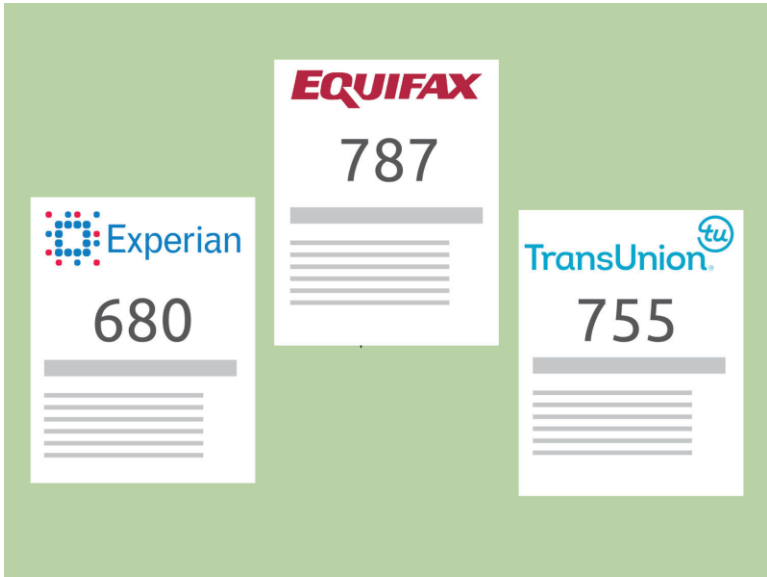
Public Policy

- ◆ **Free and more frequent** access to credit reports.

Technical Solution

Educational Efforts







IMPLICATIONS

Public Policy

- ◆ Free and more frequent access to credit reports.
- ◆ **Free credit freezes.**

Technical Solution

Educational Efforts

Economic Growth, Regulatory Relief and Consumer Protection Act



Long title	A bill to promote economic growth, provide tailored regulatory relief, and enhance consumer protections, and for other purposes.
Enacted by	the 115th United States Congress
Effective	May 24, 2018



IMPLICATIONS

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- ◆ Free and more frequent access to credit reports.
- ◆ Free credit freezes.
- ◆ **Stringent** and **preemptive** regulation.

Technical Solution

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IMPLICATIONS

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- ◆ Free credit freezes.
- ◆ Stringent and preemptive oversight.

Technical Solution

- ◆ Enhancing **usability** of protective mechanisms.

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Technical Solution

- ◆ Enhancing usability of protective mechanisms.
- ◆ Enhance **transparency** of information flows.

Educational Efforts



- ◆ Just-in-time notifications.





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- ◆ Integrate rights to approve and dispute.





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- ◆ Aiming educational resources at **influencers**.



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Educational Efforts

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- ◆ Better support **interpersonal sources**.



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