Prescription Drug Brand Personality as Perceived by Consumers:

A Two-Dimensional Scale

Erica Leonard

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By: Erica Leonard

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Signed by the final examining committee:

Dr. Dennis Kira	Chair
Dr. Kemal Büyükkurt	Examiner
Dr. Bianca Grohmann	Examiner
Dr. Lea Prevel Katsanis	Supervisor

Approved by _____
Chair of Department or Graduate Program Director

_____
Dean of Faculty

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Abstract

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A Two-Dimensional Scale

Erica Leonard

Brand personality can facilitate the development of meaningful consumer-brand relationships and allow consumers to move beyond a product attribute focus. The pharmaceutical industry has faced challenging market dynamics in recent years, and the outlook for branded prescription drugs remains bleak. In light of the difficulties facing this industry, brand personality may be a valuable marketing asset. A study of 483 U.S. respondents explored the existence of prescription drug brand personalities as identified by consumers. The findings revealed that consumers are in fact able to attribute human personality traits to prescription drugs, and a stable and generalizable two-dimensional (Competence & Innovativeness) scale was established. The results of a multiple regression analysis suggested that brand personality can be created through a number of different ways, including brand familiarity, advertisement, and personal experience (usage). In addition, a significant relationship between brand personality and likelihood to request a prescription was found, providing preliminary support for the hypothesis that brand personality can influence consumer purchase behaviour. This research has important implications for the expansion of pharmaceutical branding strategies and demonstrates the potential of using brand personality as an effective positioning and differentiation tool.

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Chapter 1: Introduction

The U.S. pharmaceutical industry has witnessed turbulent times in recent years. Following robust double-digit annual growth rates, the tides have turned and industry dynamics have changed drastically. The economic recession that began in 2007 had a significant impact on the health of the industry and initiated a downward spiral. Annual growth rates in 2010 were a meager 1.9% (Zhong, 2012).

The outlook remains bleak for the brand name pharmaceutical industry. The current environment continues to be challenging due to stringent government regulations, an anticipated loss in the billions of dollars due to pending patent expiries; fierce competition from generic products; lack of blockbuster drugs in the pipeline; significant increased cost of research and development; and social media and communication advancements resulting in more informed, knowledgeable and demanding consumers who are acting as key decision makers in healthcare treatment (Blackett & Harrison, 2001; Schuiling & Moss, 2004; Hall & Jones, 2007).

The challenging market dynamics have shifted the industry's attention away from traditional marketing strategies that focused on research and development and sales initiatives. The quest for innovative strategies that bolster sales has led the industry to consider the tried and true branding tactics of the consumer goods segment. Over the years, powerhouse brands such as Apple, Coca-Cola, and Harley-Davidson have successfully leveraged brand-building strategies to develop sustainable points of differentiation. One branding strategy that has gained recognition for its success in forming meaningful consumer-brand relationships is the brand personality construct. In

light of the difficulties facing the pharmaceutical industry, brand personality may be a valuable asset.

Brand personality can be conceptualized as the symbolic meaning a brand acquires (Sung & Kim, 2010) and formally defined as "the set of human personality traits that are both applicable to and relevant for brands" (Azoulay & Kapferer, 2003, p. 151). The concept was first introduced in the 1960s (Ekinci & Hosany, 2006) and has remained central in both academia and practice for decades. The significance of this branding strategy can be understood by looking at the tangible outcomes that exist as a result of a strong and favorable brand personality, both from a marketer and consumer perspective.

Brand personality allows marketers to create a distinct and meaningful image in the minds of consumers. This allows for product differentiation (Crask & Laskey, 1990); contributes to more favorable evaluations when compared to a generic offering (Upshaw, 1995); and increases brand equity, brand loyalty and brand trust (Sung & Kim, 2010). Technological advances and stringent regulations have made it more difficult for marketers to differentiate solely on functional product attributes. Consumers expect a minimum standard of quality and there are a number of me-too and copycat brands to compete with. The creation of a unique and favorable brand personality has the potential to enhance marketing effectiveness, particularly in industries that offer generic products with similar product characteristics (Geuens, Weijters, & Wulf, 2009). Brand personality may add value and prevent substitution (Kapferer, 2012).

From a consumer perspective, brand personality allows people to connect with their brands (Keller, 1993); creates an emotional appeal (Landon, 1974); and increases

the personal meaning of a brand (Levy, 1959). In addition, it can have a positive influence on choice (Schiffman & Kanuk, 1997).

Absolute Vodka is cool, hip and contemporary. Dove is honest and feminine. Apple is young and innovative, and Levi's is rebellious and sensual (Aaker J. , 1997). These examples clearly illustrate that brands are often described as humans, endowed with personality traits. Research has consistently shown that consumers do not have any difficulty in describing their brands in terms of human characteristics (Aaker J. , 1997). Bestowing inanimate objects with human characteristics has allowed consumers to bring brands to life, build meaningful relationships (Fournier, 1998), and move beyond the functional product attribute perspective to a symbolic or self-expressive state (Keller, 1993).

Although this phenomenon has been well documented within the consumer goods sector (Aaker J. , 1997; Caprara, Barbaranelli, & Gianluigi, 2001), empirical evidence suggests that brand personality extends beyond the realm of consumer goods (Ekinci & Hosany, 2006; Ekinci & Riley, 2003; Venable, Rose, Bush, & Gilbert, 2005). The aim of this study is to examine the existence of prescription drug brand personalities as identified by consumers. Can consumers use human personality traits to describe prescription drugs such as Viagra, Lipitor, or Advair? Applying the brand personality framework to the pharmaceutical industry may have the potential to facilitate product differentiation and to create meaningful consumer-brand relationships.

Chapter 2: Research Objectives

The objective of this research is to draw on the established brand personality construct to explore the existence of prescription drug brand personalities as identified by consumers; develop a theoretical framework of prescription drug brand personality; and introduce a reliable and generalizable measurement scale. This research attempted to answer the following questions:

(i) Do consumers attribute human personality to prescription drugs?

(ii) What are the underlying dimensions of prescription drug brand personality?

A deeper understanding of the factors that influence brand personality will provide insight into how the brand personality framework can be concretely applied to the pharmaceutical industry. The benefits of brand personality may assist pharmaceutical marketers to develop targeted consumer branding strategies and facilitate prescription drug differentiation. The following secondary research questions were asked:

(iii) What factors influence brand personality?

a. Advertisement levels: Are consumers more likely to attribute brand personality to highly advertised (versus less advertised) drugs?

b. Familiarity: Are consumers more likely to attribute brand personality to highly familiar (versus less familiar) brands?

c. Personal Experience: Does personal experience with the brand (i.e. current or previous use of the drug) increase the likelihood of attributing that brand with a personality?

d. Recent Media Exposure: Does recent media exposure increase the likelihood of attributing a personality to a particular brand?

(iv) Does brand personality influence the likelihood of requesting a prescription from a physician?

Chapter 3: Literature Review

Branding is a source of competitive advantage (MacLennan, 2004). It can facilitate the shift beyond a functional product focus to an emotional level creating strong relationships with the brand (Blackett & Harrison, 2001). The American Marketing Association defines a brand as "a name, term, sign, symbol, or design, or a combination of these intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition". This outdated definition falls short in today's fierce competitive environment. Brands are no longer just about creating a point of differentiation based on physical attributes. It is an all encompassing concept that "symbolizes a long-term engagement, crusade or commitment to a unique set of values, embedded into products, services and behaviors, which make the organization, person or product stand apart or stand out" (Kapferer, 2012, p. 12).

A product offers tangible and functional benefits; however, a brand has the ability to move beyond by providing additional tangible (rational) and intangible (emotional) values (Blackett & Harrison, 2001). Brands reside in the minds of consumers and a strong brand creates a clearly differentiated position. Brands reduce perceived risk, build trust, and stimulate excitement that results in preference, long-term commitment, and prevents substitution (Kapferer, 2012). Brand assets, as defined by Kapferer (2012), include awareness, image, reputation, and perceived brand personalities. These assets will produce brand strength (market share, market leadership, loyalty and price premium) that will ultimately lead to brand value (ability for brands to deliver profits) (Kapferer).

Brand Image and Brand Identity

Brand identity is the way in which the firm wants their brand to be portrayed by the public and encompasses the brand's meaning, aim, and self-image (Kapferer, 2012). Brand image on the other hand, is the way in which the public actually perceives the brand and interprets the various communications (De Pelsmacker, Geuens, & Van den Bergh, 2007). In short, brand identity refers to the senders' message and brand image is how the recipient actually perceives that message. Image is therefore the result and interpretation of the brand identity.

There is an overall consensus among academics that brand personality is an integral part of brand identity; however, there is discrepancy with respect to the other components of the framework (Geuens, Weijters, & Wulf, 2009). For example, Aaker and Joachimsthaler (2000), define the elements of brand identity as (i) the brand as a product, (ii) the brand as an organization, (iii) the brand as a person, and (iv) the brand as a symbol. More recently, Kapferer (2012) developed the brand identity prism, a graphical representation of a brand as a speech flowing from a sender to a receiver. Six key dimensions define the prism: physique (physical features and qualities); personality (human personality traits, character); relationship (mode of conduct); culture (values); reflection (image of typical user); and self-image (how a brand makes consumers feel). While the facets of brand identity continue to be debated, the overall consensus is that brand identity, and therefore brand personality, is best understood from the sender-side, whereas brand image is best understood from the receiver side.

It is necessary to distinguish between brand identity and brand image (Azoulay & Kapferer, 2003) because interrupted communications between the sender and receiver

may result in a gap between the intended brand identity and the perceived brand image (Geuens, Weijters, & Wulf, 2009).

Brand Personality

The origins of brand personality can be directly linked to research in human psychology. Personality is a general tendency to behave consistently across various situations and can be broadly classified into five stable and enduring dimensions, referred to as the Big Five: Extroversion, Agreeableness, Conscientiousness, Emotional Stability, and Culture (Sung & Kim, 2010). There are however some fundamental differences between human and brand personality (Sung & Tinkham, 2005). Human personality can be implied by character traits and general habits, behaviours, attitudes, feelings, beliefs, demographic information, and physical appearance (Park, Jaworski, & MacInnis, 1986). Brands, on the other hand, are incapable of action and personality must be inferred by their physical attributes, functions, user imagery, and situations in which the brand is found (Sung & Kim).

Measuring brand personality. The preliminary research on brand personality was somewhat inconsistent, as a concise definition and measurement tool was lacking. Previous research relied primarily on ad hoc or human personality scales that were not validated within the context of consumer brands (Aaker J. , 1997). Although certain human characteristics can be used to describe brands, not all traits are transferrable to brands. In an attempt to fill this gap and address the limitations of prior research, Aaker (1997) developed the Brand Personality Scale (BPS).

Aaker defined brand personality as "the set of human characteristics associated with a brand" (1997, p. 347) and introduced a systematic, reliable, valid and

generalizable measurement scale. The first phases of Aaker's research focused on establishing a brand personality inventory based on human personality traits, marketing literature (academic and practitioner), and original qualitative research. A total of 309 non-redundant candidate personality traits were identified that were subsequently reduced to a more manageable number of 114 traits. The next phase of the research was to identify the brand personality dimensions as perceived by consumers. Participants were asked to imagine that the indicated brand was a person and rate the extent to which the 114 personality traits described the specific brand.

Exploratory principal component analysis and Varimax rotation resulted in a clearly identifiable five-factor solution with high loadings and communalities for each of the traits. These findings suggest that consumers perceive brands to have five distinct personalities: Sincerity, Excitement, Competence, Sophistication, and Ruggedness. Further analysis was conducted to identify the subcategories or "facets" that are representative of these five dimensions. A series of test-retests confirmed the reliability, validity, and generalizability of the scale. The final framework consisted of 42 items from 15 facets grouped into five different factors, as identified in Figure 1 (Aaker J. , 1997).

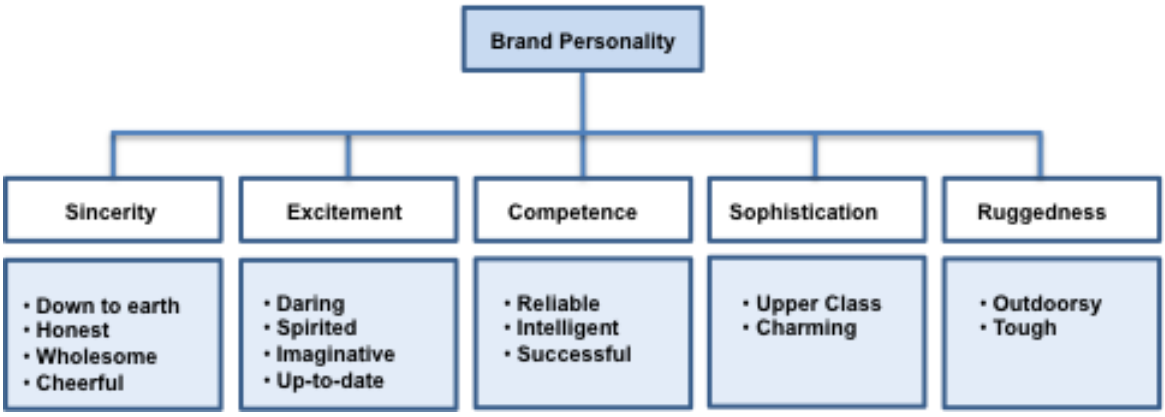


Figure 1. Dimensions of Brand Personality (Aaker J. , 1997)

Aaker's (1997) seminal research laid the foundation for subsequent investigations, and a number of empirical studies have relied on this scale to expand further on the applicability of brand personality in various consumer good product categories and across various cultures (Aaker, Benet-Martinez, & Garolera, 2001; Caprara, Barbaranelli, & Gianluigi, 2001). Recent studies have identified the existence of brand personalities in peripheral industries such as tourism (Ekinci & Hosany, 2006), not-for-profit organizations (Venable, Rose, Bush, & Gilbert, 2005), and restaurants (Ekinci & Riley, 2003).

Limitations of Aaker's Brand Personality Scale. While Aaker's five dimensional BPS has served as the leading measurement tool in the past, recent criticism (Austin, Siguaw, & Mattila, 2003; Azoulay & Kapferer, 2003) warrants the evaluation of alternative scales. Shortcomings of the scale include: (i) the methodological limitations resulting from factor analysis (Sweeney & Brandon, 2006); (ii) the scope of the scale extends beyond brand personality and includes dimensions of brand identity such as user-image and socio-demographic characteristics like age or gender (Azoulay & Kapferer); (iii) the scales do not allow for negative traits such as unreliability or selfishness (Kaplan, Yurt, Guneri, & Kurtulus, 2010); and (iv) the non-generalizability of the scale for a specific brand within a specific product category (Austin, Siguaw, & Mattila).

Alternative measures. Azoulay and Kapferer (2003) suggested that Aaker's definition of brand personality is too broad and encompasses elements of brand identity and image. They proposed a more precise definition: "brand personality is the set of human personality traits that are both applicable to and relevant for brands" (p. 151). Along with the criticism, Geuens, Weijters and De Wulf (2009) developed a new

measure of brand personality that is limited to personality traits and excludes functional attributes, demographic characteristics, user imagery, user appearance, and brand attitudes.

Geuens, Weijters and De Wulf's (2009) scale development process began with generating an extensive list of personality items taken from Aaker's BPS (using only personality traits), human personality scales, and original qualitative research. A total of 244 unique items were selected which were then evaluated to determine applicability to brands. Any traits not relevant to brands were deleted, resulting in an initial pool of 40 items. The relevance of these 40 items was assessed through a number of studies, and a final five-factor solution comprising 12 items emerged, as detailed in Figure 2.

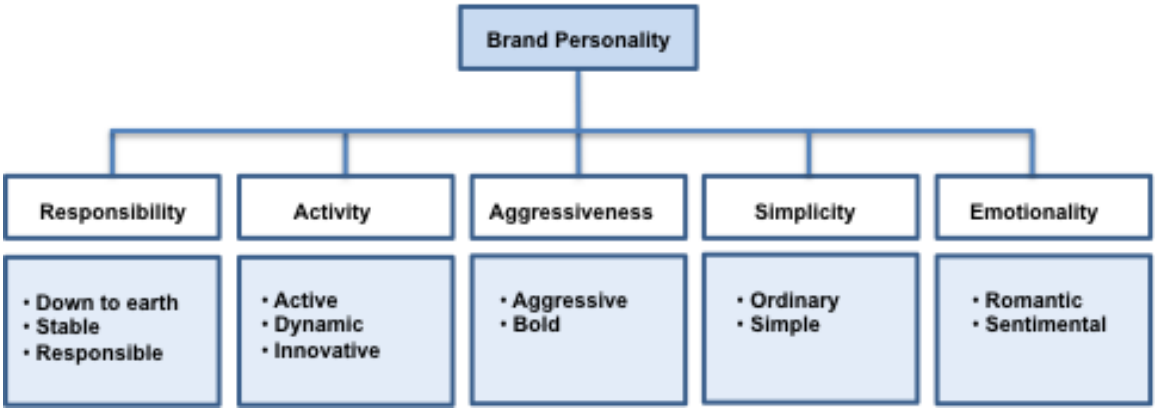


Figure 2. A New Measure of Brand Personality (Geuens, Weijters, & Wulf, 2009)

The Pharmaceutical Industry

The pharmaceutical industry is a complex industry and has unique characteristics that distinguish it from the consumer goods sector. Following several years of robust double-digit annual growth, the industry slowed dramatically in 2008, largely as a result of the economic recession that began in 2007 (Boehringer Ingelheim GmbH, 2012). The industry remains in a depressed state as sales in 2010 only grew by 1.9% (Zhong, 2012). Over the next year, the overall pharmaceutical market is expected to grow in the range of

three to four percent (Boehringer Ingelheim GmbH). Between 2012 and 2017, the brand name pharmaceutical industry will only have an annual growth rate of only 0.4% compared with the generic sector that is expected to grow at an annual rate of 6.3% (Zhong).

The industry dynamics continue to be challenging due to stringent government regulations, pending patent expiries, increased competition from generic product, lack of blockbuster drugs in the pipeline, increased costs associated with research and development, social media and communication advancements, and finally, more informed and knowledgeable consumers who act as key decision makers in healthcare treatment (Blackett & Harrison, 2001; Schuiling & Moss, 2004; Hall & Jones, 2007).

Pharmaceutical versus Consumer Goods Industry. A comparison of the pharmaceutical and consumer goods industries identified the following key points of differentiation:

Foundation for success. As proposed by Schuiling and Moss (2004), success within the pharmaceutical industry is contingent upon strong research and development, aggressive defense of patents, and powerful sales force. The prosperity of a manufacturer is heavily dependent on the depth of their manufacturing "pipeline", and historically little attention has been dedicated to the branding process (Blackett, 2001).

Product life cycle. The pharmaceutical product life cycle is very unique and short lived, measured in years rather than decades or centuries (Moss, 2008). Longevity is an advantage experienced by powerful and recognized consumer brands, however more or less non-existent in the prescription drug realm.

As a result of the significant research and development costs, patent protection was introduced in order to manage the product life cycle; protect intellectual property rights; encourage new drug development; and allow recovery for some of the costs incurred during the initial research and development stages (Kvesic, 2008). Patents were designed to guarantee exclusivity for up to 20 years, however the profit maximization period is in reality much shorter. It may take a number of years before a patented product is launched leaving a limited time of approximately 5-8 years for commercialization. Following patent expiry, these previously protected products are rarely promoted as generic competition, offered at discounted prices, capture significant market share (Moss, 2001). According to the Institute for Healthcare Informatics, a generic drug will capture 60% of a brand name drug's sales volume within six months of patent expiry (Zhong, 2012). Between 2006 and 2010, drugs that experienced patent expiry represented total loss sales of $80 billion, and this is expected to increase to $140 billion between 2012 and 2017 (Zhong).

Prescription decision. The prescribing decision is highly complex, with a number of parties interacting. Typically the product is prescribed by a physician, dispensed by a pharmacist, and used by a third party. Pharmaceuticals is a highly regulated industry, and there are a number of other factors that may influence the decision-making process, including formularies, insurance institutions, reimbursement decisions, and advice from key opinion leaders (Moss, 2008).

These significant differences between the consumer goods and pharmaceutical industries provide support for the development of a prescription drug specific brand personality scale.

Pharmaceutical versus Over-The-Counter Medications. A distinction between over-the-counter (OTC) medication and prescription drugs is necessary. OTC products can be advertised directly to consumers without restriction, they are typically not prescribed, can be purchased at will, and are not generally reimbursable by health insurers (Kapferer, 2012). Given the nature of these products, OTC medications are categorized as a consumer good, and share many characteristic. In fact, in Aaker's original research on brand personality, she included Advil (an OTC brand) as a stimulus suggesting that OTC brands are considered as consumer goods (Aaker J. , 1997). These significant differences between OTC and prescription medications provide support for the development of a prescription drug specific brand personality scale.

Direct to Consumer Advertising (DTCA)

The pharmaceutical industry has experienced some dramatic changes as a result of the legalization of direct to consumer advertising (DTCA). Due to the nature of the product and the inherent risks involved, pharmaceutical advertising is heavily regulated in order to protect consumers. Up until 1997, advertisers in the United States were only permitted to mention the name of the drug being advertised, or the medical condition that the drug was designed to treat (Polen, Khanfar, & Clauson, 2009). The legalization of DTCA in the United States has relaxed these restrictions and allowed both the medical condition and brand name to be disclosed in the same advertisement. This has had a dramatic impact on the industry and presented marketers with the opportunity and forum to connect directly with patients. DTCA has been a catalyst for the introduction of consumer focused branding practices. Although the advertising regulations have been eased in the United States, in most countries, such as Canada, it continues to be very

restrictive and advertisers are still only allowed to identify either the medical condition or the drug name, but not both.

Direct to consumer advertising continues to be a controversial issue and heavily debated amongst pharmaceutical companies, consumers, physicians, and government regulators. Following the legalizing of DTCA in the United States, advertising expenditures soared and billions of dollars are spent annually on prescription drug advertising. In 1997, total DTCA expenditure was approximately $1 billion and it has grown exponentially by nearly 400% to $3.97 billion in 2010 (PharmaLive, 2011). In 2010, Lipitor, a cholesterol-lowering therapy, was the most advertised prescription drug with a total expenditure of approximately $250 million. On an aggregate basis between 2000 and 2010, Lipitor maintained the leadership position as the most advertised prescription drug, with a total expenditure of $1.43 billion (PharmaLive, 2011).

Although DTCA continues to be criticized, those in favor suggest that DTCA educates consumers; empowers consumers to take a more active role in healthcare; increases treatment for previously undiagnosed conditions; improves public health; and reduces health care costs (Blose & Mack, 2009; National Health Council, 2002). On the other hand, critics of DTCA suggest that there may be negative consequences on healthcare relationships as physicians are pressured to acquiesce to patient demands. Research reveals that a typical doctor's visit changed drastically after the legalization of DTCA, with consumers much more likely to request a specific brand name drug (Bloom, 1999). A survey conducted by the U.S. Food and Drug Administration indicated that 47% of U.S. physicians reported feeling "a little to somewhat pressured" to prescribe the advertised drug that the patient requested and 28% of physicians said that DTCA can

adversely affect the physician-patient relationship (Thomaselli, 2003). Similarly, research conducted by Findlay (2002), commissioned by Prevention Magazine in 2000, found that 32% of respondents who had seen an advertisement for a prescription medication talked with their doctor about the advertised medicine and 26% of that group (approximate 8% of all 1,222 respondents), asked for a specific medicine. In addition, patient satisfaction, patient return intentions, perceptions on the effectiveness of the visit, and intentions to comply with the healthcare instructions can be influenced by whether a physician grants the patients' request for a particular brand (Mack, Blose, & Balaban, 2004; Robinson, et al., 2004).

Pharmaceutical Branding Strategies

Marketing strategies in the pharmaceutical industry have undergone considerable transformation in recent years, primarily as a result of the legalization of DTCA in the United States, the increased prevalence of generic drugs, and the lack of blockbuster drugs in the pipeline (Hall & Jones, 2007). Challenging market dynamics have emphasized the need to develop brands instead of molecules, and the industry has started to recognize the advantages of brand-building strategies (Blackett & Harrison, 2001; Moss & Schuiling, 2004).

Developing a brand focused marketing strategy has the potential to maximize profits; protect against similar products by creating a sustainable point of differentiation; influence key decision makers to prescribe and pay for the product; facilitate communication between the industry and consumers; and increase brand equity resulting in premium pricing and increased market share (Blackett, 2001; MacLennan, 2004). Nonetheless, once the patent has expired, a branded product does not guarantee customer

loyalty, as a number of consumers will switch to a more affordable generic option (MacLennan). Pharmaceutical companies are at a crossroads, given that blockbuster drugs such as Lipitor, Plavix and Singulair face imminent patent expiry (Zhong, 2012). The question remains whether or not these brands are capable of surviving patent expiry by creating a sustainable bond with their consumers.

Push / Pull strategies. Historically, the majority of promotional activity has been focused at the physician and pharmacist level by way of a push strategy (Pinto, Pinto, & Barber, 1998). In 2000, pharmaceutical companies spent more that $15 billion promoting prescription drugs, with the majority of the spending on doctor detailing ($4 billion), free drug samples ($8 billion), and DTCA ($2.5 billion) (Findlay, 2002). The objective of this push strategy was to provide pharmacists and physicians with the necessary information and incentive to influence their prescribing behavior and ensure that they prescribe a particular drug to a patient.

The legalization of DTCA provided a new avenue for communication directly to consumers, and marketers complemented their existing push strategies with a pull approach (Pinto, Pinto, & Barber, 1998). Direct to consumer advertising increases awareness of branded prescription drugs and directs consumers to seek information from their physician about a specific brand. The integration of the pull strategy has lead to remarkable results (Parker & Pettijohn, 2005) and millions of consumers have requested an advertised drug after being exposed to an advertisement (Handlin, Mosca, Forgione, & Pitta, 2003).

Prescription drugs as brands. In theory, prescription drugs have all the necessary elements to make it a brand, including tangible and intangible benefits such as

efficacy and trust (Schuiling & Moss, 2004). Pharmaceutical communications have focused on product-attributes, highlighting the functionality and technical aspects of the product such as efficacy, safety, convenience and cost effectiveness (Blackett & Harrison, 2001). Bell, Wilkes, and Kravitz (2000) conducted a content analysis of 320 U.S. DTC advertisements from 1989 to 1998 and identified effectiveness, symptom control, innovativeness and convenience as the most commonly used appeals.

The industry has been criticized for focusing too heavily on the product attributes and neglecting other important facades of the branding paradigm (Moss, 2001). A study by Roth (2003), found that advertising message strategy could have an effect on advertising awareness. Following an in-depth analysis of 208 unique print DTC advertisements for 36 different medical conditions, researchers concluded that advertisements should avoid presenting symptom information. Transformational messages that focus on positive end states and desired emotions are more effective in increasing awareness for a DTCA drug (Roth, 2003).

Recent findings suggest that pharmaceutical marketing strategies have in fact adopted a more emotional appeal. Frosch, Krueger, Hornik, Cronholm, and Barg (2007) conducted a study of product claim television advertisements aired in 2004 and found that 100% of ads used a rational appeal such as describing the product indication, and that almost 95% used positive emotional appeal typically depicted by a happy character after taking the medication. Approximately two thirds used a negative emotional appeal showing characters in a fearful state prior to using the product, and almost one-third incorporated humor.

Until recently, the pharmaceutical industry has focused solely on the product-attributes; therefore managing products and not brands (Moss, 2008). Pharmaceutical marketing practitioners and academics have recognized the importance of creating and managing pharmaceutical brands and are moving beyond the limited scope of the product. The competitive nature of the industry and increased prevalence of generic offerings makes it extremely difficult to differentiate on product specific characteristics. Marketers are faced with the task of creating a deeper meaning and emotional sentiment towards their brands. Blackett (2001, p. 13) stated that a powerful brand will create a competitive advantage for pharmaceuticals and "in the 21st century, branding ultimately will be the only unique differentiator between companies. Brand equity is now a key asset".

Hypothesis Development

H1: Consumers are able to attribute human personality traits to prescription drugs.

In light of the industry dynamics and inherent characteristics of the pharmaceutical sector, consideration is being given to brand-building, thus moving beyond the traditional functional attributes and creating expressive or emotional values (Hall & Jones, 2007). Although preliminary, there is evidence to suggest that the brand personality construct may be generally applied to pharmaceutical products. Research conducted by Kapferer (1998; 2012) concludes that generalist doctors and specialists are able to attribute human personality traits to medicines and there is a correlation between prescription levels and certain personality traits. Similarly, a recent survey conducted in Mumbai on the existence of brand personalities of some leading over-the counter

pharmaceutical brands, revealed that consumers do associate brand personalities to over-the-counter medicines (Mala, 2011).

These findings are notable; however, they do not address the specific research question regarding the existence of brand personality in prescription drugs as identified by consumers. Kapferer's research focused exclusively on physicians and specialists, not consumers and the study by Expresspharmaonline used over-the-counter medications that are considered to be akin to consumer goods (Kapferer, 2012). The current state of research has provided a foundation for further investigation into the applicability of the brand personality construct to the pharmaceutical industry.

H2: Prescription drugs will be described by personality traits associated with Competence, such as reliable, successful, and intelligent.

Research by Batra, Lenk, and Wedel (2006) suggests that brand personality characteristics are influenced by the nature of the product category. In other words, entire product categories, not just the individual brands within them, possess a common personality. Personality may, therefore, be described at both the product category and brand level.

Using Aaker's five dimensional brand personality scale as the foundation, Maehle, Otnes, and Supphellen (2011) found that specific brand personality dimensions are associated with particular product categories: Sincere brands typically share family-related associations and high morals; Exciting brands are experiential and elicit exciting feelings; Competent brands are mostly related to expertise and quality; Sophisticated brands are typically feminine in nature; whereas Rugged brands are more masculine. In

addition, performance is particularly important to the Sincerity and Competence dimensions. Within the context of prescription medications, expertise, quality, and performance are of utmost importance to consumers. It is, therefore, reasonable to suggest that consumers' brand personality perceptions of prescription drugs will relate most closely to the Competence dimension.

Brand personality will be influenced by the benefits (functional, symbolic, or experiential) associated with the brand: Perceptions of Competence are mainly the result of strong functional benefits, such as quality (Maehle, Otnes, & Supphellen, 2011). Until recently, pharmaceutical products have been primarily marketed based on the functionality and technical aspects of the product such as efficacy, safety and convenience (Blackett, 2001; Friedman & Gould, 2007; Hall & Jones, 2007). Consumers are particularly interested in the performance and problem-solving capabilities of their prescription medications, and Competence associations can facilitate the consumers' ability to evaluate the functional benefits of a product (Maehle, Otnes, & Supphellen, 2011).

H3a: Consumers are more likely to attribute brand personality to prescription drugs that are highly familiar.

H3b: Consumers are more likely to attribute brand personality to prescription drugs that are heavily advertised.

H3c: Consumers are more likely to attribute brand personality to prescription drugs for which they have recently seen an advertisement.

H3d: Consumers are more likely to attribute brand personality to prescription drugs for which they have had personal experience.

Brand personality can be formed through direct or indirect experience with the brand (Aaker J. , 1997). Direct experience, current or prior usage of the prescription medication, will provide consumers with the opportunity to develop a distinct brand personality. Alternatively, consumers' perceptions of brand personality can be created indirectly by way of the marketing mix (Batra, Lehmann, & Singh, 1993).

Brands reside in the minds of consumers and it is the integrative marketing strategies that bring these objects to life (Fournier, 1998). Consumers will develop brand meaning through the brand communication strategies, sales promotions and media advertisements, as well as through the price, distribution channels, and packaging (Batra, Lehmann, & Singh, 1993). The strength of the brand's personality will be improved when all elements of the marketing mix are aligned and deliberately communicate a consistent message (Batra, Lehmann, & Singh).

The foregoing research supports the hypotheses that consumers will be more likely to attribute brand personality to prescription drugs that are highly familiar; are heavily advertised; for which they have recently seen an advertisement; or for which they have had personal experience.

H4: Consumers are more likely to request a prescription for a brand for which they have perceptually defined a clear brand personality.

Brand personality allows people to connect with their brands (Keller, 1993). It creates an emotional appeal (Landon, 1974); increases the personal meaning of a brand (Levy, 1959); and, can have a positive influence on choice (Schiffman & Kanuk, 2004). The legalization of DTCA has resulted in more consumers requesting a specific brand

name drug from their healthcare providers (Bloom, 1999). It is, therefore, more likely that prescription drugs that have forged strong and favorable brand associations, such as brand personality, are more appealing to consumers and therefore more likely to be requested from doctors.

Prior literature suggests that consumers will prefer brands that have an image and personality that is congruent with their own personality (Sirgy, 1982; Malhotra, 1988; Dolich, 1969). This phenomenon is known as the self-concept theory and is useful in explaining consumers' choice. Self-concept has been defined as "the totality of the individuals' thoughts and feelings having reference to themselves as subjects as well as objects" (Malhotra, 1988, p. 7). It is a multidimensional system that considers the actual self (the person that I actually am), the desired self (who I would like to be), and the social self (how I want others to see me).

Escalas and Bettman (2003) suggested that brands and possessions could fulfill psychological needs such as creating one's self-concept, expressing self-identify, and asserting individuality. Consumers will actively seek brands that will express and reinforce their self-concept and engage in behavior that is consistent with their view of self (either the actual, desired, or social self) (Batra, Lehmann, & Singh, 1993). For example, BMW conveys an image of success and performance and allows consumers to portray a self-image that is consistent with these desirable characteristics. Brand personality is an effective communication mechanism through which consumers can express their sense of self, both to themselves and to others (Batra, Lehmann, & Singh). It conveys information on a typical user, as well as the type of feelings and emotions that a consumer can expect to feel when consuming the brand (Batra, Lehmann, & Singh).

Chapter 4: Study Design & Methodology

The research was conducted in a number of stages. Four pretests preceded the final consumer survey:

- Pretest 1: To select the appropriate sample for the study;
- Pretest 2: To select the brands for the study;
- Pretest 3 & 4: To generate a list of personality traits applicable to prescription medication.

Pretest 1: Selecting the Subjects

The ability to attribute brand personality is contingent on the familiarity and salience of the product. If consumers are not familiar with a brand, they will not be able to attribute a personality to the specific brand (Aaker J. , 1997). As a result, two criteria guided the selection of subjects for this study: country of residence and age. The study focused exclusively on residents of the United States over the age of 35.

A sample of the U.S. population was selected because direct to consumer advertising is legalized in the United States. Consumers from the United States have greater exposure to prescription drug publicity and are likely to have greater awareness and familiarity with the selected prescription drug brands.

Brand familiarly is dependent on salience of the product, and the demographic profile of most prescription medication users, are people over the age of 35, an older, non-student population was appropriate within the context of this study. A small convenience sample of 20 respondents were asked to identify how many prescription medications they were familiar with, of a predetermined list of 15 drugs. The results

indicated that respondents over the age of 35 (M = 4.3) were more familiar than younger respondents (M = 3.2).

Pretest 2: Selecting the Stimulus

Aaker (1997) identified three criteria for the selection of brands in her study: brands were salient and well known; had a variety of personality types; and were selected from a diverse range of product categories (including both utilitarian and symbolic). These criteria ensured that consumers were sufficiently familiar with the brands to attribute a brand personality and enhanced the scope and generalizability of the scale.

Within the context of this study, similar criteria guided the selection of brands. Consumers become familiar with prescription drugs both indirectly through DTC media exposure and directly through usage. Therefore, in order to ensure brand familiarity, candidate brands were identified based on two sources: (i) most advertised drugs (measured based on 2010 annual media expenditure); and (ii) most prescribed drugs (based on 2010 annual sales). See Appendix A for full list of drugs.

As expected, there were a number of communalities between the two sources, and a total of 31 unique drugs were identified as potential candidates. Brand selection occurred in three steps:

(i) All brands that appeared on both lists were included in the list of candidate brands.

- Lipitor
- Plavix
- Advair
- Abilify
- Seroquel
- Singulair

- Crestor
- Enbrel
- Cymbalta

(ii) The preceding list was supplemented by 5 brands that only appeared on the list of most heavily advertised drugs. Media exposure was weighted more heavily in the selection process (versus prescription levels), as mass communication strategies have the ability to reach a wider target audience, and may have resulted in greater awareness.

- Cialis
- Chantix
- Viagra
- Pristiq
- Symbicort

(iii) The list of most prescribed drugs was reviewed and the top eight most prescribed drugs were already included in the previous list, with the exception of the second most heavily prescribed drug. Although advertising has the ability to reach a wide range of consumers, brand familiarity also occurs through usage. It was therefore deemed appropriate to include the second most heavily prescribed drug, Nexium.

The inclusion of medications designed for a range of ailments may increase the generalizability of the findings. Life-threatening illnesses such as high-cholesterol and allergy / respiratory conditions, as well as non-life threatening and non-painful conditions such as erectile dysfunction (ED) were included in the analysis.

Procedures. Pretest two (n=75) was conducted in order to assess respondents' familiarity with the proposed brands. Data were collected via online questionnaire developed through FluidSurvey.com and administered by CanView.com (both companies are Canadian based and adhere to the Canadian research standards such as the Market Research and Intelligence Association (www.mire-arim.ca)). CanView sent an email invitation to any participants registered in their panel who qualified for the study. Participants received monetary compensation if they successfully completed the questionnaire. Participants were assured that the data was anonymous and that personally identifiable information was not at risk.

The list of 15 prescription medications was provided to respondents who were asked to indicate which brands they were very familiar with. There were no limitations on the number of drugs that could be selected, and respondents were provided with the option to select that they were not very familiar with any of the indicated brands. Within the context of this question, very familiar was defined as: (i) you know which medical condition the drug is designed to treat; and (ii) you would rate your familiarity either 4 or 5 on a scale of 1 to 5 (1 being very unfamiliar, and 5 being very familiar).

Results. A total of 75 respondents completed the questionnaire. The sample was relatively equally distributed between males and females (49% and 51% respectively). The age range was fairly balanced, with a slight preference towards the 45-54-age category. Fifteen respondents (20%) indicated that they were not very familiar with any of the indicated prescription drugs. Of the 60 respondents that reported being familiar with at least one prescription drug, the average number of very familiar brands was 4.8.

The brand familiarity results are reported in Table 1. Subjects of the pretest were familiar with many of the 15 brands that were presented. All brands were therefore retained for the final study.

Table 1

Prescription Drug Brand Familiarity (pretest results)

Brands	Percentage	Frequencies
Lipitor	51%	38
Viagra	49%	37
Cialis	35%	26
Advair	33%	25
Chantix	32%	24
Crestor	27%	20
Singulair	27%	20
Cymbalta	25%	19
Plavix	25%	19
Nexium	21%	16
Abilify	20%	15
Symbicort	15%	11
Seroquel	11%	8
Enbrel	5%	4
Pristiq	5%	4
Not familiar with any brands	20%	15

Note. n = 75

Pretest 3 & 4: Brand Personality Trait Generation

As this was the first study investigating the applicability of consumer-based prescription drug brand personality, the first step was to determine which brand personality traits were most appropriate for prescription medication. Brand personality trait generation occurred in two phases. The objective of Phase 1 was to compare two established brand personality scales (the Aaker 1997 Brand Personality Scale versus the Geuens, Weijters and De Wulf 2009 New Measure of Brand Personality); and the goal of phase 2 was to identify if any supplementary personality traits should be included.

Phase 1: Established brand personality scales. Preliminary brand personality research relied primarily on ad-hoc scales of human personality, however as this construct became widespread, tailored brand personality scales emerged in the literature and in practice. Aaker's (1997) Brand Personality Scale was the first attempt to measure brand personality. Despite recent criticism regarding the generalizability and broad definition on which the scale is based, it continues to be highly recognized by practitioners and academics alike.

In recent years, a number of other brand personality scales have been developed, with one of particular interest: the Geuens, Weijters and De Wulf (2009) new measure of brand personality. This scale is based on a more precise definition of brand personality and excludes any non-personality traits such as gender, age, and social class. The authors propose that the scale is generalizable to other product classes and is suitable for analysis of an industry (i.e. between-brand within-category comparisons). The scale has gained academic credibility and is published in the latest edition of the Handbook of Marketing Scales (Haws, Bearden, & Netemeyer, 2011).

Procedures. Data were collected in conjunction with pretest number two via online questionnaire developed through FluidSurvey.com and administered by CanView.com. Respondents (n=50) were provided with a list of 52 unique personality traits and asked to indicate if the traits were descriptive of any prescription medication. Personality traits were generated from both Aaker's scale (42 individual traits), and Geuens, Weijters and De Wulf's scale (12 individual traits). Two traits, down-to-earth and sentimental, appeared on both scales resulting in a total of 52 traits. See Table 2 for the entire list of personality traits.

Participants were instructed to think of prescription medications in general, as the focus was not on any one particular brand. In order to ensure that participants were clear on what was considered prescription medication, the following definition was provided:

> *A prescription medication is a medical drug that has been prescribed by a physician. It cannot be obtained without a prescription. Over-the-counter drugs, such as Advil, are not considered prescription drugs.*

Results. The subjects were a subset (n=50) of the participants included in the second pretest (n=75). The demographic profiles were therefore consistent with the previous study. Table 2 lists the traits tested and the corresponding frequency scores.

Table 2

Frequency Scores of Personality Traits Identified as Descriptive (Aaker & Geuens, Weijters and De Wulf)

Traits[a]	Percentage	Traits[a]	Percentage	Traits[a]	Percentage
Reliable (A)	61%	Contemporary (A)	22%	Down-to-earth (A/G)	9%
Up-to-date (A)	48%	Honest (A)	20%	Cheerful (A)	7%
Successful (A)	46%	Tough (G)	20%	Sentimental (A/G)	7%
Innovative (G)	41%	Aggressive (A)	20%	Daring (A)	7%
Hard working (A)	39%	Bold (G)	15%	Trendy (A)	7%
Stable (G)	37%	Sincere (A)	15%	Spirited (A)	7%
Responsible (G)	35%	Wholesome (A)	13%	Charming (A)	7%
Unique (A)	30%	Secure (A)	13%	Masculine (A)	7%
Intelligent (A)	28%	Smooth (A)	13%	Good looking (A)	4%
Technical (A)	28%	Imaginative (A)	11%	Young (A)	4%
Dynamic (G)	28%	Cool (A)	11%	Rugged (A)	2%
Original (A)	26%	Family-Oriented (A)	9%	Small-town (A)	2%
Confident (A)	26%	Exciting (A)	9%	Upper class (A)	2%
Simple (G)	26%	Independent (A)	9%	Glamorous (A)	2%
Active (G)	24%	Corporate (A)	9%	Outdoorsy (A)	2%
Friendly (A)	22%	Feminine (A)	9%	Western (A)	2%
Real (A)	22%	Ordinary (G)	9%		
Leader (A)	22%	Romantic (G)	9%		

Note: n=50

[a] (A) refers to traits originating from Aaker's scale, and (G) refers to traits originating from Geuens' scale

The personality traits were ranked based on the frequency distribution. A visual comparison revealed that one scale was not more applicable to prescription drugs. Given the primary research objective of identifying the underlying dimensions of brand personality, it was necessary to select the traits that were most applicable to prescription drugs, regardless of scale origin. The two scales were merged and the highest scoring personality traits were retained for further analysis. It was necessary to eliminate certain items to ensure that the scale remained manageable. Consistent with the Aaker reduced 15-item scale, and the Geuens, Weijters and De Wulf 12-item scale, a total of 14 items were retained, corresponding to a cutoff frequency score of 25%.

Phase 2: Supplementary personality traits. Following the results of the Phase 1 trait generation test, a second pretest was conducted in order to determine if there were any supplementary personality traits that should be included in the analysis. A total of 40 additional traits were identified as potential candidates from two complementary sources: (i) Kapferer's research on prescription medication brand personality from the perspective of generalist doctors or specialists (1998), and (ii) established Human Personality Scales (Cattell, Marshall, & Georgiades, 1957; Goldberg, 1992).

Kapferer's brand personality scale. Preliminary research by Kapferer (1998) suggested that the brand personality construct could be generally applied to pharmaceutical products. The research concluded that generalist doctors and specialists are able to attribute human personality traits to medicines and there is a correlation between prescription levels and certain personality traits. The scale included a total of 15 personality traits, that were all found to be highly statistically significant to prescription levels with the exception of four traits: caring, rational, close, and elegant. Although

Kapferer's research focused exclusively on generalist doctors and specialists, physicians are also consumers and may respond to advertisements on more than a professional level. The personality traits used in Kapferer's research may translate to the study of consumers' perceptions of prescription drug brand personality.

Human personality scales. The origins of the brand personality construct can be directly linked to research in human psychology. Although there are similarities between human and brand personality, they are not explicitly interchangeable (Aaker J. , 1997). Aaker's brand personality research identified three brand personality dimensions, Sincerity, Excitement, and Competence, which were consistent with the "Big Five" human personality dimensions, Agreeableness, Extraversion, and Conscientiousness. Two dimensions, Sophistication and Ruggedness, were not consistent (Aaker J. , 1997). These findings suggest that there may be additional human personality traits that are relevant to prescription drug brand personality that were not included within the established brand personality scales.

A second concern with established brand personality scales is that negative traits are rarely included. Personality traits such as selfish or unreliable can be used to describe humans, and potentially extend to brands (Kaplan, Yurt, Guneri, & Kurtulus, 2010). The lack of negative traits in brand personality scales limits the characterization to a positive perspective and ignores any negative associations. The unique characteristics that distinguish the pharmaceutical industry from the consumer good sector may require the inclusion of supplementary human personality traits, both positive and negative in nature.

In order to capture all potential brand characterizations (positive and negative), and to ensure a robust analysis, additional personality traits were generated from the Big

Five model of human personality and Raymond Cattell's 16 Personality Factors. Recent television and print advertisements for prescription medications were carefully reviewed to identify consistent terminology, themes, messages, visuals, or signals. A number of personality traits consistently emerged such as reliable, serious, dependable, stern, and solution oriented. The relevance of these additional traits was supported by an interview with an expert in the pharmaceutical industry very familiar with the brand personality construct. A total of 25 additional human personality traits were identified as potential scale items, as detailed in Table 3.

Procedures. Consistent with the previous pretests, data was collected via online questionnaire developed through FluidSurvey.com and administered by CanView.com. Respondents (n=25) were provided with a list of 40 unique personality traits and asked to indicate if they thought that the traits were descriptive of any prescription medication. Participants were instructed to think of prescription medications in general, as the focus was not on any particular brands. A definition of prescription medication was once again provided to ensure that participants did not include over-the-counter medications in their assessment.

Results. The subjects were a subset (n=25) of the participants included in the second pretest (n=75). The demographic profiles were therefore consistent with the previous studies. A total of eight personality traits exceeded the minimum frequency score of 25%, as established in the previous pretest. These complementary traits were combined with the 14 traits generated in Phase 1, resulting in a total of 22 personality traits for the main study.

A notable finding of this pretesting was that negative personality traits such as shallow; unintelligent; impersonal; unkind; irresponsible, or unfriendly were not considered to be characteristic of prescription medications.

Table 3

Frequency Scores of Personality Traits Identified as Descriptive (Kapferer & Human Personality Scales)

Traits[a]	Percentage	Traits[a]	Percentage	Traits[a]	Percentage
Dependable (H)	62%	Cold (K)	14%	Unkind (H)	5%
Serious (H)	52%	Empathetic (K)	14%	Careless (H)	5%
Caring (K)	43%	Unstable (H)	14%	Anxious (H)	5%
Precise (H)	43%	Cooperative (H)	14%	Impersonal (H)	5%
Practical (H)	43%	Prudent (K)	10%	Adventurous (H)	5%
Solution Oriented (H)	38%	Serene (K)	10%	Close (K)	0%
Optimistic (K)	33%	Dominant (H)	10%	Elegant (K)	0%
Resourceful (H)	29%	Undependable (H)	10%	Class (K)	0%
Generous (K)	24%	Distrustful (H)	10%	Nonconforming (H)	0%
Rational (K)	19%	Conscientious (H)	10%	Shallow (H)	0%
Calm (K)	19%	Unfriendly (H)	5%	Unintelligent (H)	0%
Sympathetic (H)	19%	Stern (H)	5%	Outgoing (H)	0%
Creative (K)	14%	Irresponsible (H)	5%		
Hard (K)	14%	Unsentimental (H)	5%		

Note: n=25

[a] (H) refers to traits originating from the Human Personality scale, and (K) refers to traits originating from Kapferer's scale

Main Study: Prescription Drug Brand Personality

Subjects. Consistent with the pretests, two criteria guided the selection of subjects for this study, country of residence and age. The study focused exclusively on U.S. residents over the age of 35. In order to ensure the generalizability of the findings, the sample was balanced based on gender, age, and income distribution.

Procedure. Data was once again collected via online questionnaire developed through FluidSurvey.com and administered by CanView.com. The survey was designed as follows:

Part 1: Screening questions. Respondents were presented with the following screening questions:

(i) *Consent*: The terms and conditions of the questionnaire were presented and candidate respondents were required to confirm their agreement prior to proceeding with the questionnaire.

(ii) *Gender*: In order to ensure an even distribution between males and females, respondents were required to confirm their gender at the beginning of the survey.

(iii) *Age:* Only respondents over the age of 35 were eligible. Any respondent under the age of 35 was dismissed.

(iv) *Prescription Drug Brand Familiarity*: Respondents were provided with a list of 15 prescription drugs and asked to indicate which brands they were familiar with. Within the context of this study, familiar was defined as: (i) you know which medical condition the drug is designed to treat; and (ii) you would rate your familiarity either 4 or 5 on a scale of 1 to 5 (1 being very unfamiliar, and 5 being very familiar). Subsequently, respondents were asked to list the five brands they were most familiar with.

Brand familiarity was identified as an important criterion of this survey. Respondents needed to be sufficiently familiar with a brand in order to attribute a brand personality. Given the targeted nature of prescription drugs, consumers in general will be less familiar with these brands than consumer good brands. This challenges the development of a generalizable scale,

however, in order to ensure the integrity of the study, it was necessary to only include respondents that were familiar with the drugs.

Part 2: Main questionnaire: Respondents were assigned one of the five brands they rated as most familiar and asked to answer a sequence of questions pertaining to (i) brand personality, (ii) personal experience, and (iii) intentions to request a prescription from a physician. Once the questionnaire was completed for the first brand, the second familiar brand was assigned and respondents were asked to complete the questionnaire again. This process continued until the questionnaire had been completed for a total of five brands. In order to gather sufficient individual brand ratings, each respondent was required to answer the questionnaire for a minimum of five prescription drugs. In the event that a respondent was not familiar with five brands, they were not permitted to complete the questionnaire. To minimize the risk of fatigue, each respondent was only required to complete the questionnaire for a maximum of five different brands.

Respondents were provided with the following instructions adapted from Aaker's original research:

> *The following adjectives are mostly used to describe characteristics of people in daily life. However, some of them can be used to describe products, services, or prescription medications. This may sound unusual, but we would like you to think of (BRAND X) as if it was a person. We are interested in finding out which personality traits or human characteristics come to mind. To assist you, we have preselected 22 personality traits, and would ask that you please indicate the extent to which you think that each of the personality traits describe (BRAND X).*

For example, you might think that the human characteristics associated with Pepto Bismol are kind, warm, caring, soothing, gentle, trustworthy and dependable. The human characteristics associated with Dr. Pepper might be non-conforming, fun, interesting, exciting, and off-beat.

On a scale of 1 to 5, please indicate the extent to which you think the following adjectives are descriptive of (BRAND X).

1 = Not at all Descriptive
2 = Not Descriptive
3 = Somewhat Descriptive
4 = Descriptive
5 = Very Descriptive

Part 3: Demographic information. Following the brand personality portion of the questionnaire, some descriptive information such as education, income, geographic location, and occupation (medically related field), and number of visits to a physician in the past 12 months was collected. A full copy of the survey is included in Appendix B.

Data Compilation. Once collected, several steps had to be taken before analyzing the data pertaining to the hypotheses. The first step in the analysis involved cleaning the data set. A total of 525 participants answered the questionnaire for five brands each, resulting in 2625 individual brand ratings. A number of responses were eliminated because of incomplete questionnaires or extreme and consistent high or low rating patterns (Sung & Kim, 2010). A total of 2245 brand evaluations from 483 respondents were retained, resulting in an overall response rate of 35% as detailed in Table 4. Forty-six percent of respondents were not eligible to respond as they were not familiar with at least five of the listed brands.

Table 4

Response Rates

	Response Rates	Number of Respondents
Fully completed	35%	483
Not familiar with at least 5 brands	46%	640
Incompleted & rejected surveys	19%	263
Total		1386

The second step involved arranging the data set for analysis. Consistent with brand personality research (Aaker J. , 1997; Geuens, Weijters, & Wulf, 2009), the brand personality ratings were "stacked" to form a data array with 2245 rows (483 subjects multiplied by the number of brands per subject) with 22 columns (22 brand personality items). The variables related to demographics formed a data array with 483 rows.

The final step involved operationalizing the variables that were used to test the relationships proposed in Hypotheses 3 and 4. Table 5 provides a detailed explanation of the variables and how they were measured.

Table 5

Antecedents and Consequences of Brand Personality: Variable Description

Variable	Type	Description	Measure
Brand Familiarity	Independent	Based on percentage of respondents who were familiar with the brand.	The 15 brands were classified into two categories: High familiarity (over 60% of respondents reporting familiarity with the brand), and Low familiarity (less than 60% of respondents reporting familiarity with the brands).
Personal Experience	Independent	Respondents were asked if they have ever had a prescription for the particular brand.	Respondents that answered yes were deemed to have personal experience with the brand and respondents that answered no were deemed to have no personal experience with the brand.
Annual Advertisement Expenditure	Independent	Annual advertisement expenditure per brand was established using data from Kantar Media (2010) (see Appendix A for annual media expenditure per brand).	Advertisement expenditure was classified into two categories: High advertised brands (annual expenditure greater than $100mln); and Low advertised brands (annual expenditure less than $100).
Recent Advertisement Exposure	Independent	Recent advertisement exposure was assessed using selfreports of when was the last time respondents had seen an advertisement for the brand.	Respondents having seen an advertisement within the last 7 days were considered to have been recently exposed to an advertisement.
Intention to Request a Prescription	Dependent	Respondents were asked to indicate on a 5-point Likert scale, how likely they were to seek a referral for the brand if they suffered from the related ailment.	The 2245 individual brand ratings obtained a score for likelihood to seek a referral (1 = definitely not; 5 = definitely).

Chapter 5: Statistical Analysis & Results

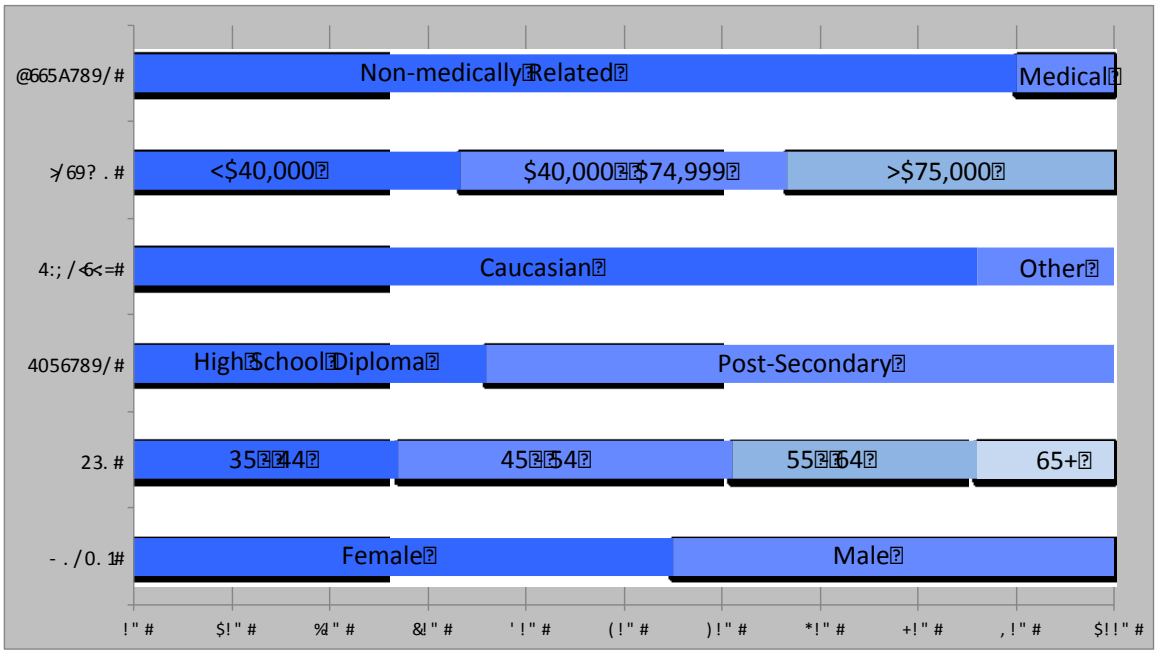
The statistical analysis and findings of the main consumer study are presented. Firstly, statistics describing the nature and breakdown of the data are discussed. Secondly, the factor analysis is presented that identifies the underlying dimensions of prescription drug brand personality. Finally, results of the multiple regressions analysis examining the antecedents and consequences of brand personality are discussed.

Descriptive Statistics

The total sample of 483 respondents was well distributed between males and females (45% and 55% respectively). The age range was reasonably balanced, with a slight preference towards the 45-54-age category. Respondents represented all ranges of income although the majority of respondents' annual income was under $75,000. Approximately two thirds of the respondents had completed a post-secondary education. The majority of respondents were Caucasian (86%), with the remaining 14% of various ethnic backgrounds. Only 10% of respondents worked in a medically related field, and the fast majority of respondents (82%) had between one and five visits to a physician on an annual basis. Descriptive statistics are provided in Table 6.

Table 6

Total Sample Descriptive Statistics



The brand familiarity results are reported in Table 7. All of the 15 prescription drugs were identified as familiar, and the familiarity distributions were consistent with the pretest results. Descriptive statistics for brand familiarity, personal experience, annual advertisement expenditures, recent advertisement exposure, and intention to request a prescription are provided in Table 8.

Table 7

Prescription Drug Brand Familiarity: Descriptive Statistics

Brands	Percentage	Frequencies
Lipitor	69%	332
Viagra	63%	305
Cialis	42%	205
Nexium	41%	198
Advair	37%	180
Chantix	37%	178
Crestor	34%	164
Singulair	32%	153
Plavix	30%	144
Cymbalta	27%	128
Abilify	23%	109
Seroquel	12%	56
Symbicort	8%	41
Enbrel	7%	33
Pristiq	4%	19

Note. n = 2245 individual brand evaluations

Table 8

Antecedents and Consequences of Brand Personality: Descriptive Statistics

Variable	Descriptive Statistics
Brand Familiarity	10 brands were identified as having high brand familiarity (Viagra, Lipitor, Cialis, Advair, Nexium, Cymbalta, Crestor, Chantix, Plavix, Singulair); and 5 brands had low brand familiarity (Abilify, Symbicort, Enbrel; Seroquel, Pristiq).
Personal Experience	Of the 2245 responses, approximately 22% had personal experience (505 respondents).
Annual Advertisement Expenditure	10 brands were identified as having high annual advertisement expediture (Lipitor, Cialis, Cymbalta, Advair, Abilify, Symbicort, Pristiq, Plavix, Chantix, Viagra); and the remaining 5 brands had low annual expenditure (Crestor, Nexium, Seroquel, Enbrel, Singulair).
Recent Advertisement Exposure	Of the 2245 responses, approximately 22% had seen an advertisement within the last 7 days (510 respondents).
Intention to Request a Prescription	The 2245 individual brand ratings obtaining a score for likelihood to seek a referral (1 = definitely not; 5 = definitely), (M = 3.32, s = 1.28)

Identification of Brand Personality

Respondents were asked to indicate the extent to which they felt the listed personality traits were descriptive of the particular brand (1 = not at all descriptive; 5 = very descriptive). The personality trait scores were combined across all brands and a per-trait average score was calculated, based on a scale of 1 to 5. As detailed in Table 9, all 22-traits scored above the mean of three, meaning somewhat descriptive. The results confirmed support for Hypothesis 1 indicating that consumers are able to attribute human personality traits to prescription drugs.

Table 9

Personality Trait Average Score (across all brands)

Personality Traits	Average Trait Score
Solution Oriented	3.98
Successful	3.80
Reliable	3.79
Dependable	3.79
Serious	3.78
Up-to-date	3.76
Confident	3.74
Optimistic	3.73
Hard Working	3.73
Innovative	3.62
Responsible	3.62
Practical	3.61
Stable	3.55
Resourceful	3.54
Precise	3.54
Intelligent	3.52
Caring	3.50
Original	3.46
Dynamic	3.38
Unique	3.38
Simple	3.27
Technical	3.24

Dimensions of Prescription Drug Brand Personality

The primary research objective was to identify the underlying dimensions of prescription drug brand personality. As such, the analysis focused on perceptions of personality dimensions in general, rather than the personality traits of a particular brand. Using all brand evaluations (2245), a factor analysis (FA) with default setting for principal component was run in SPSS on the 22-item prescription drug brand personality scale.

The FA produced a 2-factor solution as detailed in Table 10. The guidelines on number of factors to extract was based on the following criteria (Aaker J. , 1997; Hair, Black, Babin, & Anderson, 2010):

(i) Both factors had eigenvalues greater than one;

(ii) A significant dip in the Scree plot followed the second factor;

(iii) The first two factors were the most meaningful and interpretable; and

(iv) The two-factor solution explained a high level of variance in brand personality.

Table 10

Total Variance Explained by the Initial Factor Solution

Factors	Initial Eigenvalues	% of Variance	Cumulative %
1	12.526	56.938	56.938
2	1.174	5.338	62.276

Interpreting the Matrix of Factor Loadings. A final factor analysis with principle axis extraction, Varimax rotation, and Kaiser normalization was conducted which resulted in an easily interpretable two-factor solution, as presented in Table 11.

Table 11

Varimax Rotated Matrix of Factor Loadings

	Factor		
	1	2	Communalities
Dependable	0.81	0.28	0.73
Reliable	0.78	0.31	0.70
Stable	0.72	0.36	0.64
Successful	0.71	0.38	0.64
Responsible	0.69	0.43	0.67
Hardworking	0.67	0.46	0.66
Practical	0.66	0.37	0.58
Confident	0.63	0.49	0.64
Precise	0.62	0.47	0.60
Solution Oriented	0.60	0.39	0.51
Caring	0.58	0.49	0.57
Optimistic	0.54	0.50	0.54
Unique	0.23	0.76	0.64
Innovative	0.39	0.73	0.69
Original	0.30	0.68	0.56
Dynamic	0.46	0.59	0.57
Up-to-date	0.48	0.59	0.57
Intelligent	0.57	0.58	0.66
Resourceful	0.55	0.58	0.64
Technical	0.29	0.52	0.35
Serious	0.48	0.50	0.48
Simple	0.46	0.25	0.28

Note. Variables highlighted in grey are candidates for deletion as they have low factor-loadings (< 0.6), and/or high cross-loadings (> 0.4), and/or low communalities (<0.5). Variables are sorted by highest loadings.

A visual investigation of the rotated factor solution identified three potential issues: (i) certain variables had low factor loadings on the focal factor (<.6); (ii) significant loadings on more than one factor, referred to as cross-loadings (>.4); and (iii) low communalities (<.5) (Hair, Black, Babin, & Anderson, 2010; Aaker J. , 1997). A series of secondary factor analysis with oblique rotation (Quartimun, Bi-Quartimin, and Covarimin) was conducted, however, this did not result in a simple structure as defined by Thurstone (1946) and did not provide any further insight into factor structure. These variables were candidates for possible deletion subject to the variable's overall contribution to the research. Within the context of this study, it was deemed appropriate

to delete the problematic variables, as they were not well represented by only one of the factors and therefore not sufficiently distinct to represent separate concepts. A total of 12 variables were deleted; hardworking, confident, precise, caring, optimistic, dynamic, up-to-date, intelligent, resourceful, technical, serious, and simple.

A subsequent FA was conducted on the remaining 10 variables resulting in a similar two-factor solution, based on the previous criteria. A KMO statistics of .937 indicated that FA was appropriate for the remaining 10 items. The total variance explained increased to 71.55%, as seen in Table 12. All items had communalities exceeding 0.5 and loaded onto only one factor, with the exception of innovative. Innovative had a very slight cross-loading, .69 on the focal factor, and .44 on the secondary factor, however was nonetheless retained as the item was deemed meaningful within the context of pharmaceutical brand personalities. The final factor solution is illustrated in Table 13. The homogeneity of the two dimensions was confirmed by way of a FA on each of the individual factors. The results indicated that only one factor should be extracted, based on the same criteria of the initial FA.

Table 12

Total Variance Explained by the Final Factor Solution

Factors	Initial Eigenvalues	% of Variance	Cumulative %
1	6.124	61.235	61.235
2	1.032	10.319	71.554

Table 13

Final Varimax Rotated Matrix of Factor Loadings

	Factor	
	1	**2**
Dependable	0.83	
Reliable	0.80	
Stable	0.73	
Successful	0.73	
Responsible	0.71	
Practical	0.67	
Solution Oriented	0.62	
Unique		0.81
Original		0.72
Innovative		0.69

Labeling the Factors. The naming procedure for the two extracted factors resulted in the following:

Competence. This factor label was established based on a comparison of existing brand personality dimensions (Kaplan, Yurt, Guneri, & Kurtulus, 2010). Two of the variables, reliable and successful, were consistent with items from Aaker's Competence dimension. Four of the items, responsible, practical, reliable, and dependable, were consistent with the items of the Conscientiousness dimension of the human personality scale. Competence was selected as the factor name as it was very representative of the Factor 1 items, such as responsible and dependable.

Innovativeness. This was a newly emerging dimension that had not been documented in previous research. The factor label was intuitively developed based on the appropriateness and representativeness of the items of Factor 2 (Hair, Black, Babin, & Anderson, 2010). The three variables, innovative, unique, and original had similarly high factor loadings, indicating that the three variables had relatively equal importance to the dimension. Innovativeness was selected as the most appropriate and descriptive label, as it inherently encompasses both originality and uniqueness.

Hypothesis 2, suggesting that prescription drugs would be described by the personality traits associated with Competence, such as reliable, successful, and intelligent, was partially supported. The two underlying dimensions of prescription drug brand personality, Competence and Innovativeness, are summarized in Figure 3.

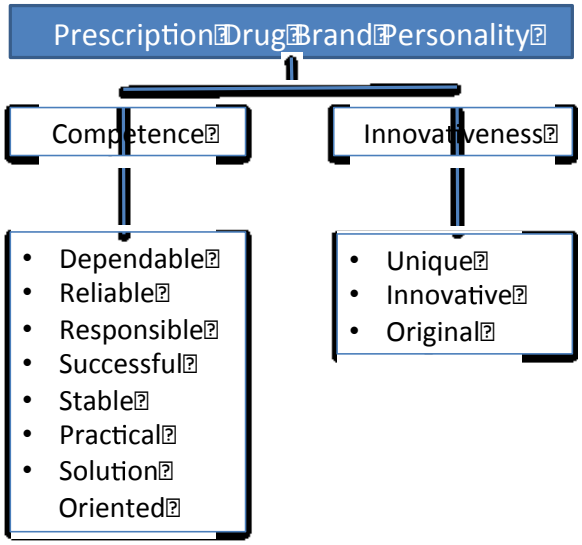


Figure 3. Dimensions of Prescription Drug Brand Personality

Reliability. The item-to-total correlations ranged between .44 and .78, and the reliability of each dimension was satisfactory (Cronbach's alphas of .92 and .85 for Competence and Innovativeness respectively).

Stability of the Dimensions. The stability of the proposed prescription drug brand personality scale was assessed using various subgroups of subjects. This procedure ensured that there were not any significant differences in the meaning of the personality traits among distinct groups of people and confirmed the generalizability of the scale. Principle axis extraction, with Varimax rotation, Kaiser normalization, and unrestricted number of factors to be extracted, was conducted in SPSS on four subsamples: (i) gender:

males (n=1019) versus females (n=1226); (ii) age: younger respondents between the ages of 35 and 54 (n=1373) versus older respondents above the age of 55 (n=872); (iii) occupation: respondents in a medically related profession (n=204) versus respondents not (n=2041); and (iv) a random split sample (n=1122).

The similarity of the factor structure was assessed qualitatively based on four criteria (Aaker J. , 1997):

(i) The same number of factors were extracted;

(ii) Consistency of factor structure (traits loaded on the same factors);

(iii) Similar weights in factor loadings; and

(iv) Consistency in the level of variance explained by each factor.

The results of the subgroup factor analysis confirmed a two-factor solution, overall consistency in the factor structures, loading weights, and variance explained by each factor, as described in Table 14. This secondary analysis confirmed that that the prescription drug brand personality scale was stable across various subsamples and supported the generalizability of the scale.

Table 14

Stability of the Prescription Drug Brand Personality Scale Across Various Subgroups

	Original Full Data Set		**Random Split Sample**		**Males**		**Females**	
Items	Factor		Factor		Factor		Factor	
	Competence	Innovative	Competence	Innovative	Competence	Innovative	Competence	Innovative
Dependable	0.83	0.25	0.82	0.23	0.81	0.24	0.85	0.26
Reliable	0.80	0.30	0.80	0.28	0.80	0.28	0.80	0.31
Stable	0.73	0.32	0.73	0.27	0.72	0.31	0.73	0.33
Successful	0.73	0.35	0.73	0.32	0.70	0.32	0.74	0.37
Responsible	0.71	0.37	0.72	0.38	0.71	0.35	0.71	0.39
Practical	0.67	0.33	0.69	0.33	0.68	0.33	0.67	0.34
Solution Oriented	0.62	0.36	0.61	0.36	0.65	0.31	0.60	0.39
Unique	0.25	0.81	0.23	0.81	0.26	0.79	0.25	0.82
Original	0.33	0.72	0.29	0.70	0.28	0.72	0.36	0.71
Innovative	0.44	0.69	0.46	0.67	0.42	0.70	0.46	0.68

	Younger (35-54)		**Older (55+)**		**Non-Medical Occupation**		**Medical Occupation**	
Items	Factor		Factor		Factor		Factor	
	Competence	Innovative	Competence	Innovative	Competence	Innovative	Competence	Innovative
Dependable	0.83	0.27	0.83	0.23	0.83	0.26	0.86	0.23
Reliable	0.81	0.29	0.79	0.31	0.81	0.29	0.78	0.37
Stable	0.72	0.33	0.74	0.39	0.73	0.34	0.77	0.25
Successful	0.72	0.36	0.74	0.31	0.72	0.35	0.76	0.33
Responsible	0.70	0.36	0.74	0.33	0.71	0.38	0.71	0.29
Practical	0.66	0.33	0.69	0.35	0.67	0.34	0.69	0.34
Solution Oriented	0.60	0.34	0.65	0.38	0.61	0.36	0.68	0.31
Unique	0.26	0.80	0.24	0.83	0.25	0.81	0.25	0.87
Original	0.33	0.73	0.42	0.71	0.33	0.71	0.30	0.78
Innovative	0.46	0.68	0.32	0.70	0.44	0.69	0.46	0.63

Note. Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 3 iterations.

Antecedents of Brand Personality

A relationship between the independent variables (brand familiarity, annual advertisement expenditure, recent of media exposure, personal experience), and the dependent variables (brand personality: Competence and Innovativeness), was hypothesized.

Prior to testing the proposed hypotheses, it was necessary to operationalize brand personality into a measurable variable. A composite brand personality score per dimension, referred to as a factor score, replaced the individual brand ratings. Each respondent received two factor scores, resulting in a total of 2245 factor scores for both Competence and Innovativeness.

Two separate multiple regression analysis were conducted in order to test if brand familiarity, advertisement level, recent advertisement exposure, and personal experience (prior or current usage) significantly predicted participants' rating of brand personality on both the Competence and Innovativeness dimensions. The multicollinearity indices (Tolerance and VIF) were within the allowable thresholds (greater than 0.2 and less than 10 respectively) and did not seem to present any issues for regression analysis (details provided in Appendix C). The results of both regressions generated similar findings, indicating that the four variables only explained approximately 1.9% of the variance in the Competence brand personality ratings ($R^2 = .019$, $F(4,2190) = 10.55$, $p<.001$), and 2.6% of the variance in the Innovativeness brand personality ratings ($R^2 = .026$, $F(4,2190) = 14.66$, $p<.001$).

The independent variables were examined in order to assess their predictive powers. Brand familiarity ($\beta = .28$, $p<.001$) and personal experience ($\beta = .11$ $p<.05$) were found to be significant predictors of Competence. A significant negative relationship was found between annual advertisement expenditure and Competence ($\beta = -.18$, $p<.001$). Advertisement expenditure ($\beta = .15$, $p<.001$), recent media exposure ($\beta = .24$, $p<.001$), and personal experience ($\beta = .15$, $p<.05$) were found to be significant predictors of Innovativeness. Results are summarized in Table 15. Hypotheses 3 (a-d) were partially supported, as detailed in Table 16.

Table 15

Antecedents of Brand Personality

Model	Predictors	Coefficients	Significance
BPC	Brand Familiarity	0.28	0.000 **
	Ad Expenditure	-0.18	0.000 **
	Recent Media Exposure	0.08	0.073
	Personal Experience	0.11	0.021 *
BPI	Brand Familiarity	0.02	0.733
	Ad Expenditure	0.15	0.000 **
	Recent Media Exposure	0.24	0.000 **
	Personal Experience	0.15	0.001 *

Note. **Levels of statistical significance

Consequences of Brand Personality

A multiple linear regression was used to test if brand personality (Competence and Innovativeness) significantly predicted respondents' intention to request a prescription from a physician. The results of the regression indicated that brand personality explained 28.2% of the variance in likelihood to request a prescription (R^2= .282, F(2,2242) = 441.39, p<.001).

A second regression was run, including four additional predictor variables as independent variables; brand familiarity, recent media exposure, personal experience, and advertisement expenditure. The multicollinearity indices (Tolerance and VIF) were within the allowable thresholds (greater than 0.2 and less than 10 respectively) and did not seem to present any issues for regression analysis (details provided in Appendix C). The results indicated that the additional four variables only accounted for an additional four percent in the variance in likelihood to request a prescription (R_2 = .322, F(6,2188) = 173.93, p<.001).

Overall, four variables were found to have a statistically significant relationship with intention to request a referral from a physician. The Competence brand personality ($\beta = .609$, $p<.001$), Innovativeness brand personality ($\beta = .305$ $p<.001$), personal experience ($\beta = .535$ $p<.001$), and recent media exposure ($\beta = .162$ $p<.05$), were found to be significant predictors of intention to request a referral from a physician. Brand familiarity and advertisement expenditure were not statistically significant.

Support for Hypothesis 4 was confirmed as it was found that both Competence and Innovativeness predicted intentions to request a prescription from a physician. Table 16 provides a summary of the hypotheses and the outcomes.

Table 16

Summary of Hypotheses and Outcomes

Hypotheses		**Outcome**
H1:	Consumers are able to attribute human personality traits to prescription drugs.	Supported
H2:	Prescription drugs will be described by personality traits associated with Competence, such as reliable, successful, and intelligent.	Partially Supported - Emergence of Innovative Dimension
H3a:	Consumers are more likely to attribute brand personality to prescription drugs that are highly familiar.	Partially Supported (Holds for Competence Personality Dimension)
H3b:	Consumers are more likely to attribute brand personality to prescription drugs that are heavily advertised.	Partially Supported (Holds for Innovative Personality Dimension)
H3c:	Consumers are more likely to attribute brand personality to prescription drugs for which they have recently seen an advertisement.	Partially Supported (Holds for Innovative Personality Dimension)
H3d:	Consumers are more likely to attribute brand personality to prescription drugs for which they have had personal experience.	Supported
H4:	Consumers are more likely to request a prescription for a brand for which they have perceptually defined a clear brand personality.	Supported

Chapter 6: Discussion

Prescription Drug Brand Personality

The objective of this research was to draw on the existent brand personality construct to develop a framework of prescription drug brand personalities as identified by consumers. To identify the brand personality dimensions, a total of 483 subjects rated a subset of 15 brands on 22 personality traits. A total of 2245 individual brand ratings were generated and analyzed using exploratory principal axis factor analysis. The results suggest that consumers do in fact attribute human personality traits to prescription drugs, and that prescription drug brand personality as perceived by consumers has two distinct dimensions: Competence and Innovativeness. A series of secondary factor analyses on a subset of subjects' confirmed the robustness and generalizability of the scale.

Prescription Drug Personality Traits

Consumer Good Brand Personality vs. Prescription Drug Personality. Although existing brand personality scales claim to be generalizable to all product categories (Geuens, Weijters, & Wulf, 2009), this research emphasizes the need for a unique prescription drug brand personality scale. Prior research on consumer goods has revealed a multi-dimensional brand personality framework with a high degree of consistency with existing human personality scales (Aaker J. , 1997; Geuens, Weijters, & Wulf, 2009). The results of pretest 2 reveal that only three dimensions of the Aaker scale are relevant (Competence, Excitement, and Sincerity), and only two dimensions of the Geuens, Weijters and De Wulf scale emerged (Responsibility and Activity). Some similarities exist between consumer goods and prescription brand personalities, for example items that form part of the Competence dimension. However, there is limited

congruence between the remaining dimensions such as Ruggedness, Sophistication, Emotionality, Simplicity, and Aggressiveness. This finding supports the need for an industry-specific scale. Using a consumer goods scale to measure prescription drug brand personality may be misleading, as some personality traits may be overlooked and result in a misrepresented drug personality.

Negative Traits. A particular finding that emerged in the trait generation phase of the research is the relevance of negative personality traits. The vast majority of existing brand personality scales have only included positive attributes. Critics have suggested that scales are one sided, and similar to human personality traits, brand personality scales should also include negative personality traits such as shallow or unintelligent to capture the darker side of brand personality (Kaplan, Yurt, Guneri, & Kurtulus, 2010). In light of the inherent risks associated with prescription drugs, it is reasonable to surmise that consumers might attribute negative personality traits to prescription drugs. In order to ensure the scale captured the entire brand personality, in addition to positive personality traits, respondents were presented with 13 negative personality traits such as irresponsible, untrustworthy, unfriendly, or undependable. Table 4 provides the full list of negative personality traits. A frequency distribution revealed that consumers did not consider the negative brand personality traits to be characteristics of prescription medications and only positive traits were retained for the final study.

Although additional research is required, there are a few possible reasons why negative traits do not seem to apply to prescription drug brand personality. One explanation could be that consumers interpret brand personality primarily through marketing communications and advertising. The marketing content is controlled by

pharmaceutical companies and is framed in a positive light in order to promote a favorable brand identity and foster a positive image. Based on these perceptions, consumers may view positive personality traits, versus negative traits, as descriptive of prescription medications. A second reasons may be that despite the negative perceptions of the industry in general, perhaps consumers maintain a positive image of prescription drugs, as they are helpful in curing disease or alleviating suffering. Finally, it may also be possible that consumers assume that physicians have a positive opinion of the drugs, which in turn influences their views.

Positive Traits. The emergence of positive personality traits such as reliable, dependable, responsible, innovative, original, and solution oriented was not surprising. The majority of pharmaceutical communications have used a product-attribute focus, portraying effectiveness, symptom control, innovativeness, safety, convenience and cost effectiveness as the most common appeals (Bell, Wilkes, & Kravitz, 2000; Blackett & Harrison, 2001). The traits found to be most descriptive of prescription drugs are aligned with the marketing messages, suggesting that the brand image, as perceived by consumers, is consistent with the brand identity portrayed by the pharmaceutical marketers. As suggested above, there may also be an implied endorsement from the physician when a patient receives a prescription. In other words, consumers assume a doctor would not prescribe a "bad drug".

Antecedents and Consequences

The development of a robust scale is a very meaningful contribution in itself; however, this research also yields important secondary findings regarding the antecedents and consequences of brand personality.

Antecedents of Brand Personality. Prior research suggests that brand personality can be created indirectly through marketing initiatives and directly though usage (Batra, Lenk, & Wedel, 2006). It was therefore hypothesized that brand familiarity, advertisement expenditure, recent advertisement exposure, and personal experience (prior or current usage) would predict participants' ratings of brand personality. The results indicated that only a very limited portion of the variance in brand personality was explained by the four-predictor variables (approximately 2%).

There are two possible reasons why the proposed antecedents only explained a small portion of brand personality. Firstly, there may be are other predictor variables that were not considered by the current research: for example, the number of years that the drug has been on the market; the therapeutic class; severity of side effects; physicians perceptions of the brand; status on third party payer's formulary; or corporate image. Pharmaceutical companies allocate a portion of their advertising budgets on campaigns designed to promote a positive corporate image, which may influence the development of the brand level personality. Perhaps having a favorable corporate image will allow consumers to draw a parallel with the brand and will influence the brand personality associations.

Secondly, the limited impact on intention to request a referral may suggest that the measures need to be refined. For example, brand familiarity could be explicitly measured for each respondent versus assessed on an aggregate basis; advertisement exposure and expenditure could differentiate between traditional advertising such as print and television, and new mediums such as social media and Internet communications; and personal experience could incorporate elements such as prior discussions with a

physician about the specific brand. Multi-item scales may allow for a more sophisticated measure, improving the predictive power of the variables. Variables such as familiarity and advertisement expenditure were operationalized as a dichotomous variable, which reduces the variability in the measure and may reduce the explained variance.

Although interpretation is tempered by the low explained variance of the models, the findings suggest that the antecedents of brand personality will differ by dimension. This is a valuable finding for brand managers attempting to build brand personality for their prescription drug products. The significant relationships and possible explanations are discussed below:

Competence Dimension. Consumers are more likely to attribute a Competent brand personality to prescription drugs that are highly familiar and for which they have had personal experience. They are less likely to attribute a Competent brand personality to prescription drugs that are heavily advertised. A discussion of the possible explanations for these relationships will follow below.

Innovativeness. Consumers are more likely to attribute an Innovative brand personality to prescription drugs that are heavily advertised, for which they have recently seen an advertisement, and for which they have had personal experience. A discussion of the possible explanations for these relationships will follow below.

Advertisement. Neither annual expenditure nor recent media exposure positively influenced the likelihood to attribute brands with a Competent personality. In fact, there was a negative relationship between annual media expenditure and Competence. One possible explanation is consumers' skepticism towards mass media. Consumers are bombarded by thousands of advertisements on a daily basis resulting in over stimulation,

cynicism, and distrust towards mass media. Consumers tend to display a preference towards targeted and customized communications. Mass media advertisements may therefore deteriorate the perceptions of traits such as dependable, reliable, and responsible and result in a less Competent brand personality.

On the other hand, advertisement expenditure and recent media exposure improves the likelihood of attributing an Innovative brand personality. Advertisement may be effective in aiding brand recognition, improving recall, and enabling top-of-mind awareness. Highly advertised brands may therefore be perceived as state-of-the-art, insinuating innovativeness and increasing likelihood of attributing an Innovative brand personality.

Personal Experience. As hypothesized, personal experience (defined as a current or past prescription for the brand) has a significant positive relationship with both dimensions of brand personality. Consistent with prior research, personal experience is an effective way to develop a brand personality (Batra, Lenk, & Wedel, 2006). Given that prescription drugs are experiential in nature, meaning consumption is required in order to assess quality and impact (Rosenthal, Berndt, Donohue, Epstein, & Frank, 2003), marketers are limited in their ability to develop brand personality through usage. In order to cultivate a brand personality, marketers will need to create other opportunities for personal experience, other than usage. Perhaps personal experience can be fostered through physician-patient discussions, which may be influenced by marketers through DTCA and physician-focused marketing such as detailing and sampling. Personal experience way of physician-patient interaction may be another avenue in which brand personality can be developed.

Brand Familiarity. Familiarity was found to be a predictor of Competence, but not Innovativeness. This is somewhat of an unexpected finding as prior research suggests that brand familiarity is a criterion for existence of brand personality (Aaker J. , 1997). If consumers are not sufficiently familiar with a brand, they will not be able to attribute a brand personality. This finding warrants further investigation. A potential explanation may be how brand familiarity was measured within the context of this study, as explained above.

Consequences of Brand Personality. Prior research has shown that brand personality allows consumers to develop meaningful relationships with their brands, forge strong and favorable associations, and has the power to influence consumer choice. The findings of this work suggest a similar relationship, where brand personality can increase the likelihood of requesting a prescription from a physician. Overall, four variables were found to have a statistically significant relationship with intention to request a referral from a physician. The Competence brand personality dimension was found to have the strongest influence and accounted for nearly 30% of the variance in intention to request a prescription. The inclusion of the remaining three explanatory variables, Innovative brand personality, direct usage, and recent media exposure, did not substantially improve the explained variation in intention to request a prescription.

In order to understand what influences a consumer's intention to request a prescription and to develop a comprehensive model, consideration must be given to other predictor variables not measured by the current research. Donahue and Berndt (2004) investigated the impact of DTCA on choice of antidepressant medication and based their research on traditional models of demand for healthcare products and prescription drugs.

They hypothesized that the choice of medication may be influenced by three factors: (i) individual-level factors such as demographic characteristics like age and gender; (ii) features of the medication such as price, length of time on the market, therapeutic indications, side effects, and insurance coverage; and (iii) physician preferences which are influenced by physician focused marketing strategies such as detailing and sampling (Donahue & Berndt, 2004).

The Competence brand personality dimension showed to be a more significant predictor of intention to request a referral than the Innovativeness dimension. Additional investigation of this observed relationship is required in order to ensure confounding variables do not exaggerate the influence of brand personality on intention to request a referral. Of particular interest is the relationship between features of the medication (length of time on the market, therapeutic indication, side effects, and insurance coverage), and influence on choice. One concern is the potential correlation between features of the medication and Competence brand personality. For example, a brand that has been on the market for 10 years with limited side effects may be perceived as very competent. If this relationship holds, it is difficult to estimate the individual impact of brand personality and features of the medication on intention to request a referral.

The findings of this research suggest that brand personality may influence consumers' choice, supporting consideration for the inclusion of brand personality in the established demand models. However, additional research is required in order to determine if other variables, for example, features of the medication, are responsible for the observed relationship.

Chapter 7: Managerial & Theoretical Implications

This research provided empirical support for the existence of prescription drug brand personalities as identified by consumers. The main contribution is the development of a robust and generalizable scale, and a preliminary understanding of the antecedents and consequence of brand personality. The findings of this research will benefits three key stakeholders: pharmaceutical marketing practitioners, academics, and consumers. Consideration must also be given to the impact on public policy and the physician-patient relationship.

Managerial Implications

From a practical standpoint, the development of a prescription drug brand personality scale has important implications for the management of brand name pharmaceutical drugs and the expansion of branding strategies. Brand personality scales have been used as diagnostic instruments that allow marketers to (i) measure and analyze consumers' perceptions of prescription drugs; (ii) compare perceptions of competing brands; and (iii) pinpoint alternative positioning strategies (Grohmann, 2009).

The prescription drug brand personality scale provides brand managers with a measurement tool to assess the effectiveness of their communication messages. Pharmaceutical companies spend millions of dollars annually on creating a brand identity, however the return on the investment is unclear. Any measurement tool that can facilitate assessment will be beneficial. Brand image is the result and interpretation of brand identity; however, marketing communications are very often interrupted. This may result in a discrepancy between the intended brand identity and the perceived brand image. This scale may allow pharmaceutical companies to determine if the prescription

drug brand personalities perceived by consumers are consistent with those being portrayed by the sender, the pharmaceutical companies. If any disconnects exist, the brand managers can make the necessary changes to their strategies to better align the brand identity and brand image.

Similarly, if the brand personality scale is used as an evaluation tool, it will allow the assessment of competing drugs personalities. This could provide insight on how brands are currently positioned and identify any opportunities for differentiation. For example, if all cholesterol-lowering drugs are perceived to have a Competent brand personality, marketers may decide to position their drug with an identity that is consistent with the therapeutic class, or differentiate by focusing on other personality traits from the Innovativeness dimension.

Following the discovery of prescription drug brand personality, the focus shifted to understanding how brand personality can be developed. Although preliminary, this research suggests that brand personality can be developed indirectly through marketing strategies such as advertising, and directly through usage. In addition, the way in which brand personality is developed may vary by dimension (Competence or Innovativeness). The prescription drug brand personality scale can provide theoretical and applied insight into the antecedents of brand personality. Elements of the marketing mix, that include the advertising, packaging, user imagery, symbols, public relations efforts, and celebrity endorsements could be manipulated to determine the resulting impact on brand personality. This may provide managers with meaningful insight on the most effective methods of developing brand personality.

Theoretical Implications

This research has made a meaningful contribution to the existing work on brand personalities. The findings suggest that although existing brand personality scales claim to be applicable to all product categories (Geuens, Weijters, & Wulf, 2009), the reality is such that these scales may not apply to an industry that is different from consumer goods.

In addition to gaining insight on how brand personality can be developed, this research provides a glimpse of the potential impact prescription drug brand personality has on consumers' likelihood to request a prescription. These findings can act as a foundation on which academics can build a greater understanding of the potential influence prescription drug brand personality has on brand evaluations and choice. Research on consumer-good brands has shown that brand personality is an asset that can create product differentiation (Crask & Laskey, 1990); contribute to more favorable evaluations when compared to a generic offering (Upshaw, 1995); and increase brand equity, brand loyalty and brand trust (Sung & Kim, 2010). In light of the challenges facing the very competitive pharmaceutical industry, brand personality may be a valuable marketing strategy. Prescription drug brand personality may have the potential to create a sustainable point of differentiation; to build barriers of entry that reduces competition from other brand name drugs; to increase loyalty; and to safeguard against the treat of generics following patent expiry. The prescription drug brand personality scale will allow researchers and marketers to gain a better grasp of the tangible outcomes of brand personality. Brand personality can be strategically manipulated and the effect on outcome variables such as likelihood to request a prescription, trust, brand evaluations, and preference can be explicitly measured.

Consumer Related Implications

Health related concerns might be intimidating and distressing, causing many consumers to suffer in silence. The development of prescription drug brand personality has the potential to allow consumers to connect with the brand. A prescription drug with a personality may seem more approachable and less daunting, giving consumers the confidence to take a more active role in their healthcare and seek treatment for previously undiagnosed conditions.

The empirical confirmation of the existence of brand personality in pharmaceutical products has provided incentive for academics and practitioners to investigate further the theoretical and applied implications of this construct. With a deeper understanding of brand personality, brand managers can begin to strategically cultivate brand personality as an effective positioning and differentiation tool.

Public Policy Related Implications

The pharmaceutical industry is heavily regulated as a result of the inherent health risks associated with the products. The legalization of DTC continues to be debated, as there is growing concern for the negative ramifications of encouraging patients to seek a prescription for a specific brand. The development of promotional campaigns designed to build an emotional appeal and attachment to a prescription brand may be subject to ethical scrutiny. Additional research is required in order to better understand the impact prescription drug brand personality may have on patients and physicians behaviours. Many questions remain unanswered, such as: Is brand personality able to increase the emotional attachment to a brand and influence consumers brand preferences? Are patients willing to pay more for a brand with a perceptually defined brand personality?

What are the implications, both positive and negative, for consumers as well as the physician-patient relationship?

Those in favor of DTC advertisement may suggest that the development of a prescription drug brand personality may help educate consumers; empower consumers to take a more active role in healthcare; increase treatment for previously undiagnosed conditions; or improve public health (Blose & Mack, 2009; National Health Council, 2002). On the other hand, it may be argued that encouraging patients to seek a particular brand may have negative consequences on healthcare relationships and costs. Physicians may feel pressured to acquiesce to patient demands, and consumers may pay a premium when an equally effective yet cheaper generic offering is available.

Although we are in the preliminary phase of understanding prescription drug brand personality, a counter action by industry regulators and bio-equivalent companies could be launched to mitigate any adverse effects on the patient-physician relationship and healthcare costs. Informative advertisement campaigns could be designed to emphasize physicians' role as a healthcare advisor, and remind patients that their physicians are trained to know what is best for them. Similarly, generic companies can also contribute by promoting bio-equivalents and highlighting their effectiveness and price advantage. As additional research and information is gathered, public policy makers will be in a position to better assess the necessary course of action.

Chapter 8: Limitations

This study makes important theoretical and practical contributions to the understanding of prescription drug brand personality, however it is appropriate to discuss the limitations of this research.

Study Design

Consistent with previous research within the field of brand personality, respondents were required to be sufficiently familiar with the brands in order to participate in the study. Respondents that were not familiar with any of the brands were immediately eliminated. In addition, in order to gather sufficient individual brand ratings, each respondent was required to be familiar with a minimum of five prescription drugs in order to answer the questionnaire. In the event that they were not familiar with a minimum of five brands, they were not permitted to complete the questionnaire. As a result of this study design, 46% of respondents were not permitted to answer the questionnaire. This presents some limitations on the generalizability of the findings to consumers that are not familiar with many prescription drugs. Notwithstanding the potential effect on the generalizability of the findings, the study design was deemed appropriate, as the priority was to ensure that participants were sufficiently familiar with the brands in order to attribute brand personality.

Data was aggregated across subjects and brands resulting in a "stacked" data structure of brand evaluations. As a result of this design, variation between brands and subjects was discounted, and meaningful relationships may have been lost. In an ideal scenario, each respondent would have provided brand ratings for each of the 15 brands,

across the 22 personality traits, resulting in a three-mode data analysis. This design was unfortunately not feasible due to risk of fatigue and lack of familiarity with all brands.

The fact that the analysis is based on personality perceptions of a relatively small number of branded prescription drugs that are heavily advertisied or prescribed is another limitation. The number of medical brands is not comparable to that of commercial brands, and therefore it was necessary to limit the selection of brands to highly familiar brands that have broad exposure in the market. In addition, consumers are not sufficiently familiar with the unbranded or generic versions of the brand to attribute a brand personality. Therefore, restricting the brand selction to highly advertised or highly prescribed branded drugs is justified in this study.

Trait generation was based on a variety of sources (established brand personality and human personality scales). Although care was taken during the trait generation phase of the research to ensure meaningful traits were included in the analysis, it is possible that certain traits were overlooked. Secondary research could be conducted to evaluate the inclusion of other personality traits not originally considered by this research.

Data

The sample was limited to residents of the United States as a result of the laws governing direct to consumer advertising. This may cause potential issues for generalizability across different nationalities and cultures. Prior research suggests that brand personality dimensions may vary by nationality and culture (Aaker J. , 1997; Aaker, Benet-Martinez, & Garolera, 2001; Sung & Tinkham, 2005) and it would therefore be prudent to validate the results with non-U.S. populations. Similarly, the sample was restricted to respondents over the age of 35. Within the context of this study,

this age category was deemed appropriate given the salience of the product category and the fact that the demographic profile of most prescription medication users are over the age of 35. Nonetheless, this may cause issues for generalizability to a younger population.

Finally, although the data was thoroughly examined prior to analysis, there may have been respondents who responded at random and did not report their true perceptions of brand personality. All extreme and consistent high or low rating patterns were eliminated, however the potential remains that random responses were included within the analysis. This is unfortunately an inherent risk of using an online survey company that compensates participants based on completion.

Chapter 9: Areas for Future Research

The early stages of brand personality research focused on the structure and measurement scales; however recently, the scope has been broadened to understanding the antecedents and consequences of brand personality on brand evaluations and consumer behaviour. Research by Louis and Lombart (2010) showed that not all brand personality traits have the same influence in the development of lasting consumer-brand relationships. Similarly, research by Sung and Kim (2010) suggested that certain dimensions of Aaker's BPS are more likely to influence the level of brand trust than brand affect (a positive emotional response). For example, the Sincerity and Ruggedness dimensions are more closely related to the level of brand trust, whereas the Excitement and Sophistication dimensions relate more closely to brand affect.

A fruitful area for future research would be to understand how the two dimensions of prescription drug brand personality, Competence and Innovativeness, might influence brand evaluations and consumer behaviour. Perhaps it could be hypothesized that the Competence dimension can increase consumers' trust in the brand, where as the Innovativeness dimension has a higher likelihood of eliciting brand affect.

From a managerial perspective, additional research in this regard could provide marketers with guidelines on how to create and market brand personalities to effectively enhance persuasion, increase brand trust and brand affect, and improve overall brand evaluations and image. All elements of the marketing mix, including the advertising, packaging, pricing, user imagery, symbols, public relations efforts, and celebrity endorsements could be manipulated to create and maintain a brand's personality (Aaker

J. , 1997; Sung & Kim, 2010). Understanding which brand personality dimension is best suited to improve brand evaluations and optimize purchase intentions is a powerful asset.

One of the main findings of this research suggests that brand familiarity, advertisement, and personal experience are antecedents of brand personality. Unfortunately, the proposed variables only accounted for a small portion of the explained variance in brand personality, and it is therefore necessary to investigate if other antecedents not considered in the current research actually exist. A secondary finding of this study suggests that brand personality may influence consumers' intention to request a referral from a physician. Additional research is necessary to clarify and confirm that brand personality is responsible for the change in intention to seek a referral, and not other variables that are highly correlated with brand personality.

In order to overcome certain limitations of the current study design and data, subsequent research could be done to confirm the stability and generalizability of the findings. The scale should be validated with an entirely new sample; with a new set of brands; across various cultures and age categories; and investigate the applicability of the scale to generic brands.

The ultimate purpose of any prescription medication is to improve wellbeing. Research has shown that simply taking a medication can cause patients to feel better. This phenomenon is known as the placebo effect, whereby a patient reports improved health, notwithstanding a lack of medically proven progress. Perhaps prescription drugs that are able to develop meaningful relationships with their users, by way of brand personality, will be more successful in improving the perceived effectiveness of a medication. Plausibly, brand personality can enhance perceived effectiveness.

Chapter 10: Conclusions

The foundation of prescription drug brand personality has been built throughout this work. This research has made meaningful contributions to the pharmaceutical industry (marketing practitioners and consumers), and to the theoretical study of brand personality.

The major findings are summarized as follows: (i) consumers are able to attribute human personality traits to prescription drugs; (ii) prescription drug brand personality is characterized by two-dimensions (Competence and Innovativeness); (iii) brand personality can be developed through a number of different ways, including brand familiarity, advertisement, and personal experience (usage), and the impact of these variables will be dependent on the type of brand personality being developed; and finally (iv) there is a significant relationship between brand personality and likelihood of requesting a prescription from a physician.

This research has provided pharmaceutical marketers with an effective measurement tool that will allow them to assess their current marketing strategies and strategically identify potential opportunities. The groundwork for future research has been established. Academics can continue to investigate the applicability of the brand personality construct to the pharmaceutical industry, and provide a deeper understanding of the antecedents and consequences of prescription drug brand personality. Finally, from a consumer perspective, prescription drug brand personality may make health-related issues more approachable and less intimidating, facilitating physician-patient interactions.

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Appendix A: Most Heavily Advertised & Prescribed Drugs

Top 20 U.S. Pharmaceutical Products by Sales (2010)

Rank	Brand	Sales (bln)	Medical Use
1	Lipitor	7.2	High Cholesterol
2	Nexium	6.3	Acid Reflux
3	Plavix	6.1	Blood Thinner
4	Advair	4.7	Asthma, respiratory
5	Abilify	4.6	Mental Health, depression
6	Seroquel	4.4	Mental Health
7	Singulair	4.1	Asthma, respiratory
8	Crestor	3.8	High Cholesterol
9	Actos	3.5	Diabetes
10	Epogen	3.3	Anemia
11	Remicade	3.3	Crohn's Disease, Rheumatoid Arthritis
12	Enbrel	3.3	Rheumatoid Arthritis, Crohn's Disease
13	Cymbalta	3.2	Mental Health, depression
14	Avastin	3.1	Oncology
15	Oxycontin	3.1	Pain Management
16	Neulasta	3.0	Oncology
17	Zyprexa	3.0	Mental Health
18	Humira	2.9	Crohn's Disease, Rheumatoid Arthritis
19	Lexapro	2.8	Mental Health
20	Rituxan	2.8	Oncology

Note. Source: IMS National Sales Perspectives

Top 20 Most Advertised Prescription Drugs (2010)

Rank	Brand	Media Spending (mln)	Medical Use
1	Lipitor	272.0	High Cholesterol
2	Cialis	220.6	Erectile Dysfunction
3	Cymbalta	206.0	Mental Health, depression
4	Advair	200.5	Asthma, respiratory
5	Abilify	155.7	Mental Health, depression
6	Symbicort	152.2	Asthma, COPD, respiratory
7	Pristiq	127.4	Mental Health, depression
8	Plavix	127.3	Blood Thinner
9	Chantix	122.2	Smoking Cessation
10	Lyrica	112.2	Diabetes, fibromyalgia
11	Toviaz	109.5	Bladder Control
12	Viagra	99.9	Erectile Dysfunction
13	Crestor	95.1	High Cholesterol
14	Boniva	85.2	Osteoporosis
15	Lovaza	80.7	High Cholesterol (triglycerides)
16	Seroquel	80.6	Mental Health, depression
17	Enbrel	71.5	Arthritis, psoriasis
18	Spiriva Arthritis	70.7	COPD, respiratory
19	Singulair	70.3	Asthma, allergy, respiratory
20	Simponi	70.1	Arthritis

Note. Source: Kantar Media. Totals include 17 measured media. Ranking based on Ad Age DataCenter analysis.

Appendix B: Research Instrument

CONSENT TO PARTICIPATE IN THE PRESCRIPTION DRUG BRAND PERSONALITY STUDY

This is to state that I agree to participate in a program of research being conducted by Lea Prevel Katsanis, Ph.D. of the Department of Marketing at Concordia University, (514) 848-2424 x 2770, lkats@jmsb.concordia.ca.

A. PURPOSE

I have been informed that the purpose of the research is to better understand if people use human characteristics or personality traits to describe specific prescription drugs.

B. PROCEDURES

I will be presented with a list of 22 personality traits that are often used to describe characteristics of people in daily life, but can also be used to describe products and services. I will be asked to indicate if I think each of the personality traits are descriptive of prescription drugs.

I will answer each question honestly.

Completing the questionnaire should take under fifteen minutes. No personally identifiable data will be gathered.

C. RISKS AND BENEFITS

Participants may benefit from further understanding how they describe prescription drugs.

D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without consequences.
- I understand that my participation in this study is confidential.
- I understand that the data collected from this survey and analyzed for this study may be published.
- I understand I will only receive compensation if the questionnaire is fully completed.

If at any time you have questions about the proposed research, please contact the study's Principal Investigator: Dr. Lea Katsanis, Department of Marketing, Concordia University, at (514) 848-2424 x 2770 or by email lkats@jmsb.concordia.ca.

If at any time you have questions about your rights as a research participant, please contact the Research Ethics and Compliance Advisor, Concordia University, at (514) 848-2424 x 7481 or by email ethics@alcor.concordia.ca.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

- Yes
- No

SECTION 1 – Screening Questions

Question 1

What is your gender?

- Male
- Female

Question 2

What is your Age?

- Under 18
- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65 or Above

Question 3

Please review the list of 15 prescription drugs, and indicate which brands you are **FAMILIAR** with.

Familiar means:
- You know which medical condition the drug is designed to treat;

AND

- You would rate your familiarity either 4 or 5 on a scale of 1 to 5 (1 being very unfamiliar, and 5 being very familiar);

CHECK ALL THAT APPLY:

- ✓ Abilify
- ✓ Advair
- ✓ Chantix
- ✓ Cialis
- ✓ Crestor
- ✓ Cymbalta
- ✓ Enbrel
- ✓ Lipitor
- ✓ Nexium
- ✓ Plavix
- ✓ Pristiq
- ✓ Seroquel
- ✓ Singulair
- ✓ Symbicort
- ✓ Viagra
- ✓ I am not familiar with any of these brands

Question 4

Of the prescription drugs listed below, please indicate which **5 brands** you are MOST familiar with.

- ✓ Abilify
- ✓ Advair
- ✓ Chantix
- ✓ Cialis
- ✓ Crestor
- ✓ Cymbalta
- ✓ Enbrel
- ✓ Lipitor
- ✓ Nexium
- ✓ Plavix
- ✓ Pristiq
- ✓ Seroquel
- ✓ Singulair
- ✓ Symbicort
- ✓ Viagra

SECTION 2 - Prescription Drug Brand Personality

Question 1

The following adjectives are mostly used to describe characteristics of people in daily life. However, some of them can be used to describe products, services, or prescription medications. This may sound unusual, but we would like you to think of Brand 1 as if it was a person. We are interested in finding out which personality traits or human characteristics come to mind. To assist you, we have preselected 22 personality traits, and would ask that you please indicate the extent to which you think that each of the personality traits describe Brand 1.

For example, you might think that the human characteristics associated with Pepto Bismol are kind, warm, caring, soothing, gentle, trustworthy and dependable. The human characteristics associated with Dr. Pepper might be non-conforming, fun, interesting, exciting, and off-beat.

On a scale of 1 to 5, please indicate the extent to which you thing the following adjectives are descriptive of Brand 1.

1 = Not at all Descriptive
2 = Not Descriptive
3 = Somewhat Descriptive
4 = Descriptive
5 = Very Descriptive

• Original	1	2	3	4	5	• Dependable	1	2	3	4	5
• Technical	1	2	3	4	5	• Simple	1	2	3	4	5
• Optimistic	1	2	3	4	5	• Resourceful	1	2	3	4	5
• Hard working	1	2	3	4	5	• Stable	1	2	3	4	5
• Practical	1	2	3	4	5	• Caring	1	2	3	4	5
• Reliable	1	2	3	4	5	• Up-to-date	1	2	3	4	5
• Confident	1	2	3	4	5	• Intelligent	1	2	3	4	5
• Dynamic	1	2	3	4	5	• Unique	1	2	3	4	5
• Responsible	1	2	3	4	5	• Solution Oriented	1	2	3	4	5
• Innovative	1	2	3	4	5	• Precise	1	2	3	4	5
• Successful	1	2	3	4	5	• Serious	1	2	3	4	5
• Dependable	1	2	3	4	5						

Question 2

When was the last time you saw an advertisement for Brand 1?

- In the past 7 days
- In the past 30 days
- In the past 180 days
- In the past 365 days
- More than a year ago
- Never
- Can't remember

Question 3

Where did you first learn about Brand 1?

- Medical Professional
- Family or Friend
- Advertisement
- Internet
- Social media
- Other, please specify:

Question 4

Have you ever had a prescription for Brand 1?

- Yes
- No
- Prefer not to answer

Question 5

Have you ever had a prescription for a similar brand?

- Yes
- No
- Prefer not to answer

Question 6

Do you know someone that has had a prescription for Brand 1?

- Yes
- No
- Prefer not to answer

Question 7

If you had this medical condition, how likely would you be to seek a prescription from a medical professional for Brand 1?

1 = Definitely Not
2 = Not Likely
3 = Likely
4 = Very Likely
5 = Definitely

SECTION 3 - Demographic Information

Question 1

What is the highest level of education that you have completed?

- High school diploma or less
- College graduate or beyond

Question 2

What is your race / ethnic background?

- White / Caucasian
- Spanish / Hispanic / Latino
- Black / African American
- Asian
- Pacific Islander
- Native American
- Other
- Prefer Not to Answer

Question 3

What is your total household income?

- Under $20,000
- $20,000 - $29,999
- $30,000 - $39,999
- $40,000 - $49,999
- $50,000 - $74,999
- $75,000 - $99,999
- $100,000 or more
- Prefer Not to Answer

Question 4

Which state do you live in?

Question 5

In the past 12 months, how many times have you been to see a physician?

- 1 - 5 Times
- 6 – 9 Times
- 10 Times or more

Question 6

I work in a medical related field

- Yes
- No

THANK YOU!!!!

Appendix C: Statistical Outputs

Factor Analysis 1: Principal Axis – Varimax Rotation – All 22 Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.980
Bartlett's Test of Sphericity	Approx. Chi-Square	36123.448
	df	231
	Sig.	.000

Communalities

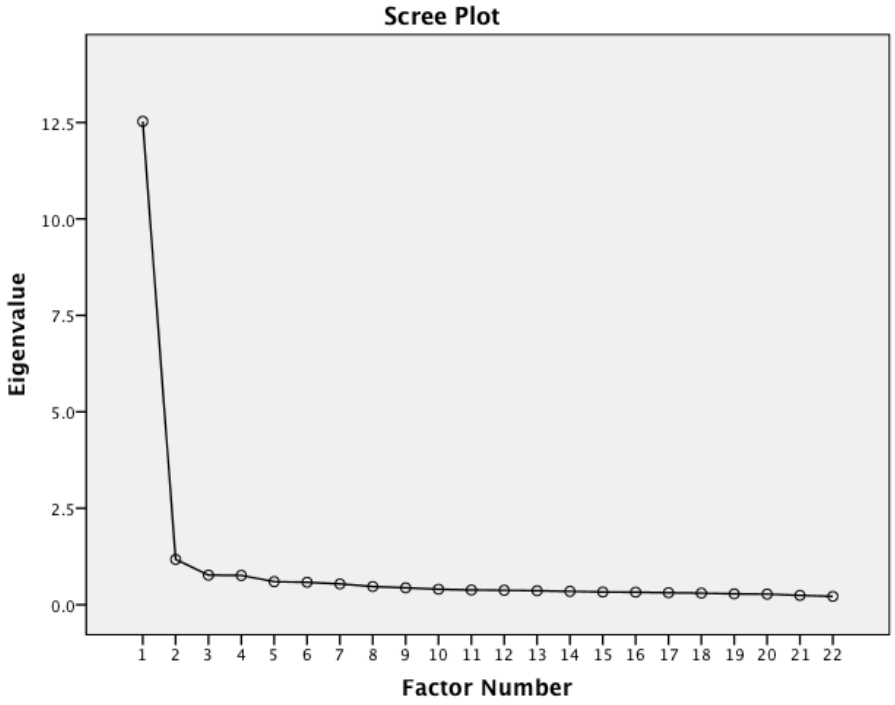
	Initial
Original	.545
Confident	.640
Simple	.308
Intelligent	.663
Technical	.368
Dynamic	.569
Unique	.578
Optimistic	.564
Responsible	.680
Stable	.627
Solution Oriented	.526
Hard Working	.645
Resourceful	.623
Innovative	.647
Caring	.594
Precise	.591
Practical	.572
Successful	.650
Up-to-date	.566
Serious	.487
Reliable	.695
Dependable	.709

Extraction Method: Principal Axis Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.526	56.938	56.938	7.317	33.257	33.257
2	1.174	5.338	62.276	5.595	25.431	58.688
3	.767	3.488	65.764			
4	.759	3.451	69.215			
5	.598	2.717	71.932			
6	.582	2.646	74.578			
7	.538	2.447	77.025			
8	.471	2.142	79.167			
9	.438	1.993	81.160			
10	.401	1.824	82.983			
11	.381	1.730	84.714			
12	.375	1.705	86.419			
13	.363	1.649	88.068			
14	.346	1.574	89.642			
15	.329	1.494	91.135			
16	.324	1.474	92.610			
17	.310	1.410	94.020			
18	.300	1.365	95.385			
19	.282	1.282	96.668			
20	.275	1.248	97.916			
21	.242	1.101	99.017			
22	.216	.983	100.000			

Extraction Method: Principal Axis Factoring.



Rotated Factor Matrix[a]

	Factor	
	1	2
Original	.302	.682
Confident	.628	.494
Simple	.467	.249
Intelligent	.566	.582
Technical	.294	.515
Dynamic	.475	.585
Unique	.231	.763
Optimistic	.541	.501
Responsible	.692	.434
Stable	.716	.357
Solution Oriented	.596	.395
Hard Working	.670	.456
Resourceful	.553	.575
Innovative	.393	.730
Caring	.581	.487
Precise	.616	.471
Practical	.664	.368
Successful	.705	.377
Up-to-date	.481	.586
Serious	.481	.502
Reliable	.780	.308
Dependable	.807	.276

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Factor Analysis 2: Principal Axis – Varimax Rotation – 10 Retained Variables

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.937
Bartlett's Test of Sphericity	Approx. Chi-Square	15082.093
	df	45
	Sig.	.000

Communalities

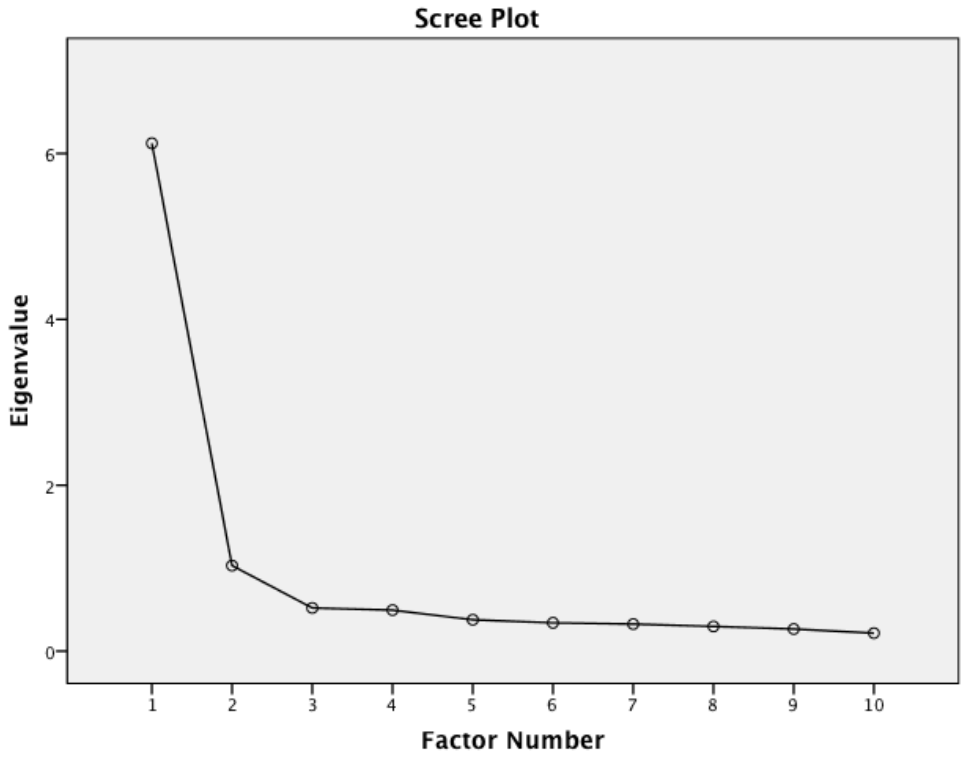
	Initial
Original	.534
Unique	.557
Innovative	.603
Responsible	.622
Stable	.599
Solution Oriented	.496
Practical	.537
Successful	.623
Reliable	.688
Dependable	.700

Extraction Method: Principal Axis Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.124	61.235	61.235	4.092	40.920	40.920
2	1.032	10.319	71.554	2.396	23.959	64.879
3	.520	5.203	76.757			
4	.495	4.949	81.706			
5	.378	3.783	85.489			
6	.342	3.420	88.910			
7	.326	3.261	92.170			
8	.298	2.983	95.153			
9	.267	2.669	97.822			
10	.218	2.178	100.000			

Extraction Method: Principal Axis Factoring



Rotated Factor Matrix[a]

	Factor	
	1	2
Original	.327	.716
Unique	.252	.809
Innovative	.442	.691
Responsible	.712	.371
Stable	.726	.322
Solution Oriented	.619	.356
Practical	.671	.334
Successful	.725	.346
Reliable	.802	.299
Dependable	.831	.253

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 3 iterations.

Regression Analysis – Model 1

Independent Variables:

- Brand Familiarity (High = 1 / Low = 0)
- Annual Advertising Expenditure (High = 1 / Low = 0)
- Prior Use (Yes = 1 / No = 0)
- Recent Media Exposure (Last 7 days = 1 / Other = 0)

Dependent Variables:

- BPC (Brand Personality – Competence) (Factor Score)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Usage, Familiarity, RecentAd, Adexpenditure[b]	.	Enter

a. Dependent Variable: BPC

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.137[a]	.019	.017	.92246992

a. Predictors: (Constant), Usage, Familiarity, RecentAd, Adexpenditure

b. Dependent Variable: BPC

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.905	4	8.976	10.548	.000[b]
	Residual	1863.582	2190	.851		
	Total	1899.487	2194			

a. Dependent Variable: BPC

b. Predictors: (Constant), Usage, Familiarity, RecentAd, Adexpenditure

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.157	.068		-2.308	.021		
	Familiarity	.278	.062	.095	4.460	.000	.992	1.008
	Adexpenditure	-.179	.045	-.085	-3.998	.000	.983	1.017
	RecentAd	.080	.045	.038	1.793	.073	.989	1.012
	Usage	.109	.047	.049	2.313	.021	.992	1.008

a. Dependent Variable: BPC

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Familiarity	Adexpenditure	RecentAd	Usage
1	1	3.354	1.000	.01	.01	.02	.03	.02
	2	.743	2.124	.00	.00	.01	.16	.82
	3	.652	2.267	.01	.01	.03	.79	.10
	4	.197	4.122	.03	.16	.85	.00	.04
	5	.053	7.985	.95	.82	.08	.02	.02

a. Dependent Variable: BPC

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.3356881	.3103422	.0053488	.12792604	2195
Residual	-3.43835378	2.09467340	0E-8	.92162863	2195
Std. Predicted Value	-2.666	2.384	.000	1.000	2195
Std. Residual	-3.727	2.271	.000	.999	2195

a. Dependent Variable: BPC

Regression Analysis – Model 2

Independent Variables:

- Brand Familiarity (High = 1 / Low = 0)
- Annual Advertising Expenditure (High = 1 / Low = 0)
- Prior Use (Yes = 1 / No = 0)
- Recent Media Exposure (Last 7 days = 1 / Other = 0)

Dependent Variables:

- BPI (Brand Personality – Innovativeness) (Factor Score)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Usage, Familiarity, RecentAd, Adexpenditure[b]	.	Enter

a. Dependent Variable: BPI
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.161[a]	.026	.024	.87544679

a. Predictors: (Constant), Usage, Familiarity, RecentAd, Adexpenditure
b. Dependent Variable: BPI

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.946	4	11.237	14.661	.000[b]
	Residual	1678.432	2190	.766		
	Total	1723.378	2194			

a. Dependent Variable: BPI
b. Predictors: (Constant), Usage, Familiarity, RecentAd, Adexpenditure

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.223	.064		-3.467	.001		
	Familiarity	.020	.059	.007	.342	.733	.992	1.008
	Adexpenditure	.148	.042	.074	3.490	.000	.983	1.017
	RecentAd	.240	.043	.120	5.636	.000	.989	1.012
	Usage	.152	.045	.072	3.419	.001	.992	1.008

a. Dependent Variable: BPI

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	Familiarity	Adexpenditure	RecentAd	Usage
1	1	3.354	1.000	.01	.01	.02	.03	.02
	2	.743	2.124	.00	.00	.01	.16	.82
	3	.652	2.267	.01	.01	.03	.79	.10
	4	.197	4.122	.03	.16	.85	.00	.04
	5	.053	7.985	.95	.82	.08	.02	.02

a. Dependent Variable: BPI

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.2234721	.3372518	.0015567	.14312897	2195
Residual	-2.77116323	1.96929300	0E-8	.87464839	2195
Std. Predicted Value	-1.572	2.345	.000	1.000	2195
Std. Residual	-3.165	2.249	.000	.999	2195

a. Dependent Variable: BPI

Regression Analysis – Model 3

Independent Variables:

- BPC (Brand Personality – Competence) (Factor Score)
- BPI (Brand Personality – Innovativeness) (Factor Score)
- Brand Familiarity (High = 1 / Low = 0)
- Annual Advertising Expenditure (High = 1 / Low = 0)
- Prior Use (Yes = 1 / No = 0)
- Recent Media Exposure (Last 7 days = 1 / Other = 0)

Dependent Variables:

- Intention to seek a referral (1 = definitely no; 5 = definitely)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	RecentAd, BPC, Usage, Familiarity, Adexpenditure, BPI[b]	.	Enter

a. Dependent Variable: Referral
b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567[a]	.322	.320	1.058

a. Predictors: (Constant), RecentAd, BPC, Usage, Familiarity, Adexpenditure, BPI
b. Dependent Variable: Referral

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1162.683	6	193.781	173.193	.000[b]
	Residual	2448.082	2188	1.119		
	Total	3610.765	2194			

a. Dependent Variable: Referral
b. Predictors: (Constant), RecentAd, BPC, Usage, Familiarity, Adexpenditure, BPI

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.033	.078		38.816	.000		
	BPC	.609	.025	.442	24.594	.000	.961	1.040
	Familiarity	.140	.072	.035	1.946	.052	.983	1.017
	Adexpenditure	-.011	.052	-.004	-.209	.835	.969	1.032
	Usage	.535	.054	.175	9.895	.000	.985	1.015
	BPI	.305	.026	.211	11.690	.000	.954	1.048
	RecentAd	.162	.052	.056	3.119	.002	.974	1.027

a. Dependent Variable: Referral

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions						
				(Constant)	BPC	Familiarity	Adexpenditure	Usage	BPI	RecentAd
1	1	3.358	1.000	.01	.00	.01	.02	.02	.00	.03
	2	1.159	1.702	.00	.39	.00	.00	.01	.41	.01
	3	.876	1.957	.00	.54	.00	.00	.01	.47	.04
	4	.736	2.136	.00	.05	.00	.01	.80	.01	.15
	5	.627	2.315	.01	.00	.01	.03	.11	.10	.76
	6	.193	4.176	.03	.02	.16	.86	.03	.02	.00
	7	.052	8.016	.95	.00	.82	.08	.02	.00	.02

a. Dependent Variable: Referral

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.97	4.89	3.32	.728	2195
Residual	-3.535	3.273	.000	1.056	2195
Std. Predicted Value	-3.229	2.156	.000	1.000	2195
Std. Residual	-3.342	3.094	.000	.999	2195

a. Dependent Variable: Referral

Regression Analysis – Model 3 – Stepwise Multiple Regression

Independent Variables:

- BPC (Brand Personality – Competence) (Factor Score)
- BPI (Brand Personality – Innovativeness) (Factor Score)
- Brand Familiarity (High = 1 / Low = 0)
- Annual Advertising Expenditure (High = 1 / Low = 0)
- Prior Use (Yes = 1 / No = 0)
- Recent Media Exposure (Last 7 days = 1 / Other = 0)

Dependent Variables:

- Intention to seek a referral (1 = definitely no; 5 = definitely)

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.486[a]	.236	.236	1.122
2	.536[b]	.287	.286	1.084
3	.564[c]	.318	.317	1.060
4	.566[d]	.321	.320	1.058

a. Predictors: (Constant), BPC
b. Predictors: (Constant), BPC, BPI
c. Predictors: (Constant), BPC, BPI, Usage
d. Predictors: (Constant), BPC, BPI, Usage, RecentAd
e. Dependent Variable: Referral

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	852.317	1	852.317	677.603	.000[b]
	Residual	2758.448	2193	1.258		
	Total	3610.765	2194			
2	Regression	1036.602	2	518.301	441.354	.000[c]
	Residual	2574.163	2192	1.174		
	Total	3610.765	2194			
3	Regression	1148.402	3	382.801	340.614	.000[d]
	Residual	2462.363	2191	1.124		
	Total	3610.765	2194			
4	Regression	1158.442	4	289.610	258.631	.000[e]
	Residual	2452.324	2190	1.120		
	Total	3610.765	2194			

a. Dependent Variable: Referral
b. Predictors: (Constant), BPC
c. Predictors: (Constant), BPC, BPI
d. Predictors: (Constant), BPC, BPI, Usage
e. Predictors: (Constant), BPC, BPI, Usage, RecentAd

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.315	.024		138.491	.000		
	BPC	.670	.026	.486	26.031	.000	1.000	1.000
2	(Constant)	3.315	.023		143.318	.000		
	BPC	.626	.025	.454	24.910	.000	.980	1.020
	BPI	.330	.026	.228	12.527	.000	.980	1.020
3	(Constant)	3.191	.026		123.670	.000		
	BPC	.614	.025	.445	24.969	.000	.978	1.022
	BPI	.314	.026	.217	12.149	.000	.976	1.024
	Usage	.538	.054	.177	9.974	.000	.993	1.007
4	(Constant)	3.151	.029		108.558	.000		
	BPC	.613	.025	.445	24.987	.000	.978	1.023
	BPI	.304	.026	.210	11.712	.000	.962	1.040
	Usage	.534	.054	.175	9.914	.000	.992	1.008
	RecentAd	.154	.052	.053	2.994	.003	.983	1.017

a. Dependent Variable: Referral

Excluded Variables[a]

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	Familiarity	.026[b]	1.377	.169	.029	.993	1.008	.993
	Adexpenditure	.008[b]	.447	.655	.010	.993	1.007	.993
	Usage	.190[b]	10.421	.000	.217	.997	1.003	.997
	BPI	.228[b]	12.527	.000	.258	.980	1.020	.980
	RecentAd	.085[b]	4.562	.000	.097	.999	1.001	.999
2	Familiarity	.028[c]	1.535	.125	.033	.992	1.008	.973
	Adexpenditure	-.012[c]	-.670	.503	-.014	.985	1.015	.972
	Usage	.177[c]	9.974	.000	.208	.993	1.007	.976
	RecentAd	.058[c]	3.172	.002	.068	.984	1.017	.965
3	Familiarity	.031[d]	1.740	.082	.037	.992	1.008	.971
	Adexpenditure	.002[d]	.140	.889	.003	.979	1.022	.967
	RecentAd	.053[d]	2.994	.003	.064	.983	1.017	.962
4	Familiarity	.034[e]	1.936	.053	.041	.988	1.012	.962
	Adexpenditure	-.001[e]	-.066	.947	-.001	.974	1.027	.954

a. Dependent Variable: Referral
b. Predictors in the Model: (Constant), BPC
c. Predictors in the Model: (Constant), BPC, BPI
d. Predictors in the Model: (Constant), BPC, BPI, Usage
e. Predictors in the Model: (Constant), BPC, BPI, Usage, RecentAd

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions				
				(Constant)	BPC	BPI	Usage	RecentAd
1	1	1.006	1.000	.50	.50			
	2	.994	1.006	.50	.50			
2	1	1.141	1.000	.00	.43	.43		
	2	1.000	1.068	1.00	.00	.00		
	3	.859	1.152	.00	.57	.57		
3	1	1.490	1.000	.25	.01	.01	.25	
	2	1.135	1.146	.02	.41	.41	.00	
	3	.859	1.317	.00	.57	.56	.00	
	4	.516	1.700	.73	.00	.01	.74	
4	1	1.868	1.000	.13	.00	.01	.12	.12
	2	1.135	1.283	.01	.42	.41	.00	.00
	3	.869	1.467	.00	.54	.51	.02	.02
	4	.720	1.611	.00	.03	.04	.56	.41
	5	.408	2.141	.85	.00	.04	.30	.44

a. Dependent Variable: Referral

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.01	4.86	3.32	.727	2195
Residual	-3.514	3.304	.000	1.057	2195
Std. Predicted Value	-3.181	2.126	.000	1.000	2195
Std. Residual	-3.320	3.122	.000	.999	2195

a. Dependent Variable: Referral