

Take-up of Financial Education: Demographic Characteristics and Prior Knowledge

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Motivation

- Consumer financial decisions can be complicated
 - Getting a mortgage is one of the most substantial financial commitments a consumer makes
- Many policymakers support helping consumers through financial education
- But: Who uses educational materials?
 - What are their demographic characteristics?
 - Are they already knowledgeable?

Correlates of take-up

- Relatively little work on correlates of take-up, as many papers use data solely from participants
- Some literature on who uses investment advice
 - Generally positive correlations between take-up and income, educational attainment (Bucher-Koenen & Koenen, 2012; Kramer, 2016; Lin and Lee, 2004; Scholl et al., 2018)

Prior Knowledge and Take-Up

- Substantial psych/marketing literature on the role of prior knowledge in search
- Types of knowledge:
 - Objective – what individuals *actually* know
 - Subjective – what individuals *perceive* they know
 - Product experience – e.g., prior purchases
- Unfortunately, mixed findings

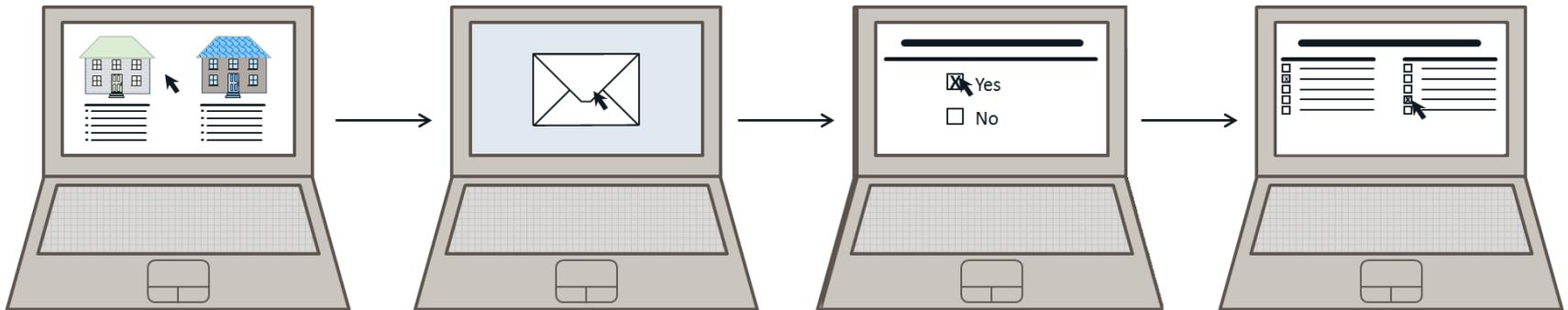
Literature on Prior Knowledge

	Positive	Negative	Inverted U	No relationship
Objective	<p>Brucks 1985</p> <p>Mishra & Kumar 2011</p> <p>Calcagno & Monticone 2015</p> <p>Ward & Lynch 2018</p>	<p>Meier & Sprenger 2013</p> <p>Miyake & Norman 1979</p>	<p>Raju et al. 1995</p>	<p>Kramer 2016</p>
Subjective	<p>Kiel & Layton 1981</p> <p>Lin & Lee 2004</p> <p>Loibl & Hira 2009</p> <p>Mishra & Kumar 2011</p>	<p>Brucks 1985</p> <p>Duncan & Olshavsky 1982</p> <p>Locander & Hermann 1979</p> <p>Radecki & Jaccard 1995</p>	<p>Klein & Ford 2003</p>	<p>Urbany et al. 1989</p>
Proxy	<p>Klein & Ford 2003</p> <p>Meier & Sprenger 2013</p>	<p>Kiel & Layton 1981</p> <p>Srinivasan & Ratchford 1991</p>	<p>Bettman & Park 1980</p> <p>Moorthy et al. 1997</p> <p>Rao & Sieben 1992</p>	<p>Rao & Monroe 1988</p>

Research Questions

- How are (1) demographic characteristics and (2) prior knowledge associated with use of an online financial education tool?
 - Examine both the decision to take-up the tool and the intensity of use (time)
- Do survey measures of use show the same relationships as clickstream data?
- Note: Correlational analyses

Study Background



Emails to 5.2M

99k responses,
23k eligible

19k complete
first survey

6k encouraged
to go to website

- Demographics of sample match profile of 2015 new mortgages (National Survey of Mortgage Originations)

Encouragement Design

- Subset encouraged to visit online educational resources in survey and follow-up emails
- Track use
- Follow-up surveys at two week intervals

Hello,

You successfully submitted your first survey! Thank you – we really appreciate your participation. In about two weeks, we'll contact you again to see how things are going.

In the meantime, check out the Consumer Financial Protection Bureau's free "[Owning a Home](#)" [tools](#). They'll help you navigate the home buying process, ask the right questions, and choose a mortgage that's right for you.

What mortgage rates can you expect? How do you know if a mortgage offer is a good deal? The Owning a Home tools will help you answer these questions and more.

The CFPB is a government agency with one purpose – to look out for consumers in the financial marketplace. We have nothing to sell, and we put your interests first. The tools are free, easy to use, customized to your situation, and can save you time and money. [Check out Owning a Home now.](#)

Thank you,

Dustin Beckett
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Owning a Home

Tools and resources to educate and empower consumers when shopping for a mortgage.

- Overall Process
- Explore Interest Rates
- Understand Loan Options
- Loan Estimate and Closing Disclosure Explainers
- Closing Resources: Closing Checklist and Guide to Closing Documents
- Note: Site has been revised so results may not reflect current tool.

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We're here to help you with buying and financing your home. Learn what to expect and what questions to ask, and get tools and resources to help you make decisions.

Know the process

Buying a home is exciting, but the process can feel overwhelming at times. Our guide lets you know what to expect and what to do next. Our tools and resources will help you every step of the way.



Prepare to shop

Not sure how to get started, how much you can afford, or what to expect when buying and financing a home? Set yourself up for success with a little bit of preparation.

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Explore loan choices

You've got a pretty good idea of your priorities and budget, and you're ready to start home shopping in earnest. Now is the time to start exploring loan choices and meeting with lenders.

[Learn more >](#)



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You've made an offer on a home. Congratulations! Now is the time to get official loan offers from lenders, compare your options, and choose the loan offer that's right for you.

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Get ready to close

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- [Explore interest rates](#)
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DOWNLOADABLE RESOURCES

- [Your home loan toolkit: a step-by-step guide](#)
- [Su conjunto de herramientas para préstamos hipotecarios: guía paso a paso](#)

Subjective Knowledge

- “What individuals perceive that they know” (Brucks, 1985)
- 12-point scale increasing in confidence (M=5.9, SD=3.0)
 - $\alpha = .82$
- Ex: How confident are you that you can tell when a mortgage offer is a bad deal?
 - Ans: Not at all confident (21%); Somewhat confident (55%); Very confident (24%).

Objective Knowledge

- Information “actually stored in memory” (Brucks 1985)
- 12-point scale increasing in mortgage knowledge and financial literacy (M=6.5, SD = 2.9)
- Ex: Which of these is most likely to happen if a borrower cannot make a 20% down payment?
 - Answer: The borrower will have to pay for mortgage insurance
 - 67% correct, 16% incorrect, 16% don't know

Experience

- We also capture if participants have bought a home before, and if so, how recently
- 57% are prior homebuyers
- Correlations:
 - Experience and objective knowledge: 0.39
 - Experience and subjective knowledge: 0.30
 - Subjective and objective knowledge: 0.40

Additional Demographics

- Age (18-29, 30-39, 40-49, 50+)
- Race/ethnicity
- Educational attainment
- Annual household income (< \$35k, \$35-50, ... \$175k+)
- Employment status
- Parental status
- Marital status
- Self-reported credit score
- Use of a real estate agent

Usage Data

Clickstream

- Worked with website analytics team to measure use
- 36.7% of participants visited the site in the first two weeks
- Of those who went, mean duration was 10.9 minutes (SD=19.2 minutes)

Survey

- 5.8% report using CFPB mortgage resources in the first follow-up survey

Survey vs. clickstream data

- Few people reported going, but those who did report were fairly accurate.

		Take-Up in Website Clickstream Data	
Two Weeks after Enrollment	N	Used website	Did not use website
Reported use in survey	267	194 (72.7% correct reports)	73
Did not report use	4297	1535	2761 (64.3% correct reports)
		1729	2834

Demographic characteristics and take- up

Binary take-up: Demographics

- Logistic regression using demographic characteristics to predict likelihood of using site in first two weeks
- Not significant:
 - Other race/ethnicity
 - Education
 - Employment
 - Income (inconsistent)
 - Marital status
 - Parental status
 - Use of real estate agent

	Clickstream (Odds ratio)
Age (vs. 18-29)	
30-39	1.37***
40-49	1.49***
50+	2.08***
Asian	1.53***
Superprime (vs. sub)	1.17*
Experience	
before 1999	0.71***
2000-2004	0.63***
2005-2007	0.68***
2008 or later	0.51***
N	6227

If odds ratio <1, less likely; if >1, more likely

Intensity of use: Demographics

- OLS regression to predict time on website in first two weeks.
 - Usage during entire survey shows pattern with age

	Clickstream (seconds)
Age (vs. 18-29)	
30-39	-40.9
40-49	-159.7
50+	-325.6***
Other (race/ethnicity)	-238.5*
N	2284

Prior knowledge and take-up

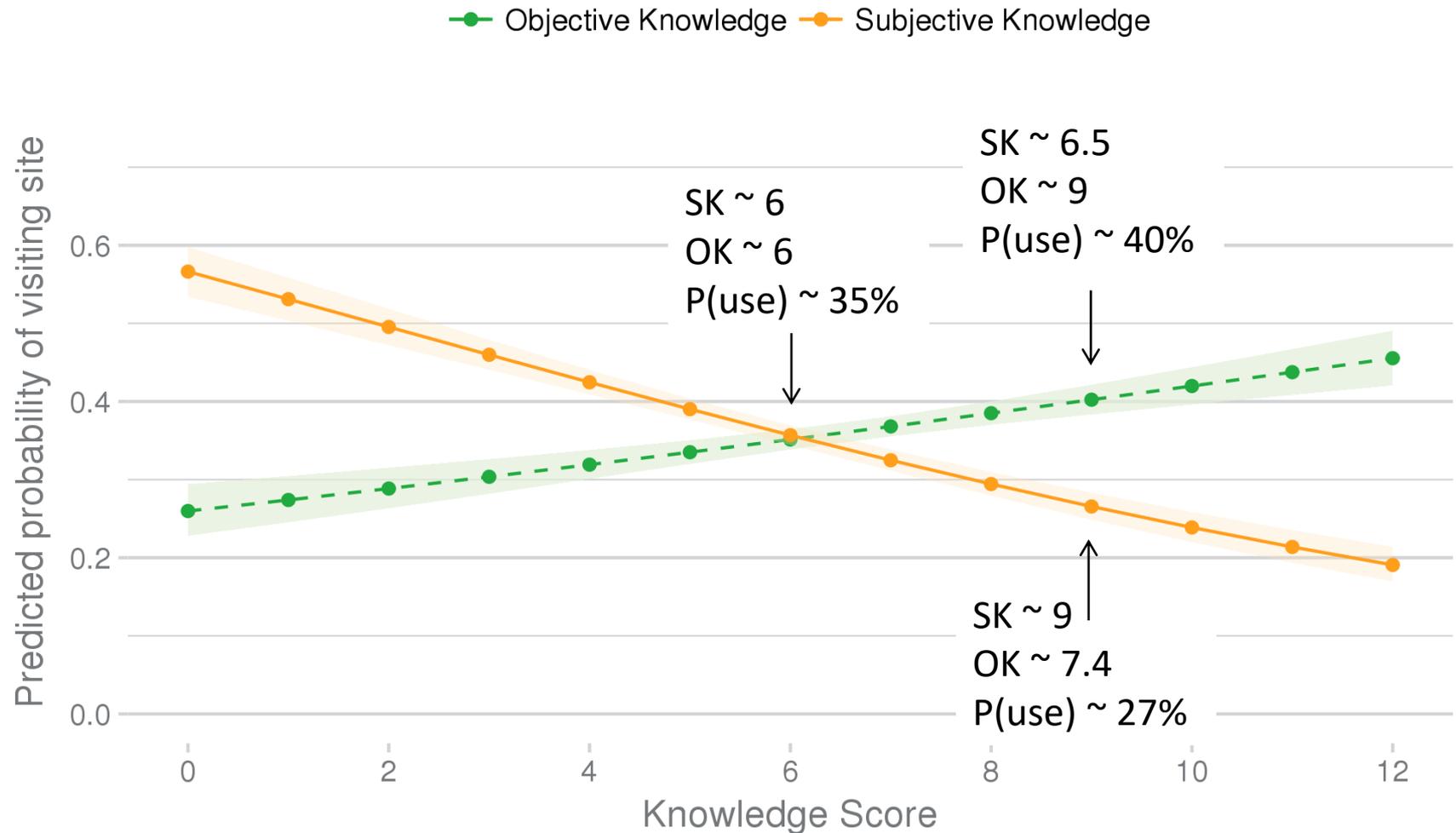
Binary take-up: Prior Knowledge

- Logistic regression using demographic characteristics + prior knowledge to predict likelihood of using site
- Robustness tests for entire survey use
 - Additional regressions to test for u-shape and interactions

	Clickstream (Odds ratio)	Self-report (Odds ratio)
Obj. Knowledge	1.09***	1.14***
Subj. Knowledge	0.87***	0.94*
Experience		
before 1999	0.74***	0.56*
2000-2004	0.63***	0.54*
2005-2007	0.68***	0.63*
2008 or later	0.51***	0.42***
Demographics	Yes	Yes
N	6175	4501

If odds ratio <1, less likely; if >1, more likely

Take-up at different levels

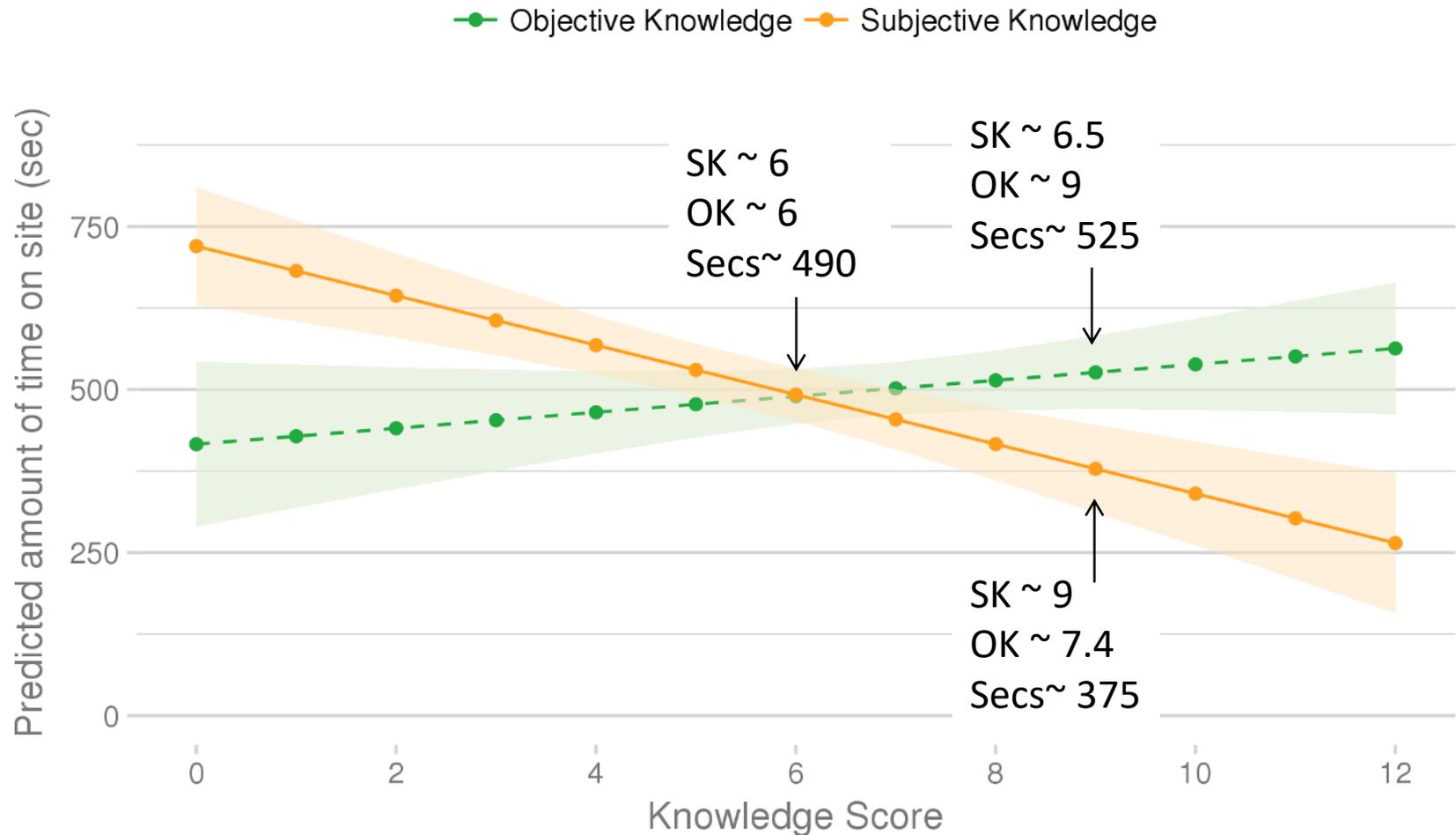


Intensity of use: Prior Knowledge

- OLS regression to predict time on website in first two weeks.
 - Usage during entire survey shows Objective B = 52.3** and Subjective B = -49.4**
- Additional regressions to test for u-shape and interactions

	Clickstream (seconds)
Obj. Knowledge	16.9
Subj. Knowledge	-35.2***
Experience	
before 1999	13.4
2000-2004	-103.8
2005-2007	-91.9
2008 or later	-117.7
Demographics	Yes
N	2269

Intensity of use at different levels



Results and Implications

- Analysis using surveys shows similar results to clickstream data
 - Helps validate use of survey reports as proxies for search
- Difficult to predict take-up from demographics, raising questions about efficient marketing

Results and Implications

- Prior knowledge is related to take-up
 - Objective knowledge correlates positively
 - Subjective knowledge correlates negatively
 - Homebuying experience correlates negatively
- Can policymakers access prior knowledge?
- *If* causal, results suggest potential interventions for marketing financial education (“You might be surprised to learn that...”)

Thank you