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**A Conjoint Analysis of the Value of Book Covers in E-Book Buying
Decisions**

By Holly Rollins

A Thesis submitted in partial fulfillment of the requirements for the degree of
Master of Science in Print Media in the School of Media Sciences in the College
of Imaging Arts and Sciences of the Rochester Institute of Technology

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Abstract

The objective of this Thesis was to determine the relative value of the cover design, price, and customer rating (e-book attributes) to consumers of science fiction or fantasy e-books. The motivation for this research was that the way we shop for digital books is different from the way we shop for print books. This led authorities to take positions as different as “[Book covers are] dead because the way we touch digital books is different than the way we touch physical books,” (Mod, 2012), and “[Typographic covers] are one way to go,” (Bridle, 2010).

A conjoint analysis was designed to test the relative importance of the book cover. The attributes and levels investigated were: cover (“traditional attractive,” “traditional unattractive,” and “all-text” levels); price (\$2.99 and \$6.99 levels); and rating (3 star and 5 star levels). Offerings comprising twelve combinations of these attributes and levels were presented to 96 participants and preference responses were recorded. Following data scrubbing and statistical validation, a total of 48 meaningful and statistically significant responses were selected as the sample population for conjoint analysis.

Based on the results of the experiment, the traditional attractive cover was strongly preferred to both the traditional unattractive and the all-text cover.

Even among participants who only viewed thumbnail images (24 of 48), 63% found that the traditional attractive cover added significant value to an offering, versus 8% who thought it reduced the value of an offering. Among participants who viewed full-size cover images (24 of 48), 79% thought that the traditional attractive cover added value to an offering, and no one thought that it reduced the value of an offering. On the other hand, participants who only viewed thumbnails were split on the value added by the all-text cover (6 negative, 12 neutral, and 6 positive). Among participants who viewed full-size cover images, the overall perception of the all-text cover was slightly negative (4 negative, 18 neutral, 2 positive).

The principal conclusion of the conjoint analysis experiment is that book covers are emphatically not dead. Overall, participants in this experiment assigned 73% of the total value of the offering to cover design (compared to 17% for price and 10% for rating). This percentage is consistent with the Schmidt-Stölting et al. study of the German brick-and-mortar book market where book covers were responsible for 74% of the value created by the attributes cover, price, and rating (word-of-mouth).

Chapter 1

Introduction

While the book publishing industry as a whole has recovered well from the recessions of the mid to late 2000s, there has been a shift in consumer preferences occurring at the same time. The introduction of the e-book, along with popular e-book readers such as the Amazon Kindle, the Barnes & Noble Nook, and the Apple iPad have created and maintained interest in digital books among consumers. This development poses “a very real threat to the livelihood of publishing houses,” (Gale, 2012). In fact, Amazon CEO and founder Jeff Bezos said in December 2009 that “for every 100 copies of a physical book [Amazon. com sells], where we have the Kindle edition, we will sell 48 copies of the Kindle edition,” (Solomon, 2009). Bezos further said that he expected e-book sales to outstrip physical book sales in only a few years. It is apparent that the market for e-books is healthy and e-books are by nature a disruptive innovation to the publishing industry. Because of this, publishers must learn to adapt to evolving preferences. Though e-books provide the same basic product as physical books, they are inherently different and may require publishers to market and sell them differently.

Background

As of March 2011, the six largest book publishers all had partnerships with Apple to offer books through its iPad electronic reader. Amazon and Barnes & Noble also had similar agreements with some publishers (Schmidt-Stölting, Blömeke, & Clement, 2011). E-book sales are growing quickly; in 2012 sales grew 40%. E-reader sales also grew by 10.3 million units in 2010 and 24.1 million units in 2011.

The state of the e-book market suggests that it will follow Harvard professor Clayton Christensen's theory of disruptive innovation, which says that an innovation that creates a new market can disrupt an old one, even if the new innovation does not offer as much to customers. E-books do not offer the permanence or tangibility of a physical book, but they do offer speed of receipt, lower cost, and increased portability. Therefore, there is significant opportunity for book publishers in the e-book market for reasons including lower cost, ease of distribution, and potential for increased consumption. Overall, revenue is expected to be lower than previous years, specifically the years 2005 through 2010, but the industry is still capable of being profitable. With lower costs comes the opportunity for a leaner operation.

Statement of the Problem

Electronic publishing is growing. Because it is a "very real threat to the livelihood of publishing houses," (Gale, 2012) traditional media publishers are

acting to embrace it, with varying degrees of success. So far, publishers have entered the e-book market primarily by offering the title exactly as they would in physical format: the cover is the same and marketing is the same. However, because of the digital nature of e-books, it is not certain that this method is capturing the market as well as publishers could be.

The potential impact of the value of book covers and other attributes is unknown for e-books and therefore interesting. Publishers and marketers are still trying to understand how e-books fit into the global marketplace. Knowing what features impact printed book sales versus e-book sales may increase profits and lead to happier consumers and happier publishers.

Reason for Interest

This research could provide book publishing houses, self-publishing authors, and marketers of books in general a better understanding of how to attract their target customers. With this Thesis, the researcher hopes to provide better understanding for publishers of e-books the attributes of e-books that are most important in creating interest and preference for consumers.

It is interesting to consider what attributes best define the marketing and selling of e-books. As noted above, most e-books have been released with the same or similar marketing as their paperback and hardback versions. However, the digital marketplace is a completely different platform and it is possible that it requires or would be better suited to focusing on different selling attributes.

Whether or not book covers feature into this platform is what the researcher hopes to find—and if book covers are important for e-books, the researcher would like to find out if it's in the same capacity. In other words, do book covers need to be adapted to a digital market? Several ways of doing this have been proposed, including having only all-text covers for e-books, as websites such as Amazon.com display books with a small thumbnail that may not accurately or positively reflect the cover of the e-book on offer.

Chapter 2

Theoretical Basis

Introduction

Book choice, like other consumer behavior choices, can be planned or an impulse purchase. A study conducted by Bowker, the official ISBN agency for the United States, found that more money was spent on books in electronic markets than any other, but that impulse buys online were still much lower than impulse purchases made in a brick-and-mortar store (Milliot, 2011). Decision-making is either planned or unplanned—in other words, impulsive—and can be broadly categorized into emotional decisions and rational decisions. In an online environment where e-books are sold, 44% of purchases are for a planned book at the time the purchase was made, with another 28% for a planned book purchased sooner than was planned. A summary of online book purchasing behavior is presented in Figure 1. The emotional and rational approaches to decision-making are discussed in the next section.

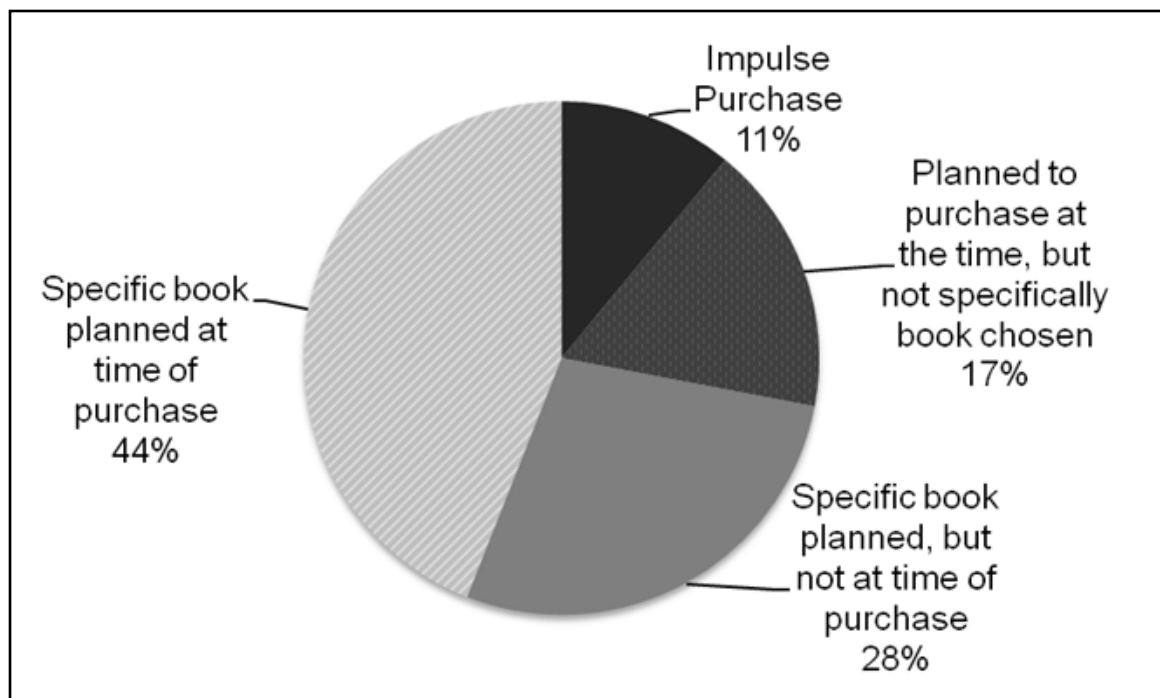


Figure 1: Impulse vs Planned online book buying behavior, (Milliot, 2011)

Emotional approach

According to Lewis Liao et al., emotion plays a significant role in the effectiveness of consumer goods packaging, and there are three fundamental measures of a good's packaging that affect a consumer's decision to purchase or not. Those three attributes are: attention, recognition, and affect, (Liao, Lockshin, Kennedy, & Corsi, 2010).

Attention. In order for the decision-making process to begin at all, the consumer must first notice that the product even exists. In the case of books, this would include shelf placement, marketing campaigns, and eye-catching cover designs, among other things. For e-books it would be similar, however shelf placement might be replaced with position on a website, such as Amazon.com.

Recognition. This is especially important for quick decision items, such as convenience goods like toothpaste, but is relevant to nearly all buying decisions. Brand recognition is important to buyers, and therefore recognizable logos and brands stand out more readily than unknown brands' goods do. For books, a well-known author's name in large type might incite recognition.

Affect. "Neuroscientists state [that] affect covers both the emotions and feelings a person has toward an object or activity," (Liao et al., 2010). In other words, affect is the consumer's response to seeing a good for sale—did the consumer feel positively or negatively about the good? A book cover can evoke a range of emotional responses, from horror to nostalgia to amusement, or even indifference. Each of these responses is valid, and understanding and predicting what those emotional responses will be is in the publisher's interest. In order to appeal to the consumer, the book must create a feeling that inspires purchase; this feeling is often non-conscious.

Rational approach

Alternatively, a rational approach might be used to make a purchasing decision. "A rational consumer decision as one where the consumer is aware of all the product alternatives, where the consumer has the capability to correctly rank product alternatives in terms of benefits and disadvantages and is able to identify the best alternative," (Erasmus, Boshoff, & Rousseau, 2001). In other words, in order for the buying decision to be considered rational, the consumer

must know and understand all relevant data, of which there can be much. For this reason, consumer science theorists called into question, in the 1980s, the value of the rational model. Studies showed that consumers were often “engaged in non-conscious behavior during consumer decision-making,” (Erasmus et al., 2001). Nevertheless, the researcher believes that there is some degree of rational, or pragmatic, consideration in most purchasing decisions, and therefore it is included here. In the case of e-books, the researcher believes that price plays some part.

When there are multiple attributes, the question becomes: which factors do consumers use to make buying decisions? While many decisions may involve consideration of rational facts, such as price, need, and brand, often the final decision will come down to emotions—a ‘gut feeling’. This makes it difficult to best choose between the two decision-making styles when designing study methodology. Conjoint analysis, however, allows for the impact of emotion. Conjoint analysis is often used in marketing decisions because it allows researchers to find the impact of attributes without directly asking a consumer what is important to him or her. The importance of the attribute is inferred from the consumer’s response to a bundle of attributes, called an offering. For example, in the case of an e-book, the book itself is an offering while the title, author, price, and so on, are attributes of it.

Conjoint Analysis

Background of conjoint analysis

Conjoint analysis, developed by Professor Paul Green of the University of Pennsylvania in the 1970s, was based off the 1964 work of psychologists and statisticians Luce and Tukey. It is a method of determining what attributes buyers find most important and which attributes they are willing to trade off. Eric Molin describes it as, “a data collection method that is especially useful if one is interested in examining the trade-offs that individuals or households make with respect to residential characteristics,” (Molin, 2011). It is the trade-offs that make conjoint analysis so valuable, as it provides the backbone of a ranking system.

Per Green and Srinivason, “conjoint analysis is any decompositional method that estimates the structure of a consumer’s preferences (i.e., estimates preference parameters such as part-worths, importance weights, ideal points) given his or her overall evaluations of a set of alternatives that are prespecified in terms of levels of different attributes,” (Green & Srinivasan, 1990). In other words, not only does it strive to determine what people value, but also how much they value it.

As explained earlier, people are more often than not emotional decision makers, and will often ‘go with their gut’ when making a decision. However, since the early 1970s, conjoint analysis has been used in both industrial and academic applications, and remains a popular choice for marketing decision-making given

its strong history of accuracy when predicting buyer preferences, regardless of rational or emotional processes.

Conjoint analysis model

Conjoint analysis simulates actual buyer choices. When applied, the conjoint model produces a utility function that “describes to what extent each attribute contributes to the overall utility of residential alternatives,” (Molin, 2011).

The utility function consists of a sum of “part-worths,”—in other words, the value a decision-maker places on each attribute. The utility function serves a number of other purposes, including providing insight into what trade-offs decision-makers are willing to make, and the space between one attribute and another. If price is an attribute in the given model, which it usually is, then the experimenter can suppose how much each attribute is worth, in monetary terms. This can be useful for developing up-charge features for higher-end models of a product.

These part-worths are summed together to provide a measure of overall ranking for the defined attributes.

Conducting a Conjoint Analysis

To conduct a conjoint analysis, the following steps are performed:

1. Defining the attribute list
2. Determining the attribute levels
3. Choosing the measurement task
4. Designing the experiment survey
5. Conducting the survey & collecting data
6. Analyzing the survey data
7. Interpreting the results

Defining the attribute list

With conjoint analysis, it is better to have few, versus many, defined attributes. More than six attributes may place undue strain on respondents and potentially skew results due to fatigue or disinterest. It is imperative to choose only the most salient attributes.

To do this, Molin provides a framework, but it can be summed up in the following: (1) choose attributes that are most relevant to the most respondents most of the time, (2) combine attributes where appropriate and necessary to prevent redundancy, and (3) ensure that each attribute is clearly defined and unambiguous.

Determining the attribute levels

The number of levels for each attribute is determined based on how the experimenter expects the relationship between the attribute and its part-worth to express itself. Only two levels are needed if it is expected to be linear, as only two points are required for a line; however if the relationship is expected to be curvilinear, three or more levels is required. The levels chosen should represent the entire range of potential responses.

Any categorical attributes—those that cannot be quantified, such as gender and occupation—are coded. For example, female might be given the code “1” and male the code “0.” The numbers are meaningless except as a means of distinguishing between categories.

Choosing the measurement task

Surveys may be conducted by rating, choosing, or ranking different profiles, which are combinations of attributes. Rating is when a respondent is asked to give a profile a rating, e.g., 0 being extremely undesirable and 10 being extremely desirable. Choosing is when a respondent is asked to pick one profile from a set of two or more. Finally, ranking is when the respondent is given two or more profiles and asked to order them by their preference.

It has been found that profile cards using brief verbiage, and perhaps with a pictorial stimulus, is a favorable option for presenting attributes, (Green & Srinivasan, 1990). While paragraphs are still used, the respondent may remain

more engaged in the study when there is less “work” to perform, such as reading long paragraphs.

Designing the experiment survey

Designing an experiment entails choosing the set of offerings which are presented to participants during the experiment. A full factorial design presents all possible combinations of attribute levels to the participants. For example, a full factorial design for a survey with 6 attributes with 2 levels has 64 possible offerings. Since participant fatigue can skew results when 20 or more offerings are presented in a single experiment, a fractional factorial design is often used to reduce the number of experimental offerings in cases where a full factorial design exceeds 20 or so offerings.

Conducting the survey & collecting data

The first step is to prepare the offering cards and response forms required to implement the experimental design. The next is to select participants for the survey; once selected, the participants are sent offering cards and response forms via mail, email, or in person, depending on preference.

Analyzing the survey data

Once responses from participants are collected, the data is analyzed using conjoint analysis and multivariate linear regression. The data is interpreted and possibilities for future research are noted.

Chapter 3

Literature Review

Introduction

Research into the buying preferences related to e-books is scarce. A look at market and industry data and literature related to the book publishing industry as a whole and buyer behavior for non-necessity goods shows that while there is much data for buyer preference in hardbacks and paperbacks, there is very little for e-books. In fact, no significant research was found discussing the attributes most decisive for consumers of e-books. Previous related research on the printed book-buying process as a whole and the factors that may affect the success of the e-book's sales is robust. Of particular note, literature on the relative value of the book cover for paperbacks and the concept of "legitimacy" for goods—especially those purchased online—is reviewed below.

Book Buying Process

In 1992, Leemans and Stokmans examined the way that people bought books, and at the time, they found that consumers first tried to limit their choices through a process of elimination. Because of the wide selection of books and their "non-comparableness," selecting a book can be a very time-consuming and complex process for the buyer, (d'Astous, Colbert, & Mbarek, 2006). Reducing

the number of choices makes this easier. Following this reduction, consumers then evaluate the book using a set of particular attributes. The experiment found that “the most important attributes in both phases were the same: the author’s reputation, the person’s past experience with the author, and the book’s content,” (d’Astous et al, 2006).

A separate 1991 study by Kamphuis found 13 important attributes, including author’s reputation, book’s theme, writing style, book’s appearance, and perceived cultural value. At the conclusion of this study, Kamphuis proposed that an author’s name becomes like a brand, and that consumers would react positively or negatively to everything by that author depending on their perception of the brand. Two other studies, including Schmidt-Stölting et al. (2011), show that the book cover is highly important. In Table 1, six attributes found to have the significance in this study are summarized, with the attributes chosen for this research highlighted in bold.

Table 1: Attributes of paperback fiction books in the German book market studied by Schmidt-Stölting et al.

Attribute	Description
Genre	Levels studied and found significant: Thriller, Biography, Fantasy, Other Genre, and the constant Novel
Author	Levels studied and found significant: Fame, Celebrity
Appearance	Levels studied and found significant: Cover
Promotion	Levels studied and found significant: Critics, Author Awards, Word-of-Mouth
Place	Levels studied and found significant: Publisher, Quarter 1, Quarter 4, Week
Price	Price not found to be significant

Importance of the Book Cover

Given these previous experiments, d'Astous et al., determined that there were three main attributes that affected whether a consumer chose a book: author, publisher reputation, and book cover. These experiments were conducted before digital books became mainstream reading options. Because only the format of books is in transition—printed to digital, specifically—and not the content or “non-comparableness” of them, we can test that this process will be largely the same.

In the past, the appearance of a book could have a very great impact on its success. Children’s book publishers in the late 1990s were using book cover design to attract children to old books. In fact, the cover is seen as packaging, a “poster for the book,” that can help to build a brand for both the book and the author (Maughan, 1998). Publishers are using covers to draw attention to author names as well as to give each of the author’s books an identifiable brand identity. The most often cited reason a book is reissued with a new cover is to freshen up dated-looking cover designs. Covers that have been around too long are often passed over by the eye as something already known; refreshing a dated cover can add new interest, (Maughan, 1998).

Given their visual nature, images, and by default graphic book covers, fall under Roland Barthes’ theory of “death of the author” which argues that the author’s (and in this case, the cover artist’s) intentions and biographical context are irrelevant to interpreting the image (in this case, the book cover), (Barthes,

1977b). The cover may give the consumer no feelings one way or another if he or she is already committed to buying the book, but a cover he or she finds off-putting may convince an uncommitted consumer not to purchase the book. It is therefore imperative that the message consumers receive from the cover image be attractive to him or her in some way, whether positively or negatively, such as in the case of books which are meant to inspire strong, negatively visceral reactions, such as those on very dark subjects. Barthes' introduction of the *three messages* deconstructs the importance of the image even further. He breaks it down into the linguistic message, the symbolic message, and the literal message in his essay, "Rhetoric of the image," (Barthes, 1977a).

Linguistic message

The linguistic message is the textual part of an advertising image, (e.g. a book cover). In the case of this research, it refers to the title, the author, and any logline that may be present on the cover, as well as the back cover blurb.

Symbolic message

Also referred to as the connoted image, the symbolic image is the meaning provided by the image based purely on cultural context. For example, in the case of the "attractive" book cover chosen for the experiment in this research (discussed further in Chapter 5), the image portrays an advanced, futuristic society which could lead the reader to understand that the book is about a

futuristic society and might appeal to him or her if he or she typically likes such science fiction. A copy of the book cover is available in Appendix A.

Literal message

The final message, the literal message, is “non-coded,” or, in other words, blatant. In the case of our traditional attractive cover, the image of a city on an island is literal, since the story takes place in a matching setting.

E-book Buying

The way we shop for digital books is different from the way we shop for print books, so while the cover is still important in the buying decision, the features of it should be different to reflect the different needs of digital consumers. [Book covers are] “dead because the way we touch digital books is different than the way we touch physical books. And once you acknowledge that, useful corollaries emerge,” (Mod, 2012) is one point of view.

According to Bridle (2010), book cover designs require different print and digital formats. Because of thumbnails, the art of the cover in digital form is all but worthless—but the book cover itself is not. Typographic covers are one way to go according to book cover designer James Bridle, (Bridle, 2010). Another consideration is that designing for digital is very different than with print. Of note is Chip Kidd’s iconic cover for Haruki Murakami’s *1Q84*—in print, the layered covers symbolize the different worlds; on the iPad, it’s stagnant and less intriguing. The evolution of a book’s platform could present an opportunity for the

book cover as well, for example, one cover designer, Hannah Johnson, posed the question, “why don’t more publishers do animated book covers?” (Johnson, February 7, 2012).

Other Attributes Affecting Book Buying: The Perception of Legitimacy

Now, the Internet plays a larger role in book buying, with many consumers browsing and buying books from Amazon or Barnes and Noble online. Online book websites like Goodreads, WhichBook, and LibraryThing, as well as Amazon, are popular places to find new books to read and reviews from other readers. The star rating system in particular is used to determine the quality of a book. “Reviews help the customer minimize risk and uncertainty before consumer the product,” and, “both negative and positive reviews have a positive impact on sales,” (Schmidt-Stölting et al., 2011). A well-designed, attractive cover can signify legitimacy and quality. With this in mind, we find that buying a book online, especially an e-book, is affected by the book’s apparent legitimacy.

Conclusion

While literature on the attributes most affecting preference for e-books is thus far unavailable, the book publishing industry as a whole can provide an adequate benchmark for it. Given the attributes found to be important for paperback buying, the goal of this Thesis research is to select a subset of these attributes and determine which, if any, of these attributes are relevant to sellers and marketers of e-books.

Chapter 4

Research Questions

Research Questions

The purpose of this research is to determine how three e-book attributes (book covers, price, and rating) affect the buying process for consumers of e-books. Specifically, this research addresses the following research questions:

1. What is the relative importance of book cover, price, and rating (word-of-mouth) to consumers selecting fantasy or science fiction e-books for purchase?
2. What is the relative utility (part-worth) of “traditional attractive,” “traditional unattractive,” and “all-text” book covers to consumers of fantasy or science fiction e-books in an online marketplace environment?

Chapter 5

Methodology

Overview

A conjoint analysis experiment was used to answer the research questions posed in the previous chapter. The methodology is summarized in Figure 2.

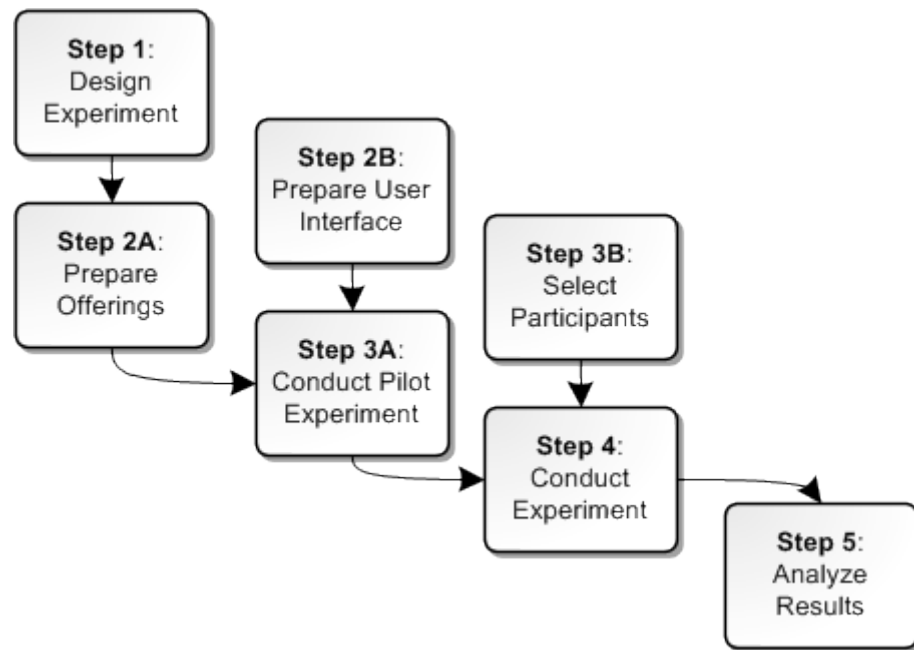


Figure 2: High-level overview of methodology

Step 1: Design Experiment

The following steps were undertaken to design the experiment. Figure 3 provides an overview of the experimental design process.



Figure 3: Overview of Step 1: Design Experiment

1.1 Choose attributes

Three attributes were chosen as the focus of this research: cover, ratings, and price. These attributes are taken from the Schmidt-Stölting et al. study's findings of attributes that are important for paperback sales. Two to three levels, depending on the particular attribute, further defined them.

1.2 Assign levels

The levels chosen for each attribute are explained below. An overview is provided in Table 2.

Table 2: Attribute levels selected for the experiment

Attributes	Level 1	Level 2	Level 3
Cover	Traditional Attractive	Traditional Unattractive	All-Text
Ratings	3 stars (average)	5 stars (excellent)	
Price	\$2.99 (average low)	\$6.99 (average high)	

Cover – 3 levels. Three levels of the Cover attribute were selected for investigation: “traditional attractive,” “traditional unattractive,” and “all-text.” These covers were selected from actual science fiction or fantasy e-books available for purchase in the Amazon Kindle Market. A pool of participants was used to validate the book covers used for the experiment to ensure that there was consensus among the designations of “attractive” and “unattractive.” The all-text cover was chosen to be neutral—tidy, minimal, efficient.

Rating – 2 levels. Rating was given a level of “3 stars” or “5 stars”. The Amazon rating system allows a scale of 1 to 5 stars, with 5 stars being excellent and 1 star being poor. A rating of 3 stars, however, is generally the lowest that a book with reasonably significant sales will have, and in effect represents a book that falls short of good. A rating for 4.5 stars or more is considered very good to excellent. Therefore, selecting levels of 3 and 5 stars represented a book that was considered “poor” and a book that was considered “excellent,” regardless of the fact that ratings do go as low as 1 star.

Price – 2 levels. Two price levels used in the experiment were \$2.99 USD and \$6.99 USD. These levels were chosen because they were at either end of the average e-book price range on Amazon.com (Greenfield, 28 May 2013) at the time of the experiment. As of May, 2013, e-book prices in the United States were typically between \$3.00 USD and \$6.94 USD, except for the top 25 best-selling books, which are often priced over \$10 USD. By using \$2.99 and \$6.99, the experiment simulated each end of the spectrum while maintaining a pricing

structure familiar to Kindle Market, Nook Store, and Apple iBooks shoppers—that being a price ending in .99.

1.3 Design experiment

The total number of offerings was $3 \times 2 \times 2 = 12$. Because there were fewer than 20 offerings, a full factorial analysis was used. With more than 20 offerings, participant fatigue becomes a concern, however 12 offerings is well within the suitable range for using a full factorial design.

Table 3 summarizes the experimental design. Column 5 shows the result of randomizing the offerings for presentation during the conjoint analysis experiment. All participants were shown the same random sequence of offerings.

Table 3: Summary of the experiment design

Case	Cover	Price	Rating	Randomized Sequence
1	Attractive	\$2.99	3	12
2	Attractive	\$2.99	5	5
3	Attractive	\$6.99	3	10
4	Attractive	\$6.99	5	4
5	Unattractive	\$2.99	3	3
6	Unattractive	\$2.99	5	1
7	Unattractive	\$6.99	3	8
8	Unattractive	\$6.99	5	9
9	All-Text	\$2.99	3	2
10	All-Text	\$2.99	5	6
11	All-Text	\$6.99	3	11
12	All-Text	\$6.99	5	7

Step 2A: Prepare Offerings

The following steps were taken to prepare the offerings used in the experiment. Figure 4 provides an overview of the steps taken to prepare offerings for the experiment.

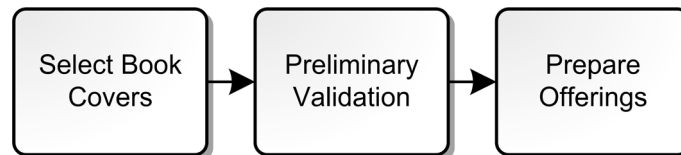


Figure 4: Overview of Step 2A: Prepare Offerings

2A.1 Select book covers

The book covers used in this experiment were taken from actual books available for purchase on the Amazon Kindle Store. This venue was chosen because it has the largest by sales volume of all e-book sales venues in the United States. Book covers were selected from the Science Fiction and Fantasy section on the Amazon Kindle store to ensure that they were relevant to the genre being studied.

One attractive graphic cover (traditional attractive), one unattractive graphic cover (traditional unattractive), and one neutral all-text cover were chosen based on the results of a poll of 37 people, which is discussed in depth in the the next subsection, 2A.2 Preliminary validation. Ninety percent of the respondents participating in the validation designated the chosen traditional covers to be “attractive” or “unattractive” respectively.

2A.2 Preliminary validation

During the preliminary validation, participants were shown 27 book covers and forced to assign them to either an “attractive” or “unattractive” group of covers. Each cover was viewed by between 29 and 37 participants. The covers with the highest levels of agreement among panel members (91.89%) were chosen to represent the traditional attractive and traditional unattractive levels in the experiment and are represented in Appendix A along with the cover chosen for all-text. A summary of ratings for all book covers presented for validation is in Table 4.

Table 4: Summary of votes for book covers chosen for initial validation

Book Title	# Votes Attractive	# Votes Unattractive	Assessment
The Atopia Chronicles	34	3	91.89%
The Dragonriders of Pern	3	34	91.89%
Heris Serrano	4	33	89.19%
The Door into Summer	4	33	89.19%
SteampunX	4	26	86.67%
The Time Traveler, Smith	4	26	86.67%
Half Way Home	32	5	86.49%
Kill City Blues	32	5	86.49%
The Killing Moon	24	6	80.00%
The Honor of the Queen	8	29	78.38%
The Golem and the Jinni	28	9	75.68%
The Naked God	10	27	72.97%
The Keys to the Realms	21	8	72.41%
The Man in the High Castle	11	26	70.27%
Foundation	12	25	67.57%
Linkershim	25	12	67.57%
Molly Fyde	12	25	67.57%

Table 4 cont.

Book Title	# Votes Attractive	# Votes Unattractive	Assessment
Lexicon	13	24	64.86%
Neverwhere	24	13	64.86%
Blood of Dragons	19	11	63.33%
Alas, Babylon	23	14	62.16%
Practical Demonkeeping	12	18	60.00%
Animal Farm	22	15	59.46%
Tower Lord	16	11	59.26%
Cress	17	12	58.62%
Chosen	16	21	56.76%
The Princess Bride	20	17	54.05%
The First Completely Electronic Robot and Science Fiction Limerick Book	14	16	53.33%
Nexus	18	19	51.35%

2A.3 Prepare offerings

The offerings were presented to participants in an online survey.

Respondents were shown one combination at a time, during which they rated the offering between 1 and 5, where a rating of 1 signified that interest in the book was “very low” and a rating of 5 signified that interest in the book was “very high.”

Step 2B: Prepare User Interface

The following steps were taken to prepare the survey instrument. Figure 5 provides an overview of the process used to select and validate the user interface.

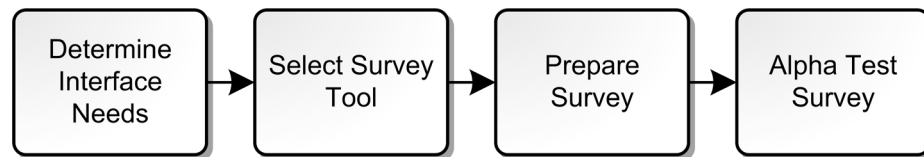


Figure 5: Overview of Step 2B: Prepare User Interface

2B.1 Determine interface needs

The experiment required that the platform be able to display images (offerings). As each offering is displayed, the interface needed to provide a mechanism for collecting the participant's preference rating for that offering. Finally, the platform needed to deliver the survey to remote participants equipped with nothing more than a standard web browser.

2B.2 Select survey tool

As RIT has a Survey Monkey license and it met the requirements of the experiment, this Internet survey tool was used for the experiment.

2B.3 Prepare survey

A survey was created on Survey Monkey. Participants were introduced to the survey and provided with instructions as well as shown a legal disclosure

statement before continuing into the survey. The survey design included two screening questions to ensure that the sample pool of participants would be familiar with the reading format and genre of book covers they would be shown.

The screening questions were:

1. Do you read science fiction and/or fantasy?
2. Do you read e-books using a Kindle, Nook, computer, tablet, or other device?

Once through screening, participants were asked if they routinely click on e-book covers during the process of making e-book purchases. Based on the participant's answer to this question, the participant was shown either the thumbnail offering (for those who answer "No") or the "full" cover offering (for those who answer "Yes")¹. Both versions of the survey displayed the 12 offerings in the same randomized sequence shown in Table 3.

2B.4 Alpha test survey

Once the survey was created, the researcher took the survey to ensure that it worked as planned. The secondary advisor, Professor Robert Eller, also tested the survey.

¹ Due to a malfunction in the skip logic for the survey, some of the participants who said that they did not click on thumbnails to view the larger sized cover images were shown both the thumbnail version of the survey and the full-size version of the survey. Because the thumbnail version (which the participants selected) was shown first, this malfunction did not contaminate the results. Responses to the questions displaying full-size covers were discarded for these participants.

Step 3A: Conduct Pilot Experiment

The following steps were taken to conduct the pilot experiment. Figure 6 provides an overview of the steps involved in conducting the experiment.

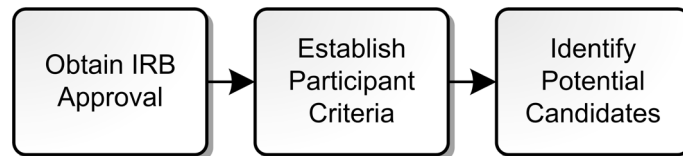


Figure 6: Overview of Step 3A: Conduct Pilot Experiment

3A.1 Obtain RIT Institutional Review Board approval

To conduct any experiment using human subjects, the Rochester Institute of Technology requires that all researchers obtain permission from the Institutional Review Board (IRB) prior to conducting said study. On March 11, 2014, a Form A: Request for IRB Review of Research Involving Human Subjects was prepared and an electronic copy of the completed form submitted, along with a signed hard copy, to the Human Subject Research Office (HSRO). Approval to commence the survey was granted on March 31, 2014.

3A.2 Establish participant criteria

For this experiment, respondents were limited to active consumers of science fiction or fantasy and consumers of e-books. Because it is desirable to collect responses from a wide range of consumers, the experiment was not

further limited by age, gender, or other factors, though basic demographic data (age group and gender) was collected for data analysis purposes.

3A.3 Identify potential candidates

The candidate pool was open to all who were interested in and willing to take the survey. The researcher's network of individuals who share her interest in fantasy and science fiction were specifically invited to participate. Participants were solicited by posting a request on writing-based online groups that the researcher frequents and on Facebook. Typical participants were expected to be readers and possibly writers of science fiction and/or fantasy genre books. At the time of the survey's close, there were a total of 96 respondents to the survey.

Step 3B: Select Participants

The following steps were taken to select participants for the experiment.

Figure 7 provides an overview of the participant selection process.

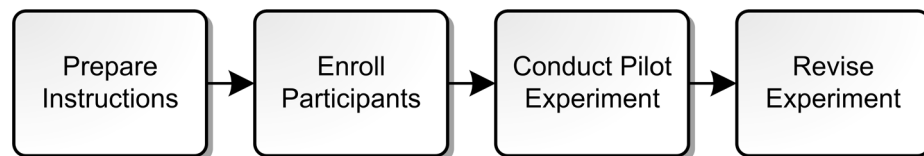


Figure 7: Overview of Step 3B: Select Participants

3B.1 Prepare instructions and online survey for respondents

Upon clicking on the survey link, respondents were shown instructions on how to take the survey. The instruction text explained the process of the survey and how to consider the offerings.

3B.2 Enroll participants in pilot experiment

A fellow graduate student and two of the researcher's friends were asked to take the survey experiment as a pilot test.

3B.3 Conduct pilot experiment

During the pilot experiment, the pilot experiment participants were observed while taking the survey. Feedback received during the pilot test indicated that participants might be confused to see the same book cover represented more than once during the experiment.

3B.4 Revise experiment based on participant feedback

To mitigate the potential for confusion resulting from seeing the same book cover repeated in the experiment, the researcher adjusted the instructions to emphasize that respondents would see the same books in a variety of price and rating contexts.

Step 4: Conduct Experiment

The following steps were taken to conduct the experiment. Figure 8 provides an overview of this step.



Figure 8: Overview of Step 4: Conduct Experiment

4.1 Enroll participants in experiment

The survey was advertised to potential participants using Facebook and writing groups on the platform Livejournal. Participants were enrolled in the study by navigating to the survey link and agreeing to take the survey. After agreeing to take the survey, respondents were asked whether or not they read science fiction and/or fantasy and whether or not they purchased e-books. If the respondent chose “Yes” to both questions, he or she was enrolled and moved into the survey. A respondent who chose “No” to either question was thanked and exited without completing the survey.

4.2 Conduct experiment

Once enrolled, participants were asked if they routinely click on cover thumbnails when they shopped for an e-book. The participant was presented with a “thumbnail only” or “full-size cover” survey based on the answer to this

question. Finally, enrolled participants were shown offerings and asked to complete the survey by recording their preference score for each offering.

4.3 Collect results

When participants completed the survey, their responses were saved automatically by the Survey Monkey platform. When the survey closed, all responses were transferred to an Excel spreadsheet to be sorted and analyzed.

Step 5: Analyze Results

The following steps were taken to analyze the experiment results. Figure 9 provides an overview of the analytical process.



Figure 9: Overview of Step 5: Analyze Results

5.1 Analyze results

Individual participant data was analyzed using a multivariate linear regression to determine (1) the significance of the regression model, (2) the R^2 of the regression model, and (3) the part-worth of each attribute and level. These results were summarized in a table.

5.2 Interpret results

Tabulated results were further analyzed to determine if participants could be grouped based on the relative importance of individual attributes in their overall preference for an offering.

Individual attributes were further analyzed to determine if they were statistically significant, and in particular, the relative utility of the three book cover designs.

5.3 Discuss results

Experimental results were discussed against the background of previous research (e.g. the importance of price, cover, and rating for e-books versus paperbacks). Opportunities for further research were identified.

Chapter 6

Results

The experiment described in the methodology section was carried out between April 7, 2014 and April 24, 2014. The following results were obtained.

Pilot Experiment

The pilot experiment was launched on April 7, 2014 and concluded on April 9, 2014. Three people tested the survey for the pilot experiment. The purpose of the pilot experiment was to find and correct any issues that might have caused respondents confusion, created an unintentional bias, or prevented the survey experiment from being completed.

During the pilot experiment, the researcher observed, but did not interact with, the participants. At the conclusion of each participant's test of the survey, the researcher interviewed the respondent to identify areas that required improvement. Feedback received during the pilot experiment indicated that participants might be confused to see the same book cover represented more than once during the experiment. To correct this issue, the researcher adjusted the instructions to emphasize that respondents would see the same books in a variety of price and rating contexts. The data collected during the pilot experiment was discarded prior to beginning the full-scale experiment, and not used in the final experiment analysis.

Full-Scale Experiment

Data Collection

The full-scale experiment was launched on April 10, 2014 and remained open until April 24, 2014. The experiment survey had an unexpectedly high rate of response to the survey. There were a total of 96 responses to the survey.

Data Scrubbing

Participants who did not match the character of the target population were eliminated. Of the 96 responses received, 17 were disqualified by the screening questions and 6 did not complete the entire survey and were therefore removed from the results, leaving a total of 73 completed surveys. A further 21 respondents were removed because their responses (valuing only one attribute) indicated that they did not understand the spirit of the experiment or did not understand the instructions. The majority of these (18) only valued *cover* and based their ratings only on one of the cover levels, leading the researcher to believe that they misunderstood the intent of the experiment. These respondents were termed “questionable experimental subjects”. This adjustment reduced the number of valid survey responses to 52.

Assessment of Participant Preference Models

Since the raw data alone could not be used to answer the Research Questions, it was necessary to process it through a statistical model. In conjoint

analysis, multiple linear regression is used to create a separate preference model for each participant. Before interpreting the results of these models to answer the Research Questions, the researcher assessed the meaningfulness of the models used to produce the results.

The statistic used to assess the preference models was the F-Test. In the F-Test, the multiple linear regression equation is used to generate a predicted preference for each offering. These predictions are then compared to the participant's actual preferences and the comparison is tested to determine if the relationship between the predictions and actual preferences could have occurred by chance (the null hypothesis). If the predictions of the model are strongly related to the underlying preference behavior of the participant, this hypothesis is rejected and the model can be used as meaningful representation of the participant's preference behavior.

The F-Test demonstrated that there was a real relationship between participant preferences and the predictions of the multiple regression model, with a significance level of 90%+ for 48 of the 52 respondents. The four responses that failed the F-Test were removed from the sample. The resulting 48 valid experimental responses constituted the sample population used in the experiment. Table 5 provides a listing of the responses removed from the initial population during data scrubbing and assessment of the models. Reason codes used in this table are: disqualified by the screening questions (DQ), incomplete survey (Incomplete), not statistically significant (F-Test), or questionable experimental subject (QES).

Table 5: Summary of removed respondents

Participant #	Reason	Participant #	Reason	Participant #	Reason
1	DQ	34	QES	60	DQ
4	DQ	35	DQ	61	DQ
8	DQ	42	QES	62	QES
10	QES	43	QES	63	Incomplete
12	DQ	44	Incomplete	64	DQ
13	DQ	45	F-Test	65	Incomplete
14	QES	47	F-Test	68	Incomplete
15	F-Test	48	QES	69	QES
16	Incomplete	49	QES	70	QES
18	QES	51	DQ	77	QES
20	QES	52	DQ	80	QES
22	DQ	53	Incomplete	86	QES
25	QES	55	DQ	89	DQ
27	DQ	56	QES	90	QES
32	QES	58	F-Test	93	QES
33	DQ	59	DQ	95	QES

The respondents who were included in the experimental analysis are displayed in Table 6 together with their F-Test statistics, F-Test level of significance, and R^2 statistics. The R^2 statistic assesses the percent of the participant's preference behavior that is explained by the multiple regression model (i.e. the percent of the unexplained difference between the actual preference score assigned to an offering and the average preference score assigned by the participant which is explained by the model). The R^2 statistic demonstrated that the multiple regression model for the participants included in the experiment explained most (between 69 and 100 percent) of the participants' preference behavior.

Table 6: Summary of significance level and R2 values for experiment participants

Participant #	F-Test Statistic	SL	R2	Participant #	F-Test Statistic	SL	R2
23	--> ∞	99%	1.00	30	19.25	99%	0.92
41	--> ∞	99%	1.00	37	19.25	99%	0.92
6	78.75	99%	0.98	76	19.16	99%	0.92
31	78.75	99%	0.98	82	18.42	99%	0.91
7	65.00	99%	0.97	72	16.63	99%	0.90
38	59.00	99%	0.97	81	15.27	99%	0.90
3	57.75	99%	0.97	74	13.56	99%	0.89
85	55.13	99%	0.97	73	13.13	99%	0.88
28	52.85	99%	0.97	2	11.61	99%	0.87
11	49.00	99%	0.97	40	9.75	99%	0.85
17	47.00	99%	0.96	84	8.75	99%	0.83
29	41.00	99%	0.96	36	7.64	98%	0.81
83	41.00	99%	0.96	66	7.64	98%	0.81
78	31.50	99%	0.95	19	7.25	98%	0.81
54	30.55	99%	0.95	9	7.00	98%	0.80
94	29.75	99%	0.94	92	7.00	98%	0.80
96	29.75	99%	0.94	26	6.8	98%	0.80
91	27.75	99%	0.94	50	6.13	98%	0.78
75	25.81	99%	0.94	57	6.01	95%	0.77
71	25.55	99%	0.94	67	5.89	95%	0.77
87	25.00	99%	0.93	24	5.00	95%	0.74
88	25.00	99%	0.93	5	4.57	95%	0.72
39	23.58	99%	0.93	46	3.96	90%	0.69
79	21.64	99%	0.93				
21	21.37	99%	0.92	Average			0.90

Research Question 1: Relative Importance of Attributes

The first research question was to determine the relative importance of book cover, price, and rating (word-of-mouth) to consumers selecting e-books for purchase. The multiple linear regression model provides a value (part-worth) for each level of each attribute included in the experiment. Because Research Question 1 was only concerned with the relative importance of the attributes, part-worth data for the two levels of cover was combined to show the total part-worth impact of cover (the range of value added from the least preferred to the most preferred cover). This data was combined with the part-worth impacts of price and rating to generate price, rating, and cover impacts for each participant. To make this data comparable across participants, these values were then converted to the percentage of each participant's valuation attributable to price, cover and rating. Table 7 summarizes the data used to answer this question.

Table 7: Part-worths and percentages of participant valuations for cover, price, and rating

Participant #	Part-Worth			Percent		
	Price Impact	Rating Impact	Cover	Price Impact	Rating Impact	Cover
23	1.00	0.00	2.00	33%	0%	67%
41	1.00	0.00	3.00	25%	0%	75%
6	0.67	0.00	3.50	16%	0%	84%
31	0.67	0.00	3.50	16%	0%	84%
7	-0.17	0.17	3.25	5%	5%	91%
38	1.17	1.17	2.75	23%	23%	54%
3	1.33	0.00	2.50	35%	0%	65%
85	-0.33	0.00	3.00	10%	0%	90%
28	0.33	0.33	3.50	8%	8%	84%
11	-0.17	0.17	2.75	6%	6%	89%
17	1.83	1.17	0.75	49%	31%	20%
29	0.17	-0.17	2.25	7%	7%	87%
83	-0.17	-0.17	2.25	7%	7%	87%
78	0.50	1.50	1.50	14%	43%	43%
54	-0.50	0.17	2.50	16%	5%	79%
94	0.33	0.33	2.25	11%	11%	77%
96	0.33	0.33	2.25	11%	11%	77%
91	0.33	1.00	2.50	9%	26%	65%
75	0.67	0.33	3.50	15%	7%	78%
71	0.00	0.33	3.00	0%	10%	90%
87	0.83	0.17	1.75	30%	6%	64%
88	0.83	-0.17	1.75	30%	6%	64%
39	1.17	0.17	2.75	29%	4%	67%
79	0.17	-0.50	2.25	6%	17%	77%
21	0.17	0.83	2.75	5%	22%	73%
30	0.67	0.00	1.50	31%	0%	69%
37	0.33	0.67	2.75	9%	18%	73%
76	0.17	0.17	2.75	6%	6%	89%
82	1.17	0.17	2.50	30%	4%	65%
72	0.33	0.00	1.50	18%	0%	82%
81	-0.17	0.50	1.75	7%	21%	72%

Table 7 cont.

Participant #	Part-Worth			Percent		
	Price Impact	Rating Impact	Cover	Price Impact	Rating Impact	Cover
74	0.67	0.33	2.00	22%	11%	67%
73	0.33	0.00	1.50	18%	0%	82%
2	0.67	0.33	2.25	21%	10%	69%
40	0.00	-0.33	1.75	0%	16%	84%
84	-0.67	0.00	1.50	31%	0%	69%
36	0.67	1.00	2.00	18%	27%	54%
66	0.50	0.17	1.25	26%	9%	65%
19	-0.33	0.00	1.50	18%	0%	82%
9	-0.33	0.33	2.00	12%	12%	75%
92	-0.17	0.17	1.00	13%	13%	75%
26	1.17	0.50	1.75	34%	15%	51%
50	0.33	0.00	1.00	25%	0%	75%
57	1.50	0.17	2.25	38%	4%	57%
67	0.17	1.17	0.75	8%	56%	36%
24	0.17	0.17	0.75	16%	16%	69%
5	0.83	0.50	1.00	36%	21%	43%
46	-0.17	0.00	1.25	12%	0%	88%
Average				17%	10%	73%

Book cover stood out as the most significant attribute, contributing an average of 73% of the total value the participants placed on an offering. Price followed with an average of 17%. Finally, rating was deemed the least significant attribute, contributing only 10% to the value of an offering.

Research Question 2: The Relative Utility of Alternative Covers

The second research question asked what the relative utility (part-worth) of traditional attractive, traditional unattractive, and all-text book covers to

consumers of fantasy or science fiction e-books were. Table 8 summarizes the part-worths that participants attributed to the three levels of cover.

Table 8: Summary of participant valuations of Attractive and All-Text covers

Participant #	Attractive Cover Impact	All-Text Cover Impact	Participant #	Attractive Cover Impact	All-Text Cover Impact
23	2.00	0.00	21	2.75	0.50
41	3.00	0.00	30	1.50	1.50
6	3.00	-0.50	37	2.75	0.25
31	3.50	0.50	76	0.50	-2.25
7	2.00	-1.25	82	-1.25	-2.50
38	1.75	-1.00	72	0.00	-1.50
3	2.50	0.00	81	1.75	1.50
85	0.50	-2.50	74	1.50	-0.50
28	1.75	3.50	73	1.00	-0.50
11	2.75	0.75	2	2.25	1.50
17	0.75	0.00	40	1.00	-0.75
29	2.25	0.00	84	0.75	-0.75
83	2.25	0.00	36	1.75	-0.25
78	1.50	0.00	66	0.50	-0.75
54	2.50	0.25	19	0.75	-0.75
94	2.25	2.25	9	-0.50	-2.00
96	2.25	2.25	92	0.75	1.00
91	2.25	-0.25	26	1.25	-0.50
75	3.00	1.50	50	-0.50	-1.00
71	3.00	0.00	57	2.25	2.25
87	1.00	-0.75	67	0.50	-0.25
88	1.75	1.00	24	0.75	0.00
39	-2.75	-0.50	5	1.00	0.75
79	2.25	0.75	46	1.25	0.25

The traditional attractive cover had the highest value with an average part-worth of 1.48 for all participants. The incremental utility of an all-text cover was negligible at 0.03, and unattractive, the experiment's base case, was by default 0.00.

Chapter 7

Discussion and Conclusion

Interpretation of Attribute Importance

The most striking aspect of the experiment was the overwhelming importance of book covers to the participants assigning preferences to e-books in a simulated e-commerce environment. Figure 10 shows this effect graphically. In this figure, participants are categorized in terms of the attribute that they valued most. If a second attribute contributed at least half as much value as the primary attribute, the participant was categorized as having primary and secondary attributes (e.g. Cover & Price). As Figure 10 shows, cover was the primary value-creating attribute for 46 of the 48 participants, which constitutes 96% of participants.

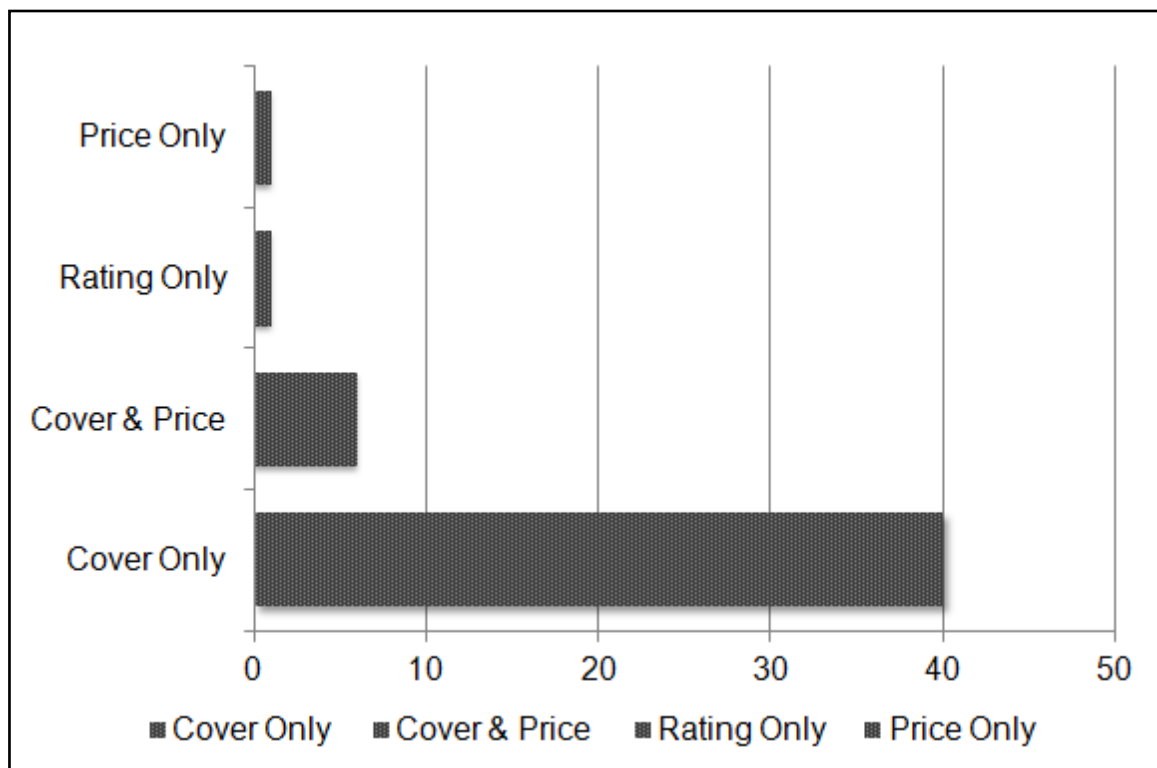


Figure 10: Categorization of participants by attribute valued most

The extremely high value placed on cover and the much lower value placed on price caused the researcher to question where the result was real or an artifact of the experimental design. Fortunately, Schmidt-Stölting et al. had conducted a similar study to determine the factors most important to consumers when purchasing physical books in brick and mortar bookstores.

Table 9 compares the results obtained by Schmidt-Stölting et al. to the ones obtained in the present research. The Schmidt-Stölting et al. analysis included more attributes than the present research, but the attributes used in this experiment can be related to attributes used by Schmidt-Stölting et al. The

attributes of cover and price have direct counterparts in the Schmidt-Stölting et al. Rating, on the other hand, requires an explanation. The Amazon 5-star rating system is based on the opinions of readers who are not professional critics. In the brick-and-mortar world, there is no formal system to capture reader opinions, however, Schmidt-Stölting et al. included an attribute called “word-of-mouth,” and this attribute was interpreted to be the counterpart of rating.

Table 9: Interpretation of attribute preferences between Schmidt-Stölting et al. study and present research

	Contribution to e-Book Value			
	Schmidt-Stölting et al. Study		Present Research	
	% Total Value	Significance	% Total Value	Significance
Cover	74%	Very High 99%	73%	Very High (47/48 > 95%)
Rating (Word-of-Mouth)	20%	High 95%	10%	Low (6/48 > 95%)
Price	5%	Not Significant	17%	Moderate (20/48 > 95%)

The results displayed in Table 9 were analyzed for statistical significance. The Schmidt-Stölting et al. study reports the results of a multiple linear regression of attributes versus book sales. As such, the significance of each variable can be tested directly using a T-Test. When Schmidt-Stölting et al. applied this test to the attributes listed in the table, cover was significant at the 99% level, word-of-mouth was significant at the 95% confidence level, and price was, surprisingly, not significant. In the present research, a separate multiple linear regression

model was created for each participant, so the T-Test must be applied at the participant level instead of being applied to the overall study result. This was done by testing each attribute in the participant models for significance at the 95% level, then counting the number of participant models where the attribute was significant. As Table 9 shows, cover was significant in 47 of 48 participant models, price was significant in 20 of 48, and rating was only significant in 6 of 48 models.

When the present research is compared to the Schmidt-Stölting et al. study, the results are quite consistent. Cover is by far the greatest contributor to preference (74% in Schmidt-Stölting et al. and 73% in the present research). Price, on the other hand, is a relatively weak contributor to preference (5% in Schmidt-Stölting et al. and 17% in the present research). The similarity of these results increased the researcher's confidence in the validity of the experimental methodology used in the present research.

Interpretation of Cover Preferences

At the beginning of the experiment, participants were asked if they typically only looked at thumbnails of the cover design or if they clicked through to see full-size covers in their normal shopping behavior. Based on the participant's answer to this question, the offerings that the participants were shown displayed either thumbnail or full-size covers. Of the 48 participants included in the final experiment, exactly half (24) said that they typically click on

a thumbnail version of a book cover when shopping online in order to view the full-size book cover. These participants were shown full-size offerings. The other half said that they do not typically click on thumbnail versions to view the full-size book cover, and these participants were shown offerings with a thumbnail version of each cover.

Further analysis was conducted to determine if viewing the thumbnail or full-size covers had an effect on the value of cover in participant preferences.

Approach

Data for each group was analyzed by creating a histogram from the part-worths that members of that group assigned to each of the three covers. Figure 11 summarizes the value placed on book covers by participants who only viewed the thumbnail version of each offering and Figure 12 summarizes this for participants who viewed full-size cover offerings.

Cover can have a positive, negative, or neutral impact on preference. The histograms reflect this fact by grouping the part-worths assigned by members of the group into five bins: -3 (<-2.25, strongly negative), -1.5 (-2.25 to -.75, moderately negative), 0 (-.75 to +.75, neutral), +1.5 (+.75 to +2.25, moderately positive), and +3 (>2.25, strongly positive). The bins were chosen so that part-worths in the lower two bins and the upper two bins are statistically different from zero (i.e. really negative or really positive) based on the results of a T-Test. A part-worth was deemed significantly different from zero if its value was

more than 2.44 standard errors of the estimate from zero (where 2.44 is critical value for a T-Test at the 95% confidence level based on a T Distribution with 7 degrees of freedom: 12 offerings minus 4 attribute levels minus 1).

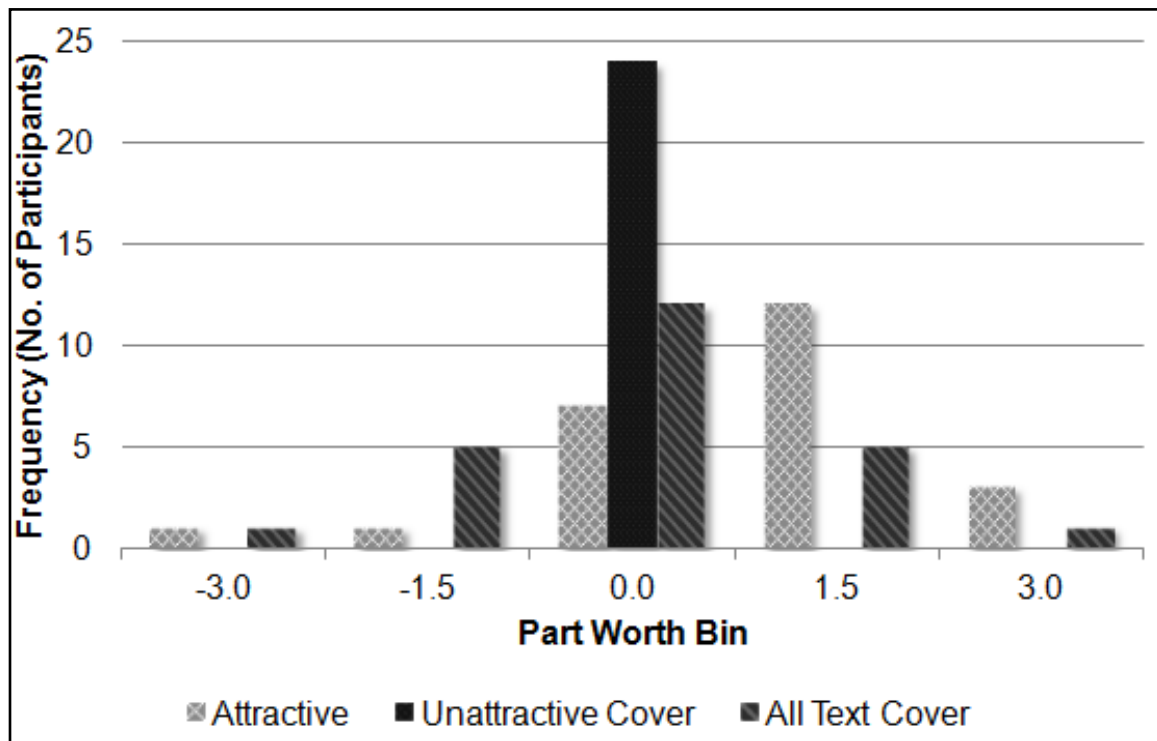


Figure 11: Value placed on book cover by those who viewed thumbnails

Thumbnail

Of the 24 participants who viewed the thumbnail cover offerings, half (12) assigned the all-text cover a part-worth that was significantly different than zero. Among these participants, half thought that the all-text cover was better than the traditional unattractive cover, and half thought it was worse. Most (17 of 24) participants who viewed the thumbnail offerings assigned the traditional attractive

cover a part-worth that was significantly different than zero, with 15 saying it was better and 2 saying it was worse.

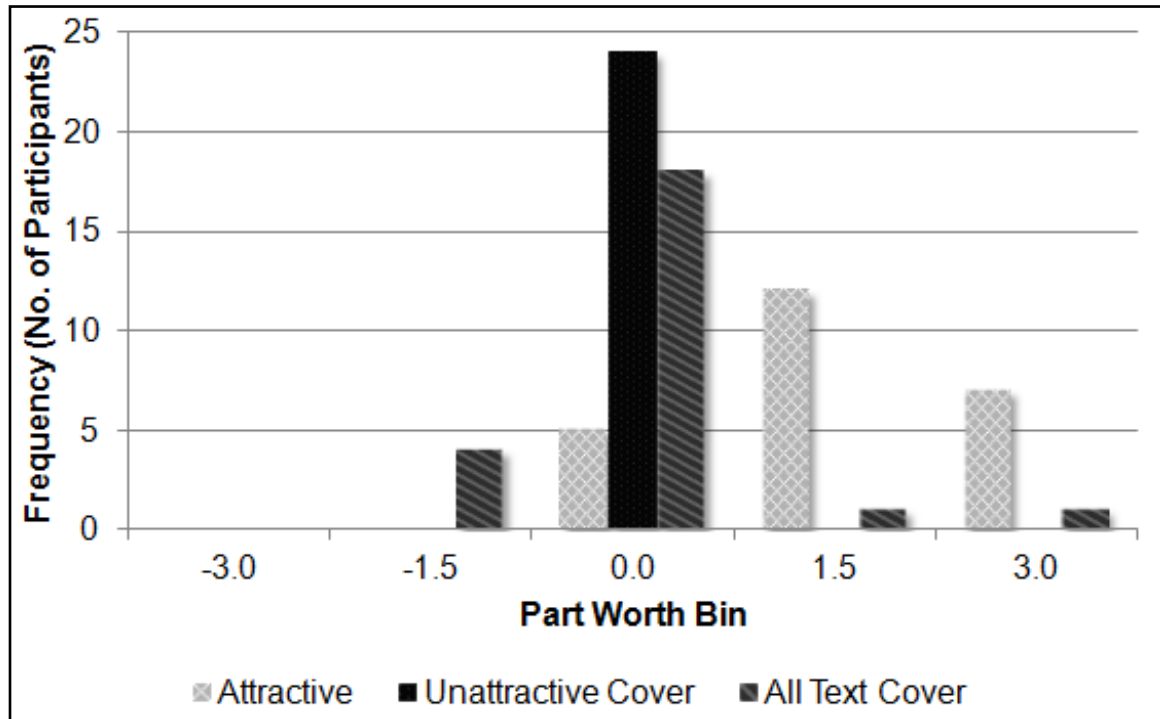


Figure 12: Value placed on book covers by those who viewed full-size covers

Full-size

Of the 24 participants who viewed the full-size cover offerings, 19 (79%) thought that the traditional attractive cover had real value, and this value was uniformly positive. Interestingly, when the cover was viewed as a full-size image, only two participants thought that the all-text cover was better than the base case (traditional unattractive), while four believed that it was worse than the base case. A majority (18) of the participants thought that the all-text cover was not statistically different from the base case when viewed full-size.

Conclusion

The objective of this Thesis was to determine the relative value of cover design, price, and customer rating (e-book attributes) to consumers of science fiction or fantasy e-books. Conjoint Analysis was chosen as the approach used to fulfill this objective. Offerings comprising twelve combinations of cover designs, prices, and ratings were presented to potential participants in an Internet survey simulating an e-book retailing environment. A total of 96 participants responded to the invitation to participate in the survey. Following data scrubbing and statistical validation, a total of 48 meaningful and statistically significant responses were selected as the sample population for conjoint analysis.

The motivation for this research was that the way we shop for digital books is different from the way we shop for print books. We can no longer touch the book cover if we are examining an e-book, and the cover itself is often represented by a thumbnail image that greatly diminishes the amount of detail visible in the cover design. This led authorities to take positions as different as “[Book covers are] dead because the way we touch digital books is different than the way we touch physical books,” (Mod, 2012), and “[Typographic covers] are one way to go,” (Bridle, 2010). Images have the ability to influence the way people think. As Barthes indicated (Barthes, 1977a), there are messages inherent in all images, especially marketing images like book covers.

The principal conclusion of the conjoint analysis experiment is that book covers are emphatically not dead. Overall, participants in this experiment

assigned 73% of the total value of the offering to cover design (compared to 17% for price and 10% for rating). This percentage is highly consistent with the Schmidt-Stölting et al. study of the German brick-and-mortar book market. While the Schmidt-Stölting et al. study included many more variables than the present research, for the three variables considered in this research, book covers were responsible for 74% of the value perceived by the consumer.

The researcher presented participants with three covers: a traditional attractive cover, a traditional unattractive cover, and an all-text cover. A separate experiment presented 27 actual book covers to a sample of 30+ participants. The covers selected as “attractive” and “unattractive” were chosen based on the results of this experiment. Over 90% of the participants agreed that the traditional attractive cover was appealing and that the traditional unattractive cover was unappealing.

Based on the results of the experiment, the traditional attractive cover was strongly preferred to both the traditional unattractive and the all-text cover. Even among participants who only viewed thumbnail images (24 of 48), 63% found that the traditional attractive cover added significant value to an offering, versus 8% who thought it reduced the value of an offering. Among participants who viewed full-size cover images (24 of 48), 79% of the participants thought that the traditional attractive cover added value to an offering, and none of the participants thought that it reduced value. On the other hand, participants who only viewed thumbnails were split on the value added by the all-text cover (6

negative, 12 neutral, and 6 positive). Among participants who viewed full-size cover images, the overall perception of the all-text cover was slightly negative (4 negative, 18 neutral, 2 positive).

Future Research

Two avenues for further research were identified based on the results and limitations of the present research: a sales-based approach similar to that which was done with paperbacks in the Schmidt-Stölting et al. study, or creating a more realistic conjoint study.

Sales-based

As the e-book market matures, actual sales data may become more available. This data could then be analyzed using a methodology similar to the one employed by Schmidt-Stölting et al. Using actual sales data has the advantage of capturing buyer behavior in the actual buying environment, thus overcoming the limitations inherent in the experimental approach used for this research. Of course, a great deal of effort is required to accurately attach attributes and levels to each offering for which sales data is available.

More realistic conjoint experiment

Future research using conjoint analysis should consider creating a more realistic environment. There is a trade-off between graphic consistency and experimental realism, and this experiment deliberately erred on the side of

consistency at the cost of a more realistic environment. The method used in this experiment produced useful results, but confused enough participants that 21 responses had to be eliminated from analysis because the participants didn't understand the abstractions employed in the present research.

Future research could include creating a set of artificial covers and that are tested and found to be "attractive," "unattractive," or "neutral." By creating fake book covers, the potential for title or author bias is greatly reduced and the potential to test a true attractive or neutral all-text cover is available. Further realism could be achieved by creating a website which allows users to either click-through from a thumbnail to see a full-size version of a cover or not, depending on the participant's preference. This could create a more realistic environment for the participant and result in data more aligned to real-life e-book buying situations.

Future research with a conjoint experiment may also explore the effect of using a larger sized thumbnail, in effect merging the thumbnail and full-size options into a medium-sized graphic that is large enough to read and see clearly, but small enough to show on the screen of a tablet or other mobile device.

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Appendices

Appendix A: Book Covers Used in Experiment



Figure A1: Traditional Attractive Cover

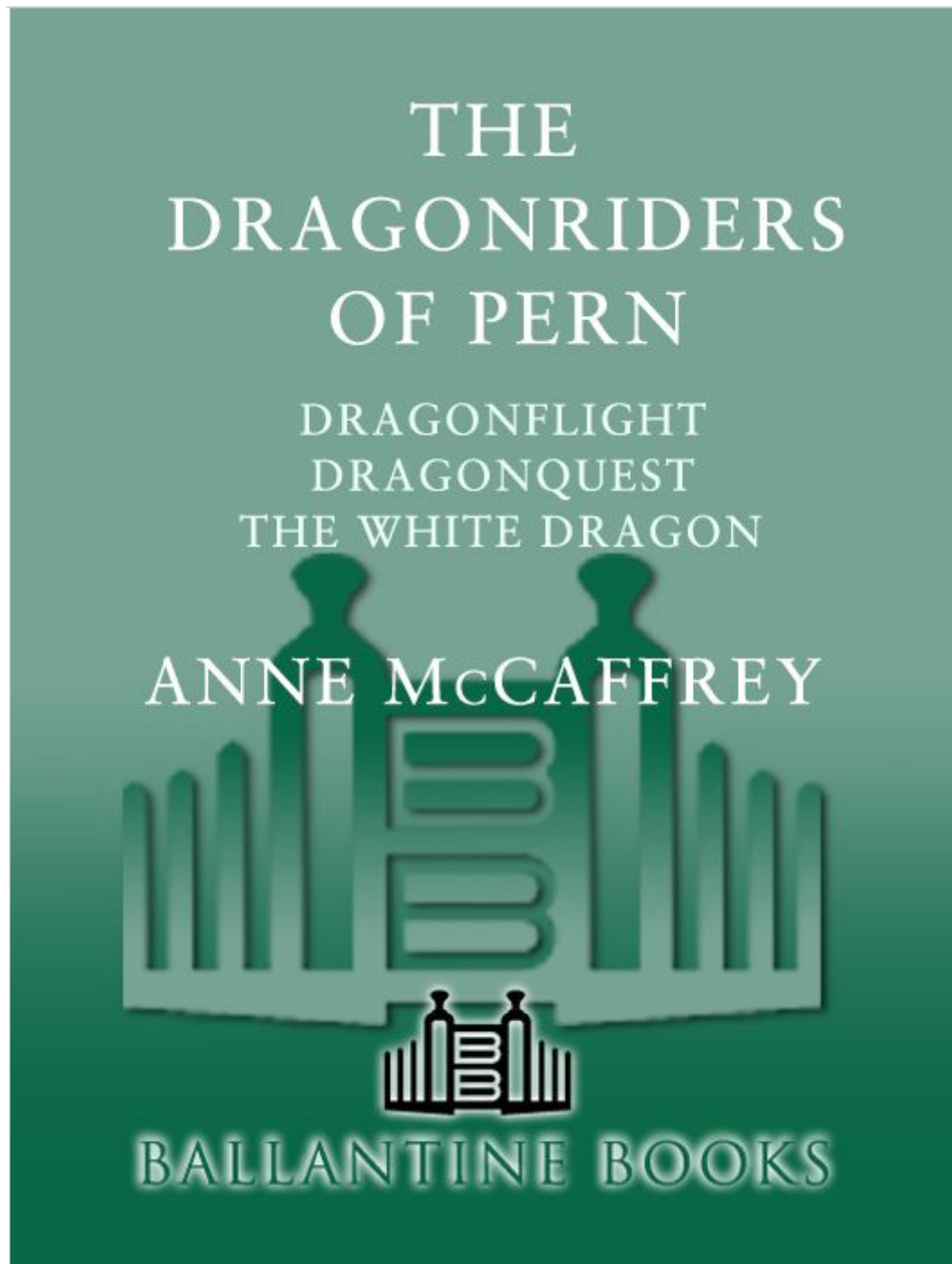


Figure A2: Traditional Unattractive Cover

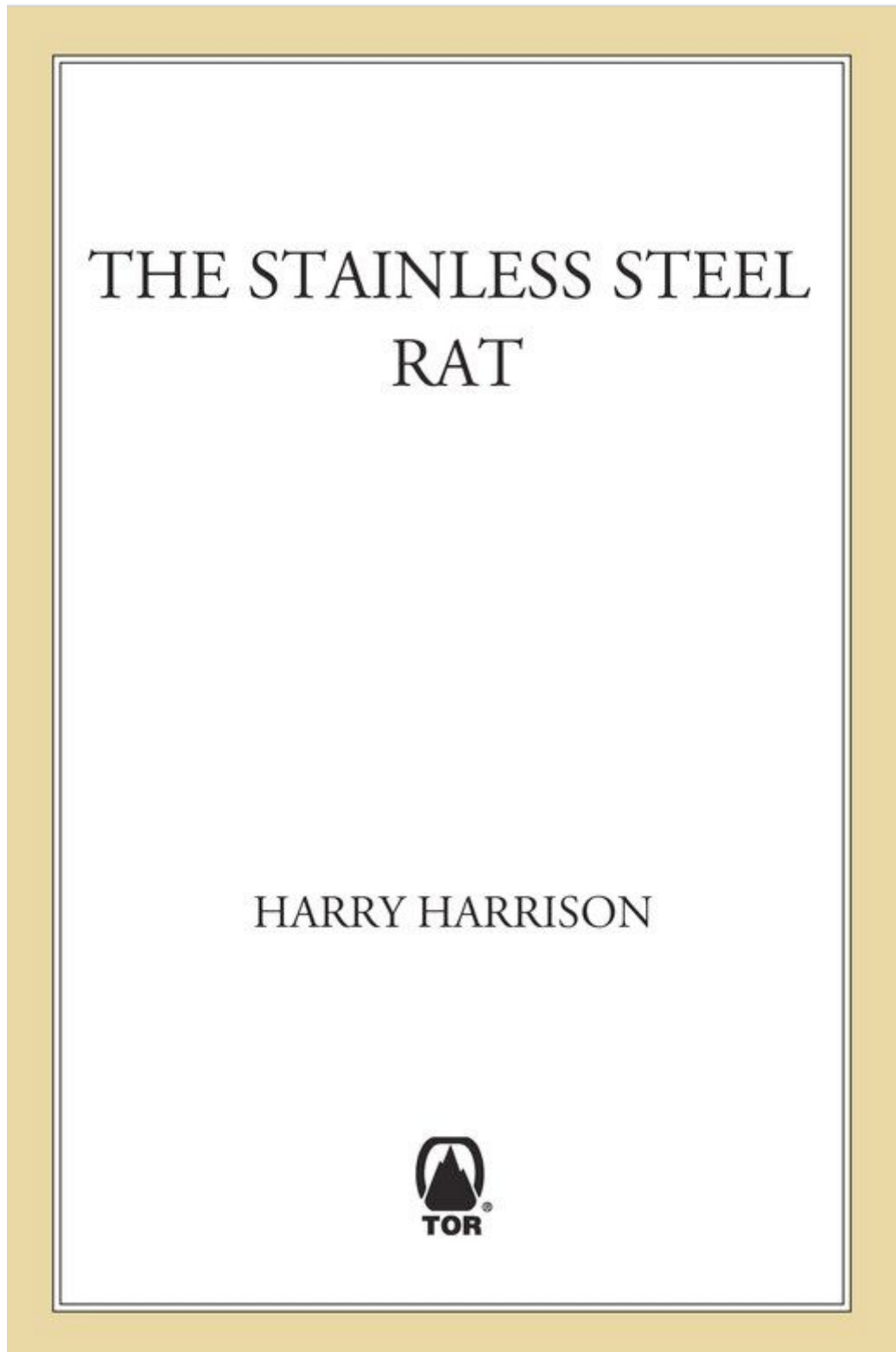
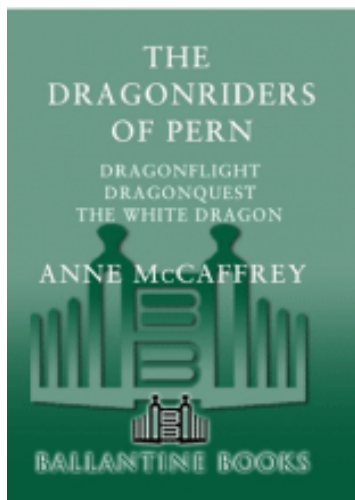


Figure A3: All-Text Cover

Appendix B: Survey Offering Examples



The Dragon Riders of Pern [Kindle Edition]



Digital List Price: ~~\$4.65~~

Print List Price: ~~\$5.98~~

Kindle Price: **\$2.99**

You Save: \$2.99 (50%)

Figure B1: Example of Thumbnail Offering

The Atopia Chronicles [Kindle Edition]



Kindle Price: \$2.99



Figure B2: Example of Full-Size Offering