The Impact of Mortgage Broker Use on Borrower Confusion and Preferences

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THE UNIVERSITY OF SYDNEY

cepar ARC CENTRE OF EXCELLENCE IN POPULATION AGEING RESEARCH

Home loans are important; the market is complex.

Many alternatives:

- Aust: 4000+ loans from 140 lenders
- US: 4300 financial institutions originate many types of loans

Many attributes:

- Variable rates, fixed rates, interest only, principal and interest, equity redraw, ancillary features etc.

46% of borrowers are "not confident" in mortgage choice (ACCC 2020).

Borrowers go to mortgage brokers. Do they help?

– New mortgages from brokers: 65% Australia; 71% UK; 33% in US.

Brokers can help with:
– Search
– Process
– Marginal borrowers
– Education (maybe)

– Brokers recommend
  – more expensive, high fee products (LaCour-Little 2009; Woodward and Hall 2012; Robles-Garcia 2020 Ambrose 2021)
  – larger, longer, more levered loans (ASIC 2017)
– Unclear and conflicted remuneration (Deloitte 2016, ASIC 2017, 2019, FSRC 2020)
– Linked to higher default rates (Alexander et al. 2002; Elul et al. 2010, Jiang et al. 2014)

Borrower incentives and broker incentives: Aligned?

Borrower expectations:

- Want a 'good deal'
  - Low interest rates and fees
  - Broker does 'shopping'
- Expertise
- Know market
- Paid by lenders
- 'Best interests' duty

Broker Incentives:

- Fees: Lender=>Aggregator=>Broker
- Two-part fee:
1. Value-based fee at loan agreement: 0.6-0.7%
2. Trail commission of 0.18-0.19% of ongoing balance
- Aggregator takes 'haircut'
- 'Best interests' duty

Research Questions

Q1: Which common mortgage attributes do borrowers find confusing? Important?

Q2: How does confusion about attributes relate to brokers? Do brokers **educate** clients?

Q3: How is confusion and broker-use related to borrowers' willingness to pay for common mortgage attributes?

Survey 1: Measure relative attribute confusion and importance; choice task for estimation of preferences.
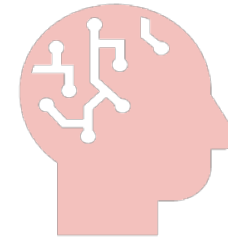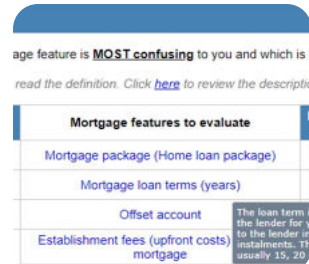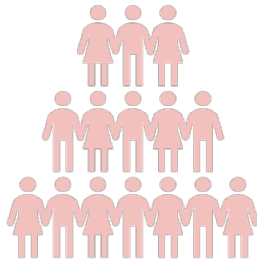
Online Sample:	Task 1 - Confusion	Task 2 – Valuation	Analysis
1,881 mortgage borrowers (past, current or future intended)	Learn about 13 common mortgage attributes	Discrete mortgage choices from 4 sets	Mixed logit estimated on DCE responses
25-65 yrs old	Choose most and least confusing/important	3 options with 7 attributes	
Household income >$45K p.a.	Compute scaled most-least scores	Choose most and least appealing mortgage	
Fielded 2019 in Australia	Identify broker effects		

Survey 2: Collect absolute ratings of attribute confusion/ importance, and conduct choice task for attribute valuation.

Online Sample:

1,200 mortgage borrowers (past, current or future intended)

25-65 yrs old

Household income >$45K p.a.

Fielded 2023 in Australia

Task 1 - Confusion

Learn about 13 common mortgage attributes

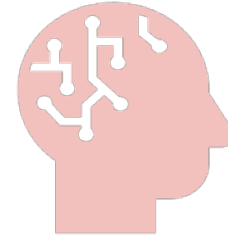Choose rate them as 'not', 'somewhat' or 'very' confusing / important
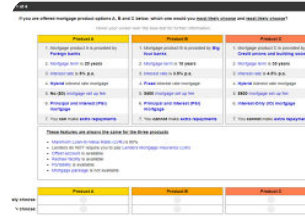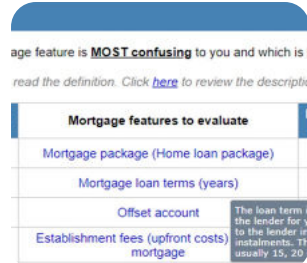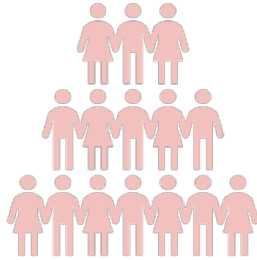
Identify broker effects

Task 2 – Valuation

Discrete mortgage choices from 8 sets

3 options with 7 attributes

Choose most and least appealing mortgage

Analysis

Mixed logit

Estimate in willingness-to-pay space

Interest points are numeraire

Causal mediation analysis with single IV

Findings: Consulting brokers impacts borrowers' perceptions and valuations of attributes.

- Borrowers assign **less importance** to relatively **more confusing** mortgage attributes => mis-perceptions?

- Broker use causes **higher** attribute confusion => **less client education**

- Broker-users are willing to pay more for attributes that raise the duration of loans, and therefore broker commissions

Survey 1: Mortgage attribute *relative* confusion and importance

Subjects ranked mortgage attributes by confusion and importance.

Set 1 of 13 - Confusion

Please tell us which mortgage feature is **MOST confusing** to you and which is **LEAST confusing** to you.

Hover your cursor over the mortgage features to read the definition. Click [here](#) to review the description of all mortgage features (a new tab will open).

Most confusing to me:	Mortgage features to evaluate	Least confusing to me:
◯	Mortgage package (Home loan package)	◯
◯	Mortgage loan terms (years)	◯
◯	Offset account	
◯	Establishment fees (upfront costs) mortgage	

> The loan term is the period of time specified by the lender for you to repay the amount owed to the lender including interest, usually in set instalments. The length of a home loan is usually 15, 20 or 30 years.

The most confusing attributes are rated as less important.

Comparison of Average B-W scores (Confusion and Importance)

■ Average B-W score: Confusion   ☐ Average B-W score: Importance

Mortgage Attribute (vertical axis)

Attribute	Confusion	Importance
Maximum Loan-to-Value Ratio (LVR)	0,442	-0,202
Compulsory Lenders Mortgage Insurance (LMI)	0,293	-0,319
Portability	0,259	-0,360
Mortgage package	0,137	-0,023
Type of mortgage lender (major bank; other)	0,071	-0,323
Establishment fee	-0,023	0,124
Type of interest rates: Fixed, Variable and Hybrid	-0,047	0,177
Interest rate	-0,058	0,417
Repayment type: P&I mortgage and IO mortgage	-0,085	0,031
Offset account	-0,093	0,078
Redraw facility	-0,152	0,000
Loan term (years)	-0,362	0,033
Ability to make extra repayments	-0,381	0,365

Average (B-W) score (horizontal axis: -0,5 to 0,5)

— LVR, LMI most confusing; interest rates, prepayment, fees most important

Task 1: Borrowers place more importance on loan costs and less importance on relatively confusing attributes.

- **Interest rates, repayment flexibility** and **fees** are most important
  - Borrowers want a 'good deal'
- **Loan to value ratio** is most confusing
  - LVR is critical factor in mortgage stress, refinancing options, chance of foreclosure
- **Inverse relation between confusion and importance**

Do brokers educate clients about confusing attributes?

Survey 2: Mortgage attribute absolute confusion and broker effects

Broker-users are more confused than non-broker users after loan application.

Average over attributes	Objective Confusion	Subjective Confusion
All	45.8	10.6
Mortgage experience	**46.8**	**10.0**
Broker	45.1	12.5
No Broker	49.6	5.7
No mortgage experience	**40.6**	**13.7**

Results: Brokers educate clients less than loan officers.

1. Objective knowledge of attributes is:
   - Higher after taking out a mortgage;
   - Lower for broker-users.

2. Subjective confusion is:
   - Lower after taking a mortgage;
   - Higher for borrowers who consulted brokers;
   - Inversely related to the relative importance assigned to the attribute.

Controlling for selection into broker use by IV confirms a causal relation.

Task 2: Mortgage attribute valuations

# Task 2: Which mortgage would you be most (least) likely to choose?

Product A	Product B	Product C
1. Mortgage product A is provided by **Foreign banks**	1. Mortgage product B is provided by **Big four banks**	1. Mortgage product C is provided by **Credit unions and building societies**
2. Mortgage term is **20 years**	2. Mortgage term is **10 years**	2. Mortgage term is **30 years**
3. Interest rate is **5% p.a.**	3. Interest rate is **3.5% p.a.**	3. Interest rate is **4.5% p.a.**
4. **Hybrid** interest rate mortgage	4. **Fixed** interest rate mortgage	4. **Hybrid** interest rate mortgage
5. **No ($0)** mortgage set up fee	5. **$400** mortgage set up fee	5. **$800** mortgage set up fee
6. **Principal and Interest (P&I) mortgage**	6. **Principal and Interest (P&I) mortgage**	6. **Interest-Only (IO) mortgage**
7. You **can** make **extra repayments**	7. You **cannot** make **extra repayments**	7. You **cannot** make **extra repayments**

Standard mixed logit estimates show participants prefer:
major lenders; lower interest rates; variable rates; lower fees; principal and interest repayments and the ability to make extra payments.

We estimate individual-level attribute preferences in terms of interest rate points from DCE data.

1. Estimate mixed logit model estimate the willingness-to-pay (WTP) for each attribute at the **individual-attribute** level

2. Restrict the marginal utility of the interest rate to a constant (1)

3. Estimates show WTP in **interest rates points** (relevant 'price')

4. Measure impact of **broker use**, confusion, and financial literacy on preferences

5. Method is causal mediation analysis with single IV.

Brokers impact preferences directly and via confusion.
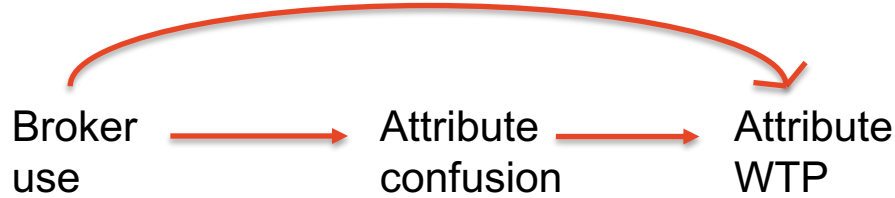
– **Three stage estimation:**

1. Total effect of broker use on attribute WTP (2SLS)

Broker use → Attribute confusion → Attribute WTP

Instrumental variable for broker selection is prevalence of broker users in participants' postcode. Use prevalence from separate survey (n=1600).

Borrowers value flexible repayments and low establishment fees. Brokers steer borrowers to longer loan duration.

Sample Average Individual WTP (measured in int. rate) and indicative impact (2SLS, n=1125)								
	-1*Interest Rate	Major Lender	Term	Fixed rate	Variable rate	Est. Fee ($000)	P&I	Extra Payment
Average WTP	/	0.136	-0.001	-0.106	0.019	-0.835	1.143	1.451
$ impact in 20 years in PV	/	$5,974	-$44	-$4,727	$841	-$39,018	$47,186	$58,800
WTP for Broker Users	/	-0.194	-0.048	0.053	-0.012	0.679**	-1.05**	-2.24***
WTP for High Financial Literacy	/	-0.05***	-0.003	-0.004	-0.001	0.006	0.25***	0.060

For the $ amount impact, we assume a 20-year $500,000 mortgage with a fixed rate of 3.5% p.a.

Brokers impact preferences directly and via confusion.

Broker use → Attribute confusion   Attribute WTP
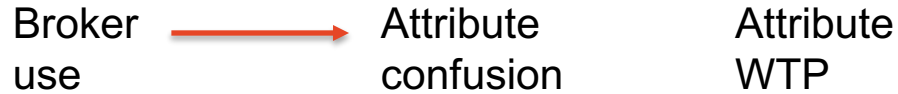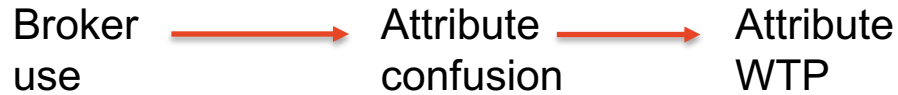
- **Three stage estimation:**
1. Total effect of broker use
2. Effect of broker use on subjective attribute confusion (2SLS)

Broker use causes higher subjective confusion; financial literacy lowers it.

Subjective confusion rating (1-3 scale) estimated impact (2SLS, n=1125)						
	Major Lender	Term	Rate type	Est. Fee ($000)	P&I	Extra Payment
Broker Users	1.54***	1.47***	1.29**	1.06**	0.78**	0.65***
High Financial Literacy	-0.18**	-0.24***	-0.22***	-0.22***	-0.24***	-0.268***

- Brokers raise subjective confusion relative to non-broker users for all attributes
- Highly financially literate people express lower confusion for all attributes

Brokers impact preferences directly and via confusion.

Broker use → Attribute confusion → Attribute WTP

- **Three stage estimation:**
1. Total effect of broker use on attribute WTP

2. Effect of broker use on subjective confusion

3. Indirect effect of broker use on attribute willingness to pay (2SLS)

Broker-use and broker-related confusion affect WTP.

Sample Average Individual WTP (measured in int. rate) and indicative impact (2SLS, n=1125)								
	-1*Interest Rate	Major Lender	Term	Fixed rate	Variable rate	Est. Fee ($000)	P&I	Extra Payment
Average WTP	/	0.136	-0.001	-0.106	0.019	-0.835	1.143	1.451
WTP confusion	/	-0.13	-0.04*	0.04	-0.01	0.63*	-1.441*	-3.61
WTP Broker Users	/	0.008	0.01***	0.001	0.001	0.017	0.076	0.119
WTP High Financial Literacy	/	-0.07***	-0.01	-0.004	-0.004	0.145	-0.094	-0.906

Task 2 findings: Broker-users pay more for attributes that can raise broker fees.

Results show:

- More confused are WTP less for longer terms.

    BUT Brokers steer clients to higher WTP for longer terms.

- More confused are comfortable with higher fees.

- More confused WTP less for a principal and interest (v. IO) loan

- Highly financially literate participants are WTP less for loans from major lenders.

Discussion and future work

- WTP among broker clients aligns with broker fees:
  - Directly steer clients to longer loan terms
  - Indirectly, via confusion, lead borrowers away from P&I
  - Failure to educate
- Broker clients are **more confused, more satisfied** and **more confident about future loans** => set up for future engagement of broker
- Brokers should act in clients' 'best interests' => hard to evaluate
- Address '**conflicted remuneration**'

Young, risk tolerant, less skilled, intend to use brokers.

Marginal effects: Probability of Future Use of Broker
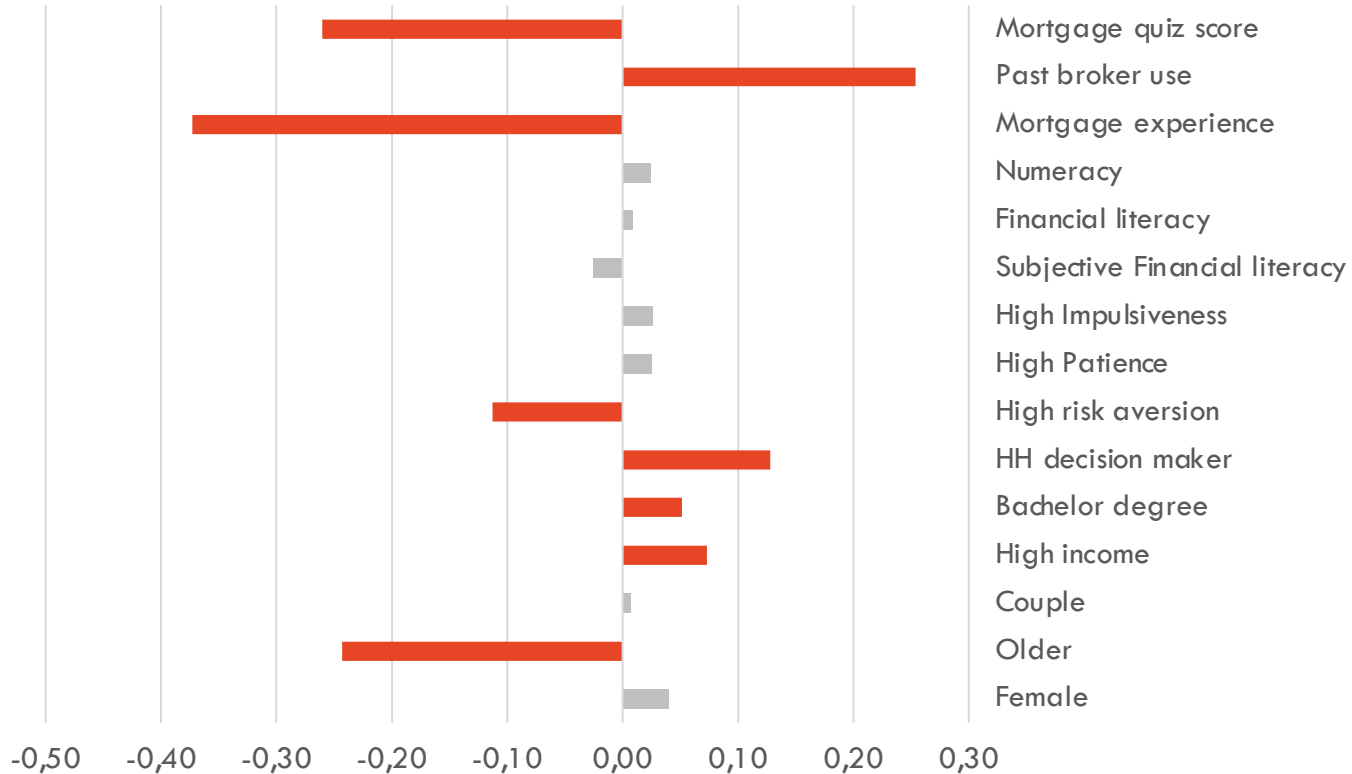
Residential property loans are financially important...

Homes dominate household balance sheets:

- Around **65-70%** **home ownership** (US, UK, and Aust.)
- Residential property **40%** **asset** share (US, Aust.)
- Mortgages **70%** **debt** share (US and Canada); 50% (Australia)

Repayments absorb income:

- Around **15%** **of disposable income** (OECD median for owner-occupiers)
- Currently **30%**+ of Australian mortgage holders under **'stress'**

Broker-users more confident; change plans more

Post-mortgage satisfaction and confidence	All	Broker	No Broker
Best mortgage for your needs (Yes)	74.08	79.50	64.76
How satisfied with service (Satisfied or extremely satisfied)	80.40	82.33	77.08
How confident going through the mortgage process next time (More v. same or less)	45.52	54.33	30.37
Changes from planned mortgage			
Bigger loan size	16.12	**22.67**	**4.87**
Smaller loan size	10.01	11.67	7.16
Same loan size	62.07	55.17	73.93
Changed to variable from fixed rate	19.28	25.17	9.17
Changed to fixed from variable rate	12.96	16.50	6.88
Same rate type	50.69	44.17	61.89
Longer term	19.81	**24.50**	**11.75**
Shorter term	11.80	14.17	7.74
Same term	56.69	50.33	67.62