

Don't Judge a Book by its Cover: A Discrete Choice Model of Cultural Experience Good Consumption

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North American Workshop on Cultural Economics
November 2017

Background and Motivation

The Australian Book Industry: Authors, publishers and readers in a time of change

- 3-year research project funded by the Australian Research Council, the Australia Council for the Arts and Macquarie University
- Headed by Professor David Throsby, with Dr Jan Zwar
- Project investigates:
 - authors and their responses to changing circumstances
 - book publishers and the ways in which they contribute economic, social and cultural value
 - practices of contemporary book readers
- More info: goto.mq.edu.au/reach
- PhD project: Determinants of demand for cultural goods, application to the market for books

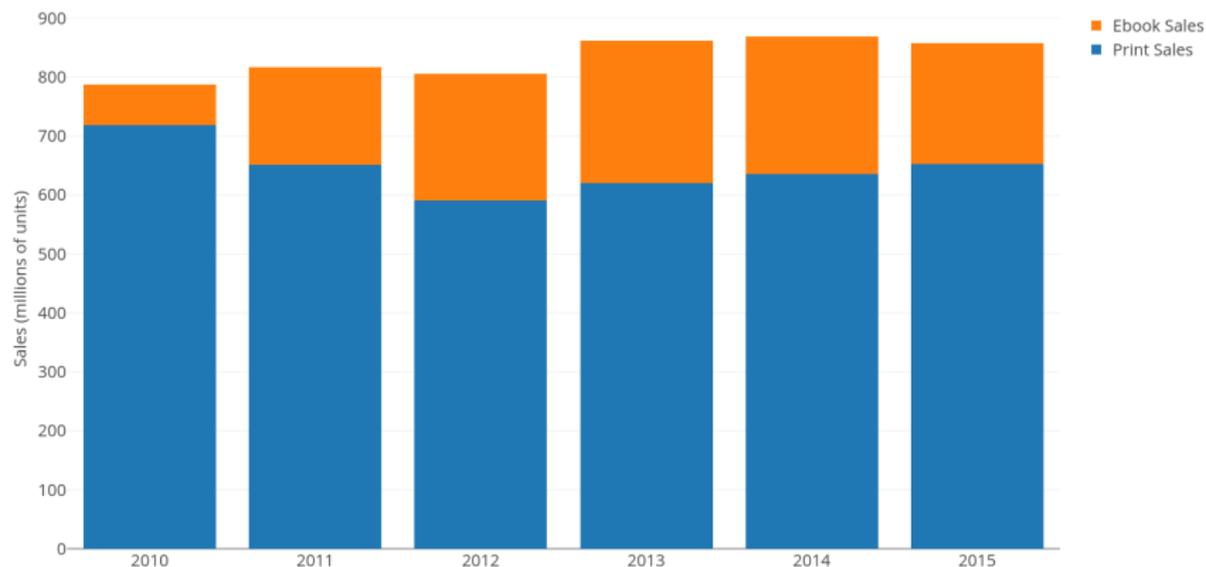
Background and Motivation

The rise of ebooks:

- Ebooks are now a major contender to the traditional printed paperback and hardback formats
- Remarkable growth in sales driven by the arrival of the Kindle (2007), Nook (2008) and iBookstore (2010)

Background and Motivation

US Book Sales: 2010-2015



Source: Nielsen BookScan (2016)

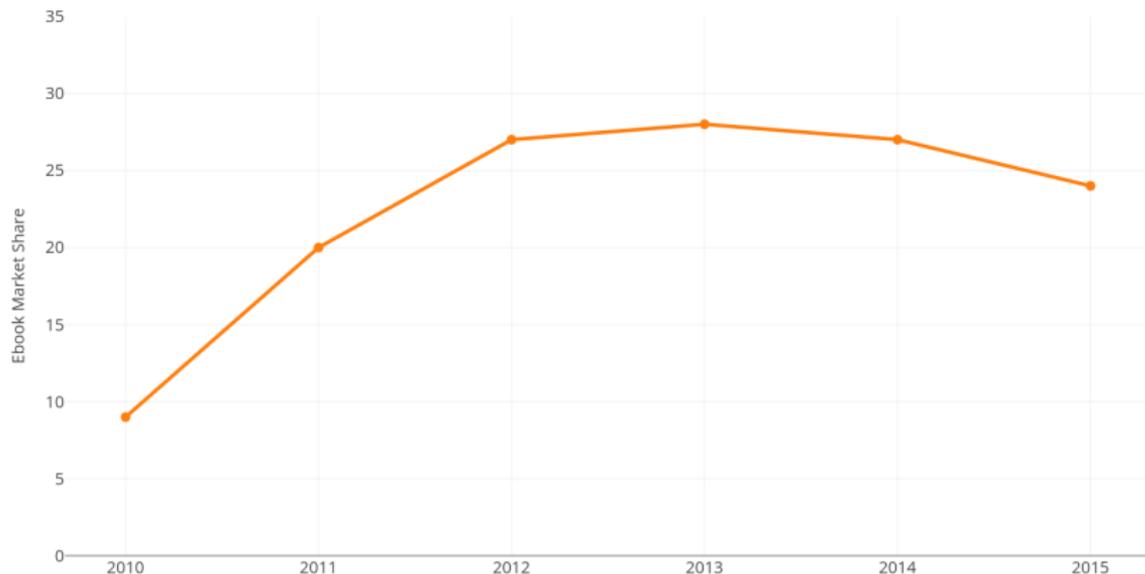
Background and Motivation

The fall of ebooks?:

- Sales and market share of ebooks fell for the first time ever between 2013 and 2014 (trend continued in 2015)
- Printed book sales have increased every year since 2012
- Nielsen BookScan shows similar trends in other English language book markets (UK, AU, CAN)

Background and Motivation

US Ebook Market Share: 2010-2015



Source: Nielsen BookScan (2016)

Background and Motivation

Opposing viewpoints:

- “Clearly publishing, like other industries before (and since), suffered a bad attack of technodazzle: It failed to distinguish between newness and value. It could read digital’s hysterical cheerleaders, but not predict how a market of human beings would respond to a product once the novelty had passed.”
- Author Simon Jenkins (May, 2016)
- “Much like the passing of a cherished relative, denial is inevitable, publishers in particular. But the printed book’s death rattle is obvious for those who are paying attention to the ebook craze.”
- Author Kent Lester (June, 2016)

Background and Motivation

The problem:

- The digital transition has changed the way books are written, sold and read
- Large degree of uncertainty as to what the future holds for the book
- Declarations on how consumers value different book formats and attributes remain anecdotal
- “Missing data frustrate an empirically sound judgement on the functioning of the market” - Canoy et al. (2006)
- Compounded by the fact that books are cultural and experiential in their nature

Background and Motivation

A possible solution:

- Stated preference survey examining preferences for a variety of book formats and attributes
- Estimation of a latent class model (LCM)

Objectives:

- Derivation of readers' willingness to pay for different book formats and an array of attributes relating to the reading experience
- Examination of heterogeneity amongst readers in order to identify the size and preferences of distinct consumer segments in the market for books

Applications of LCMs to cultural goods:

- Boter et al. (2005) - museum patrons and willingness to travel
- Chan and Goldthorpe (2007) - different types of music and visual arts consumers
- Pulido-Fernandez and Sanchez-Rivero (2010) - predisposition to choose 'cultural tourism'
- Grisolía and Willis (2012) - drivers of theatre choice

Data Collection

- D-efficient experimental design, priors derived from a pilot study
- Online stated preference survey examining preferences for a variety of book formats and attributes
- 242 Australian book readers, each presented with 12 choice tasks ($n = 2904$)
- Respondents asked to complete a sample choice task beforehand and provided with an information sheet while completing the choice tasks

Additional survey questions:

- Attribute non-attendance information
- Book reading habits
- Knowledge of authors
- Cultural value statements
- Socio-demographic information

Descriptive Statistics

Sex	Male	36.78%
	Female	63.22%
Location	Capital city or suburbs	63.22%
	Regional, rural or remote area	36.78%
Education	Did not complete high school	9.09%
	High school or equivalent	20.25%
	Post-secondary diploma / certificate	31.40%
	Bachelors degree	27.69%
	Postgraduate degree	11.57%

Descriptive Statistics

Income (AU\$)	Less than \$400 per week	17.77%
	\$400 to \$999 per week	33.88%
	\$1,000 to \$1,599 per week	24.79%
	More than \$1,600 per week	23.55%
Age	18 to 24	16.60%
	25 to 44	45.64%
	45 to 64	29.46%
	Older than 64	8.30%
Household	Single, no dependent children	42.98%
	Single, with dependent children	6.61%
	Partner, no dependent children	29.34%
	Partner, with dependent children	21.07%

Alternatives

Each choice task asks the respondent to pick from a suite of hypothetical reading experiences (i.e. books)

Alternatives take the form of different book formats:

- Hardback book
- Paperback book
- Ebook
- Audiobook
- No choice

Attributes and Levels

Attribute selection based on:

- Review of the existing literature on cultural experience good demand
- Pilot study that asked respondents what attributes of a book play an important role in determining reading choice

Selected attributes:

- Genre
- Critical Consensus
- Level of Australian Cultural Content
- Price

- Examine the presence of the ‘cultural omnivore’, i.e the link between diverse consumption patterns and:
 - Socio-demographic characteristics
 - Past exposure to cultural goods
- Genre attribute consists of four levels designed to cover the broad spectrum of books on offer:
 - Literary fiction
 - Genre fiction
 - Literary non-fiction
 - General non-fiction

Critical Consensus

- Experiential nature of books renders their quality indeterminate prior to consumption
- Demand for books is likely to be dependent, at least in part, upon signals of quality
- Aggregated professional review score selected as measure of critical consensus, with the following four levels:
 - 2 out of 10 - book received generally very negative reviews
 - 4 out of 10 - book received generally negative reviews
 - 6 out of 10 - book received generally positive reviews
 - 8 out of 10 - book received generally very positive reviews

Level of Australian Cultural Content

- Cultural economists are likely particularly interested in how differing levels of cultural content impact choice
- Measures and interpretations of culture are very much subjective in nature
- Government policy regarding the cultural industries is primarily centred around the protection and production of 'national' culture (Mas-Colell, 1999)
- The 'level of Australian cultural content' is introduced into the experiment, and comprises three levels:
 - None - book does not contribute to building a collective Australian identity
 - Low - book contributes in a small way to building a collective Australian identity
 - High - book contributes greatly to building a collective Australian identity

- In order to adequately cover the range of book prices on the market the following price levels were chosen:
 - AU\$7.50
 - AU\$15.00
 - AU\$22.50
 - AU\$30.00
- Permits the derivation of respondents' willingness to pay for the alternatives and attributes presented

Attributes and Levels

Attribute	Level
Genre	Literary Fiction Genre Fiction Literary Non-fiction General Non-fiction
Critical Consensus	2 out of 10 4 out of 10 6 out of 10 8 out of 10
Level of Australian Cultural Content	None Low High
Price	AU\$7.50 AU\$15.00 AU\$22.50 AU\$30.00

Sample Choice Task

	Reading Options			
	 Hardback Book	 Paperback Book	 ebook	 Audiobook
Genre of Book	Literary Non-fiction	General Non-fiction	Genre Fiction	Genre Fiction
Critical Consensus	6 out of 10	6 out of 10	2 out of 10	6 out of 10
Level of Australian Cultural Content	None	High	Low	Low
Price of Book (in AU\$)	\$22.50	\$7.50	\$22.50	\$30.00

Information Sheet

Reading Options

Hardback Book - A hardback book (also known as a hardcover or hardbound book) is bound with rigid protective covers. Hardback books are considered to be more durable than paperback books, however they are also heavier and therefore less portable than their paperback equivalents.

Paperback Book - A paperback book is characterised by a thick paper (or paperboard) cover. Paperback books are flexible, often held together by glue. Paperback books are generally lighter and smaller than their hardback equivalents, however they are likely to be less durable.

ebook - An ebook (or electronic book) is a book that has been made available in digital form, consisting of text, images or both. ebooks are readable on computers, smartphones and dedicated ereader devices such as Amazon's Kindle or the Kobo.

Audiobook - An audiobook (or talking book) is a recording of a book's text being read aloud. Audiobooks are sold in the form of downloadable files which can be listened to on computers, smartphones and most stereo equipment (for example at home or in-car).

Genre of Book

Literary Fiction - Literary fiction books are works of fiction that are said to possess literary merit. That is to say, such books tend incorporate social or political commentary and focus on the human condition. It is often said that works of literary fiction are character driven and focus more on overarching themes, rather than on plot. **Examples of literary fiction include *The Great Gatsby* by F. Scott Fitzgerald and *To Kill a Mockingbird* by Harper Lee.**

Genre Fiction - Genre fiction (also known as popular fiction) are plot-driven works of fiction, written with the intent of fitting into a specific literary genre (such as crime, science fiction, romance, horror, etc.). **Examples of genre fiction include: *It* by Stephen King and *The Girl with the Dragon Tattoo* by Stieg Larsson.**

Literary Non-fiction - Literary non-fiction (also known as creative or narrative non-fiction) is a genre of books that uses literary styles and techniques to create factually accurate narratives. **Examples of literary non-fiction include *In Cold Blood* by Truman Capote and *Wild: Lost to Found on the Pacific Crest Trail* by Cheryl Strayed.**

General Non-fiction - General non-fiction (also known as trade non-fiction) are non-fiction books are published for general readership. General non-fiction books are not generally targeted for a specialised or niche reader, instead they are books that are aimed for a wider audience. **Examples of general non-fiction include *A Brief History of Time* by Stephen Hawking and *No Logo* by Naomi Klein**

Critical Consensus

Critical consensus is a single number designed to encapsulate an overall measure of critical opinion towards the hypothetical book in question. Critical consensus scores should be interpreted as follows:

2 out of 10 - Indicates the book received generally **very negative reviews**

4 out of 10 - Indicates the book received generally **negative reviews**

6 out of 10 - Indicates the book received generally **positive reviews**

8 out of 10 - Indicates the book received generally **very positive reviews**

Level of Australian Cultural Content

The level of Australian cultural content is a characteristic designed to capture to what degree the hypothetical book in question conveys uniquely Australian ideas, symbols and ways of life. Books that contain Australian cultural content help to build a collective Australian identity and influence the nation's cultural practices. The level of Australian cultural content should be interpreted as follows:

None – Books with no Australian cultural content contain no uniquely Australian ideas, symbols and ways of life and therefore **do not contribute** to building a collective Australian identity

Low - Books with a low level of Australian cultural content contain some references to uniquely Australian ideas, symbols and ways of life and therefore **contribute in a small way** to building a collective Australian identity

High - Books with a high level of Australian cultural content are primarily centered on the communication of uniquely Australian ideas, symbols and ways of life and therefore **contribute greatly** to building a collective Australian identity

Price of Book (in AU\$)

This the price to purchase the book in question. Note that for this price you receive your own copy of the book on the format listed (hardback, paperback, ebook or audiobook). You are able to read the book an unlimited amount of times at your leisure.

Utility Function

Utility can be defined

$$U_{nj} = \alpha_j + \mathbf{x}'_j \beta + \varepsilon_{nj}$$

where

- n is the decision maker
- j is the alternative
- \mathbf{x} is the $(k \times 1)$ vector of attributes associated with alternative j
- ε is type-1 extreme value error

Estimated parameters used to estimate elasticities (w.r.t. attributes) and willingness to pay

MNL Results

	MNL		
Hardback book	0.8669*** (0.0877)	Log-likelihood	-3872.6185
Paperback book	1.0844*** (0.0900)	Observations	2904
eBook	0.4103*** (0.0968)	Parameters	11
Audiobook	-0.2105*** (0.1053)	AIC/N	2.675
Genre Fiction	0.3000*** (0.0371)	BIC/N	2.697
General Non-fiction	-0.0868** (0.0407)	Likelihood ratio-index	0.117
Literary Non-fiction	-0.1513*** (0.0417)		
Critical Consensus	0.2393*** (0.0116)		
High Cultural Content	0.0781** (0.0318)		
No Cultural Content	-0.1022*** (0.0366)		
Price	-0.0708*** (0.0033)		

MNL Results

- Format that brings respondents the most utility is paperback, followed by hardback, ebooks and finally audiobooks
- Utility derived from 'traditional' formats is over twice that of the newer ebook format
- Genre fiction is the most popular genre. A move from the 'base' genre of literary fiction to either of the non-fiction genres is associated with a decrease in utility
- Critical consensus is found to be a (very) important determinant of book choice
- The parameters associated with a book's level of Australian cultural content indicate not only a desire to consume such content, but also to avoid books containing no such content
- Price parameter is negative as expected

LCM Results

	LCM - Membership		
	Class 1	Class 2	Class 3
Utility function			
Hardback book	-0.5930*** (0.1585)	4.4781*** (0.4796)	1.3941*** (0.2048)
Paperback book	-0.4277*** (0.1600)	4.7857*** (0.4836)	1.5079*** (0.2073)
eBook	-1.7766*** (0.1618)	2.8255*** (0.5026)	1.8087*** (0.1981)
Audiobook	-2.6248*** (0.2273)	1.3508** (0.5260)	1.3335*** (0.2110)
Genre Fiction	0.7292*** (0.0656)	0.13 (0.0861)	0.1159** (0.0548)
General Non-fiction	-0.3117*** (0.1038)	0.1123 (0.1237)	-0.0320 (0.0671)
Literary Non-fiction	-0.3946*** (0.1229)	-0.1589 (0.1738)	-0.1146 (0.0735)
Critical Consensus	0.3594*** (0.0251)	0.0731** (0.0336)	0.2888*** (0.0136)
High Cultural Content	0.0635 (0.0622)	0.1764* (0.1002)	0.1214*** (0.0398)
No Cultural Content	-0.0420 (0.1135)	-0.1880** (0.0940)	-0.0651 (0.0652)
Price	-0.0928*** (0.0074)	-0.0719*** (0.0059)	-0.0611*** (0.0050)

LCM Results

	LCM - Membership		
	Class 1	Class 2	Class 3
Membership functions			
Constant	1.1368*** (0.3982)	1.0734*** (0.4116)	
Young	-1.6337*** (0.4191)	-0.9256** (0.4170)	
University	-0.4522 (0.4093)	-0.9490** (0.4284)	
Well Read	-0.1593** (0.0673)	-0.1943*** (0.0747)	
Group Size	30.0%	27.2%	42.8%
Log-likelihood		-3465.6318	
Observations		2904	
Parameters		41	
AIC/N		2.415	
BIC/N		2.499	
Likelihood ratio-index		0.258	

Membership Functions

Statistically significant segmentation variables:

- Young - under age of 35
- University - possess a bachelors degree (or higher)
- Well read - respondents who reported reading a wider range of authors than the sample average

Variables such as sex, income, marital status, etc. often found to influence demand for other cultural goods (e.g. visits to the opera and theatre)

- Not found to be statistically significant in the case of books

Willingness to Pay (AU\$)

	MNL	LCM - Membership		
		Class 1	Class 2	Class 3
Hardback book	12.24	-6.39	62.28	22.82
Paperback book	15.32	-4.61	66.56	24.68
eBook	5.80	-19.14	39.30	29.60
Audiobook	-2.97	-28.28	18.79	21.82
Genre Fiction	4.24	7.86	1.79	1.90
General Non-fiction	-1.23	-3.36	1.56	-0.52
Literary Non-fiction	-2.14	-4.25	-2.21	-1.88
Critical Consensus	3.38	3.87	1.02	4.73
High Cultural Content	1.10	0.68	2.45	1.99
No Cultural Content	-1.44	-0.45	-2.61	-1.07

LCM Results: Class Designation

Analysis of both the parameter estimates and the willingness to pay calculations lead to the following classification of book readers:

- Class 1: Popular Readers (30%)
- Class 2: Cultural Connoisseurs (27.2%)
- Class 3: Technological Adopters (42.8%)

Class 1: Popular Readers

- Accounts for 30% of the market
- Contains readers who show little regard for reading anything other than genre fiction (commonly known as popular fiction) on traditional paper based book formats
- Popular readers show no desire to pay for books with high degrees of cultural content (or to avoid books with no cultural content)
- Willing to pay a relatively high amount to ensure books they purchase are critically acclaimed
- This class has the lowest willingness to pay for books overall
- Analysis of the membership functions indicate this group contains older readers in comparison to classes 2 and 3, who are less well read

Class 2: Cultural Connoisseurs

- Accounts for 27.2% of the market
- Members of this group can be considered to be the most 'traditional' in terms of their reading preferences
- Willingness to pay for traditional paper based formats is considerably higher than it is for newer digital formats
- Show a strong desire to read books that contain a high degree of cultural content, and are also willing to pay to avoid those books that contain no cultural content
- Willing to pay for books that are critically acclaimed, however, this attribute is much less of a deciding factor in choice than it is for members of classes 1 and 3
- This class has the highest willingness to pay for books overall

Class 3: Technological Adopters

- Accounts for 42.8% of the market
- Analysis of the membership functions indicate this group contains the youngest group of readers, who read the widest variety of books
- Members of this group show a willingness to adopt new content delivery technologies
- Demonstrate a very slight preference for genre fiction (albeit to much less of an extent than class 1)
- The group's desire for high degrees of cultural content traverses the middle ground between class 1 and 2
- Members of this group show the greatest willingness to pay for increases in aggregated critical review score
- This group's overall willingness to pay for a book is similar to the recommended retail prices found on the market today.

Conclusions

- Those forecasting the imminent demise of the printed book appear to be premature in their predictions
- There remains 2 distinct groups that remain steadfast in their desire to avoid digital formats
- However, the presence of a large, clearly definable, group of technological adopters is a clear indication that the digital transition is well under way
- Younger readers are powering this transition
 - If preferences for individual formats remain consistent during the life of a reader, market shares of paperback and hardback books could be continually eroded

Implications for book publishers and other industry stakeholders

- Publishers need to incorporate the adoption of newer digital formats into their strategic planning
- Majority of readers are willing to pay to read books that contain a high degree of cultural content
 - Books remain a vital conduit for the transmission of Australian ideas, symbols and ways of life - even for young people
 - Provides a justification for programs designed to fund and maintain an active and engaged Australian literary culture
- Importance of measures of critical consensus in overcoming information problems associated with the consumption of experiential goods

Building from this research, two further avenues of investigation are proposed:

- While it is now apparent which formats differing classes of consumer now prefer (and actively dislike), it would be of interest to look at what attributes of each individual format (rather than book as a whole) readers value the most
- This experiment was restricted to a sample of Australian readers. It would therefore be of interest to repeat the choice experiment on samples from other countries