

WINE LABEL DESIGN PREFERENCES AND PURCHASE BEHAVIOR OF
MILLENNIALS

A Thesis

by

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ABSTRACT

Marketers of wine companies are expanding their efforts to capture the newest generation of wine drinkers, Millennials. Further research is needed to understand this generation as wine consumers. In this study, we investigated the factors that influence Millennials' wine purchasing behavior and what characteristics of wine labels are most desirable, unattractive, and appear valuable to Millennials. Also, virtual reality incorporated into wine labels is a new marketing phenomenon. Little or no evident research has been done to understand if this adds value to a product and encourages Millennials to recommend the wine or purchase it. The target population for this study was Millennials between the ages of 21 and 37, and the sample consisted of 68 self-selected participants. A cross-sectional, quantitative, case study design was used and data were collected using two methods: Tobii Pro X2-60 eye tracking and a questionnaire. Based on the results of this study, we concluded Millennials purchase and/or consume wine weekly or multiple times per month. Millennials reported spending between \$10.00 - \$14.99 per bottle of wine, and the majority of the participants purchased their wine at the grocery store. Millennials included in this study reported being open to change and enjoy multiple types of wine. When creating a label with Millennials as the target consumer, it is important for wine makers and/or marketers to include the type of wine and the description of taste on the label, as these elements are the most influential in aiding purchasing decisions. Millennials indicated traditional labels were more attractive in comparison to non-traditional labels, favoring the layouts, names, and logos. Based on eye-tracking results, the greatest number of fixations

occurred in the background of wine labels. Smaller elements on a wine label were viewed for longer durations, and elements that did not require deep cognitive processing, such as the name, were viewed for less time. Also, experiencing virtual reality changed the elements participants fixate on the most, and the duration of those fixations. The virtual reality aspect also added value to the product, based on the perceived value of the wine. Millennials enjoyed the virtual reality experience, believe it was easy to use, and reportedly will download and recommend the app to others.

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NOMENCLATURE

Ads	Advertisements
AGLS	Agriculture and Life Sciences
AMA	American Marketing Association
AOI	Area of Interest
AR	Augmented reality
DMRDL	Digital Media Research and Development Laboratory
POP	Point of purchase
QR	Quick response
SEO	Search engine optimization
SEV	Search engine visibility
VE	Virtual environment
VR	Virtual Reality
WOM	Word of mouth

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CHAPTER I

INTRODUCTION

The American Marketing Association (AMA) defined marketing as “...the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large” (2013, para. 1). Marketers play an important role in a company’s success. Pride and Ferrell (2016) explained that the essence of marketing is to develop satisfying exchanges between both customers and organizations, where they both benefit. Customers are the focal point of all marketing activities, and marketers focus on making the product available in the right place at the right time, with enough information for consumers to feel comfortable making a purchase. It is essential for marketers to have relationships with their customers and make them feel engaged with a company or brand. Smith (2017) said, “Relationships are driving spending. That’s how value is being exchanged” (para. 9).

Products can be classified as consumer products and business products. For the purpose of this study, the focus will be on consumer products: products purchased to satisfy personal and family needs (Pride & Ferrell, 2016). When consumers create emotional bonds with a company, they chose that brand over others and will continue to repurchase products from them (Sashi, 2012). This level of customer satisfaction can lead to brand loyalty, and then engagement, which will be presented as a psychological process in the next chapter (Bowden, 2009; Brodie, Ilic, Juric, & Hollebeek, 2013; Sashi, 2012). It is important for consumers to feel engaged with an organization or brand so

that they view marketers as trusted advisors (Hagel, 2017). When consumers are engaged, they often share their emotions and feelings with others, which can bring new and prospective customers to a brand.

CHAPTER II

LITERATURE REVIEW

Consumer Engagement

The interest in the concept of *engagement* has increased in marketing literature since the early 2000s. Consumers and brands involvement with each other has helped facilitate relationships where the consumers feel engaged with the brand, or even identify with it (Sprott, Czellar, & Spangenberg, 2009). Understanding what consumers believe to be engaging or adding value to a brand or product is crucial for marketer's success. In this chapter, I will describe consumer engagement and the psychological process that consumers undergo from their first introduction to a brand to potentially becoming an engaged customer. Consumers vary in their levels of engagement with a brand. Therefore, I will explain the different levels and categories of engagement and how marketers use this information to promote their products. Also, I will present engagement and measurements for both retail and physical environments, along with best practices and promotions for either environment. It is beneficial to know the different classifications and categories of products, along with the platforms and mediums used to market and sell them. Lastly, I will present the theoretical framework for the study, and explain how consumer engagement will be studied, using Bandura's Social Cognitive Theory (1986). Fully understanding consumer engagement is imperative, before proceeding to the next chapter.

Many definitions have arisen for the term "engagement." The term is broadly used and should be differentiated from the terms "involvement" and "participation"

(Brodie et al., 2013). Much progress in defining participation and involvement was made in the 90s (File, Judd, & Prince, 1992). Involvement is defined by Mitchell (1979) as an individual level or state that "...indicates the amount of arousal, interest or drive evoked by a particular stimulus or situation." Participation is viewed as a level of behavior, observable in the connection of a consumer and the delivery of a service or good (File et al., 1992; Hwang, 1999). Sashi (2012) described consumer engagement as focusing on "...satisfying customers by providing superior value than competitors to build trust and commitment in long-term relationships" (p. 260) It is critical to engage with consumers before, during, and after their purchase, and marketers should be able to provide them with high quality information that is readily available (Bashar & Wasiq, 2012). Customers who are engaged with a brand build emotional bonds through exchanges (Sashi, 2012). Because consumers make a majority of their purchases based on emotion (Gallup, 2014), organizations should thrive to market themselves in a positive way, reassuring consumers of their loyalty to a brand of choice (Bashar & Wasiq, 2012).

Engagement as a Process or Cycle

Consumer engagement has been viewed as a *psychological process* that can guide consumers to brand loyalty (Bowden, 2009). Consumers move through different engagement stages, in which they may experience different intensity levels. This process is highly interactive and is initiated by consumers' "need for information" (Brodie et al., 2013). Sashi (2012) proposed an engagement cycle that presents the stages of customer engagement, similar to the psychological process mentioned by Bowden (2009) and

Brodie et al. (2013): connection, interaction, satisfaction, retention, commitment, advocacy, and engagement. The stages are typically sequential, starting with connection and if successful, end in engagement. The stages are subsequently described below and a visual demonstration is available in Figure 1.

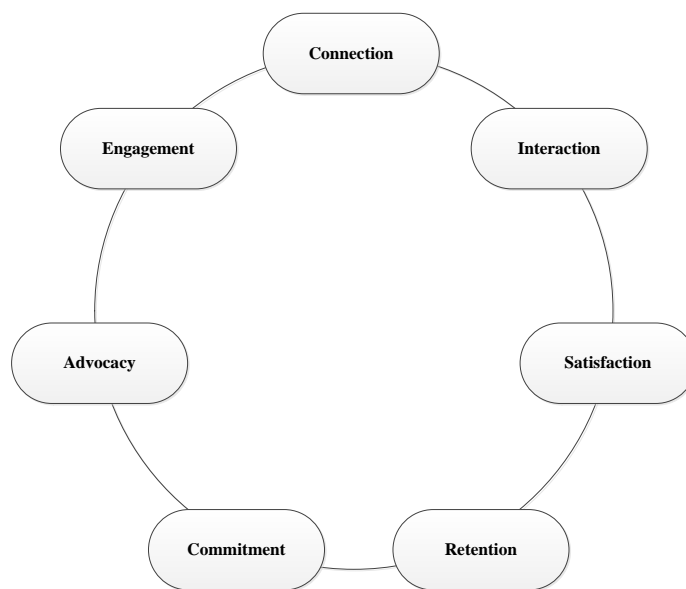


Figure 1. Consumer engagement presented as a psychological process (Derived from Bowden, 2009, Brodie et al., 2013, and Sashi, 2012).

Connection. To establish a relationship between a consumer and a company or brand, an initial connection must be made in traditional offline methods, including salespeople and word of mouth (WOM), or through online methods including social media and social networking (Sashi, 2012).

Interaction. A new customer can begin to interact with other customers or sales personnel to receive information or input about a product or brand (Sashi, 2012).

Traditional forms of interaction with consumers can be limited, and a rise of interaction is taking place through the Internet and social media. Tsai and Men (2013) said, “Social networking sites are virtual communities constructed around social relationships” (p. 79). Users are engaging in active interactions with others online. Emotionally, these interactions generate a sense of belonging to the brand community (Brodie et al., 2013).

Satisfaction. Customer satisfaction with a product, brand, or company is crucial for success. When a consumer feels they are emotionally connected to a business, and that it brings them value, they tend to spend more money or repurchase a product. Customers will oppose other options when they are satisfied with a brand or product (Gallup, 2014). Satisfaction “...is viewed as simply initiating a transitioning sequence initially toward a state of calculative commitment and ultimately toward a state of enduring brand commitment” (Bowden, 2009, p.71). Without satisfaction, it is unlikely that the next step, retention, will occur (Sashi, 2012).

Retention. Retention can be defined as “...a preservation of the aftereffects of experience and learning that makes recall or recognition possible” (Merriam-Webster, para. 1). When consumers purchase a product that results in satisfaction, retention is likely. This can occur from accumulated satisfaction with purchases over time or extremely positive emotions (Sashi, 2012). Bojei, Julian, Che Wel, and Ahmd (2013) studied the link between relationship marketing tools and consumer retention. They hypothesized that customer service, loyalty/reward programs, personalization, and brand

community would have a significant positive impact on customer retention. Customer service positively impacted retention and proved to be a key determining factor in choice of retailer. Customers who believed they received good customer service were more likely to purchase from a store, which fostered brand loyalty. Loyalty and reward programs were also successful in retaining customers because the customer felt committed to a relationship and wanted to receive a reward which benefitted both the retailer and the consumer. Personalization and customer retention also yielded a positive relationship. Store personnel should provide personalized treatment to their frequent shoppers, while also remembering that every customer is different and their needs will vary. And lastly, a positive relation between brand community and retention was found. Bojei et al. (2013) said, “This must be built by establishing a good social bond with its customers via friendships between customers, and a store atmosphere that is exciting, warm and friendly and one that is conducive to interaction between customers and front line staff” (p.179).

Commitment. Commitment is a psychological attachment that creates a bond and motivates customers to stay in a relationship with a brand or company (Vivek, Beatty, & Morgan, 2012). Commitment is a conscious decision made by the consumer and reflects a positive attitude and loyalty toward a brand (Beerli, Martin, & Quintana, 2001). Customers who feel strong loyalty toward a company and consider themselves engaged in a brand reported trust in a brand, which helped create a long term relationship (Sashi, 2012). Although commitment implies brand loyalty, brand loyalty does not imply commitment. Bowden (2009) explained that brand loyal customers may switch between

brands, but committed customers are less likely to deviate from a brand, due to high satisfaction. Satisfied and committed customers are more likely to provide positive WOM and advocate for the brand (Vivek et al., 2012).

Advocacy. Brodie et al. (2013) described advocacy as “...an expression of consumer engagement, which occurs when consumers actively recommend specific brands, products/services, organizations, and/or ways of using products or brands” (p.111). Both sellers and customers can become advocates for each other. This relationship occurs when a customer trusts the seller (Sashi, 2012). Tsai and Men (2013) found that consumers who visited a social networking page and perceived similarities with other users were more likely to become advocates, due to a sense of community and belonging.

Engagement. The final and most important step of the process or cycle is engagement. Both customer delight and loyalty are necessary for customer engagement (Sashi, 2012). It is important for individuals who are responsible for developing, implementing, and/or managing one or more brands for a group, organization, and/or company to remember that relationships are two-way and relationships must be maintained by both the consumer and the provider (Bojei et al., 2013; Vivek et al., 2012).

Elements of Sashi’s (2012), Brodie et al.’s (2013), and Bowden’s (2009) psychological process will be incorporated into this study. Marketers should know how consumers are becoming aware of their products (connection) and monitoring the platforms and mediums used to communicate their thoughts and opinions with a brand or

with other consumers (interaction). I will also evaluate what product characteristics are satisfying and foster retention, and advocate the product or brand to other consumers.

By asking participants about their shopping habits, sources of information and news, preferences and opinions of certain product characteristics and environments, I can summarize the best ways for marketers to promote their products and cultivate engaged consumers. Also, marketers should identify which stage of the process consumers are currently in, along with assessing their level of engagement, to decide on their promotional tactics and efforts.

Customers' Levels of Engagement

Beyond the sequence, levels of engagement are also important to consider. When marketers know the level of engagement their customers are involved in, they can market to consumers differently to better fit their needs (Smith, 2017). Gallup has more than 80 years of experience researching attitudes and behaviors of consumers, and presenting analytics and information to help companies succeed. Through market research, Gallup (2014) categorized customers into three levels of engagement: fully engaged, indifferent, and actively disengaged. Gallup's (2014) three levels, ranking from most engaged to least engaged consumers are presented below.

Fully engaged customers are the companies most valuable and profitable customer. They are extremely brand loyal and will not accept any substitutes for a product (Gallup, 2014).

Indifferent customers are perceived as neutral both emotionally and rationally.

They have a “take-it-or-leave-it” attitude (Gallup, 2014).

Actively disengaged customers are emotionally detached from a brand or company and they will readily switch brands (see Figure 2).

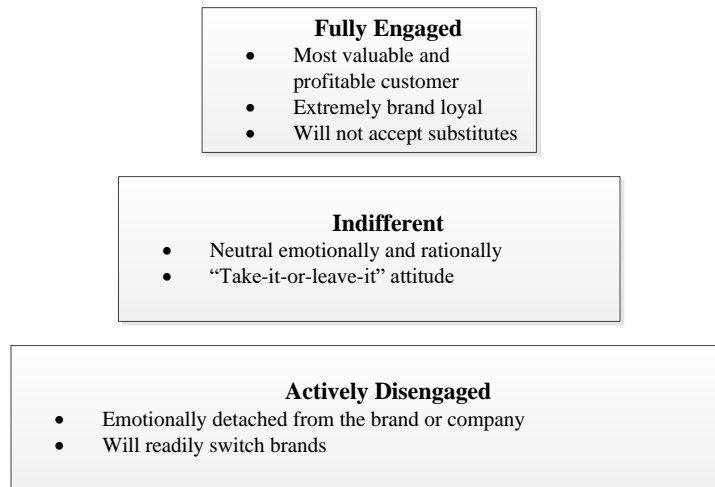


Figure 2. Gallup’s levels of customer engagement, ranking from high to low.

Companies should measure their levels of engagement and take action toward maximizing customer relationships, which in return will help generate higher sales, growth, and profitability (Gallup, 2014).

Sashi (2012) placed customers in the engagement cycle in terms of their bonds with an organization/brand and the degree of their relationship. The four categories are: transactional customers, delighted customer, loyal customers, and fans. The categories of

consumer engagement, ranking from the high (fans) to the low (transactional) (see Figure 3).

Transactional customers are similar to Gallup's (2014) indifferent customer. They are looking for the best deal and will switch between brands frequently to acquire the best price (Sashi, 2012)

Delighted customers share qualities encompassed by the fully engaged customer. Gallup (2014) mentioned they have highly-positive emotions and satisfaction toward a brand. A difference is, the customer does not make frequent transaction, although they favor the brand (Sashi, 2012).

Loyal customers: Sashi (2012) described loyal customers as "...in relationships characterized by calculative commitment in which switching costs or lack of alternative suppliers creates lock-in or stickiness with current supplier" (p. 266). This relationship develops over time and can become a long-term relationship that is mutually beneficial (Pan, Sheng, & Xie, 2012). The customer feels a "barrier to exit," and because of this their loyalty remains over time (Sashi, 2012).

Fans: Fans, similar to the term used for supporters of sports teams, become advocates and truly trust the sellers or brand. They are supportive and happy for the brand when they are succeeding and feel sorrow when they submit to failure (Sashi, 2012).

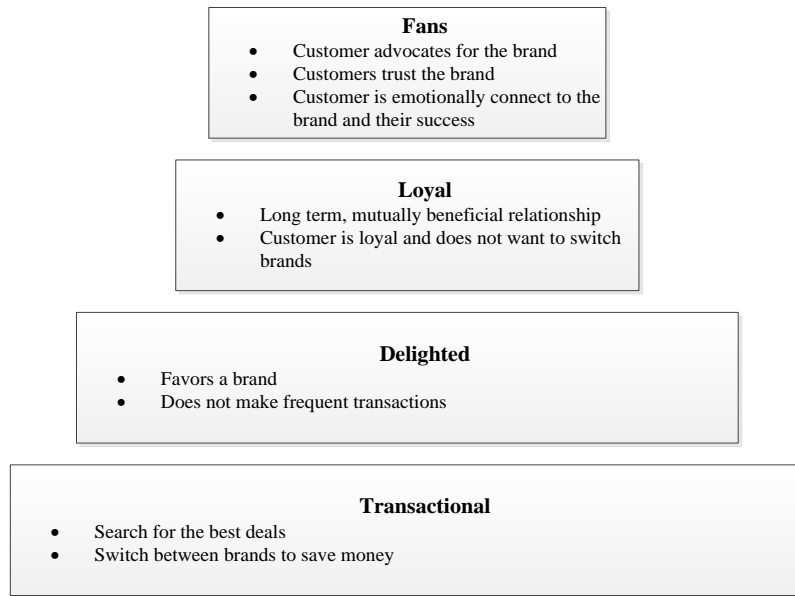


Figure 3. Sashi’s levels of customer engagement, ranking from high to low.

Categories of Engagement

Bowden (2011) described consumer engagement as a multidimensional concept. Lavidge and Steiner (1961) categorized engagement as cognitive (realm of thoughts), affective (realm of emotions), and conative (realm of motives) and presented them as steps that began with awareness and ended with purchase. Recent literature has shown a change in categories. Dessart, Veloutsou, and Thomas (2015) acknowledged three different and more recently adopted categories for engagement: affective engagement, cognitive engagement, and behavioral engagement.

Affective Engagement. Affective engagement captures the levels of emotion experienced by a consumer and “... transpires through long-lasting and recurrent feelings, rather than one-off emotions” (Dessart et al., 2015, p. 35). They further

described affective engagement as enthusiasm and enjoyment, where-consumers felt excitement and pleasure interacting with others in a brand community.

Cognitive Engagement. Cognitive engagement is an active mental state that consumers experience. They voluntarily devote their attention to a brand and become invested. Consumers can spend time actively thinking about a brand. A high level of concentration and immersion can then be viewed as absorption. Consumers may feel as though they cannot detach from a brand or platform like social media or online communities, because they want to be engaged with other consumers as they evaluate their opinions or share information about brands and products (Dessart et al., 2015).

Behavioral Engagement. Behavioral engagement can be measured by consumer's level of involvement with a brand or company. Consumers often share their experiences, knowledge, and ideas with others online through social media, online communities, or through traditional methods like WOM. Consumers may become endorsers that publicly show approval of a product or brand. When endorsing a brand on a digital platform, a consumer is recommending a brand or product virtually free of cost (Brodie et al., 2013). Another behavior is learning. Consumers can learn about products through endorsers, but also through the company themselves and their marketing platforms (Dessart et al., 2015).

Affective, cognitive, and behavioral engagement are closely related to the theoretical framework for this study, which will be presented later in this chapter. Recognizing the combination of affective, cognitive, and behavioral engagement when

consumers are shopping or evaluating a product is important for assessing consumer behavior.

Brand Satisfaction, Trust, and Loyalty

As repeatedly stated, consumer engagement is extremely important for a company's success, and marketers are striving to meet this end goal with their customers. Affective and cognitive engagement were explained as an emotional and mental state consumers experience when evaluating a brand (Dessart et al., 2015). It is important to have a deeper understanding of consumers "thoughts and feelings" and address the mental process of engaged consumers. Consumers who are engaged experience brand satisfaction, trust, and loyalty (Bowden, 2009; Dessart, 2015; Sashi, 2012). Khan (2012) explained, "Satisfaction can be obtained by what was expected" (p. 107). When a consumer receives a high-quality product that meets their high expectations, they feel satisfaction. It is important for companies to strive to satisfy their customers so they will return and continue to purchase from a company. Poor satisfaction or service can drive a customer away from a brand and lead them to look for alternatives.

Baser, Cintamur, and Arslan (2016) found consumers continuously chose a brand they trust, because trust reduces perceived risk and ambiguity. Companies must first gain the trust of their consumers to form long-term relationships, which result in commitment (Bowden, 2009). Mistry (2016) suggested although a company may have thousands of customers, they should strive to make a customer feel special and provide them with a personal experience. When a customer is trusting and committed to a brand, they

become engaged, and engagement leads to loyalty (Dessart et al., 2015; Sashi, 2012). Loyalty can be a driver of customers attracting new customers (Doorn, Lemon, Mittal, Nass, Pick, Pirner, & Verhoef, 2010).

Companies should try to nurture relationships with consumers who are familiar with their brand, or have only made some purchases. Rewards and loyalty programs are an effective way of engaging with new consumers, it offering them an incentive they may find exclusive and exciting (Dowling & Uncles, 1997). There is no set period of time for a new customer to become loyal, and marketers should be patient and continuously strive to offer consumers what they need, in hopes of forming a relationship that leads to loyalty (Mistry, 2016). The mental process that consumers undergo in becoming brand loyal is illustrated in Figure 4.

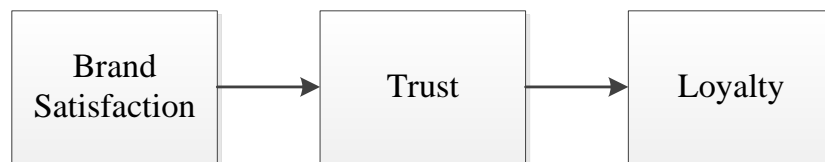


Figure 4. Consumer's mental process beginning at brand satisfaction and ending in loyalty.

Measuring Consumer Engagement

Companies and marketers agree that consumer engagement is necessary for their success, yet engagement has been tested and measured in few ways (Munoz-Exposito, Oviedo-Garcia, & Castellanos-Verdugo, 2017). The Digital Metrics Field Guide

(DMFG; Rappaport, 2014) clearly stated that “Engagement is a term, not a metric” (p. 137). Companies should use metrics and analytics to identify consumer involvement and interaction with their brand. Traditional categories of revenue, sales, service, and campaign metrics arose (eMarketer, 2016). Each category goes deeper into the ways consumers are engaging with companies and brands, and how engagement can be measured quantifiably. Engagement is easily measured from an online or digital context, through metrics and analytics. However, in a retail setting, there is not a widely noted or specific test or measure for consumer engagement. Researchers have studied the effects of in-store promotions and marketing tactics, and general concepts and assumptions can be made for what consumers find engaging (e.g., Feroz & Wood, 2017; Pakkala, Presser, & Christensen, 2012). This section will explain how to measure engagement in digital platforms, and also the best in-store practices for engaging shoppers.

Engagement in Digital Platforms

In the DMFG, Rappaport (2014) explained the importance of companies selecting the right metrics to measure engagement on digital platforms. He defined engagement as “...a catchall term for measuring the types of actions that people take with a brands advertising, content or app” (p. 137). Companies can measure engagement on digital platforms with the help of analytics.

Pakkala et al. (2012) defined web analytics as “...the assessment of a variety of data, including web traffic, web-based transactions, web server performance, usability studies, user-submitted information and related sources to help create a generalized understanding of the online visitor experience” (p.504). Companies can use web

analytics to see how many new users visited a site or platform. They also evaluate the number of sessions and durations for a set period of time (Tonyan, 2016). It is important to remember that the number of views your site has does not reflect the number of viewers that were engaged. Pakkala et al. (2012) categorized visitors in two ways: People who view content shortly and then exit the website or platform, or those who spend several minutes or more on the website (“real users”).

Search engine visibility (SEV) can contribute to successfully capturing a viewer. Search engines like Google, Yahoo, and Bing face major competition from companies wanting to be the highest ranking page. The higher a page is ranked, the easier it is to find in search results (Feroz & Wood, 2017). Brands can be creative in their marketing tactics to have their name mentioned on multiple platforms and mediums, which helps raise their website ranking. Companies can follow traffic from referring websites to further understand what the consumers were looking for, so they can make their information easily available (Pakkala et al., 2012).

Beltran-Alfonso, Torres-Tautiva, Gaona-Garcia, and Montenegro-Marin (2017) conducted a case study to understand the behavior of consumers when searching for information on the Internet. They found that most people visit approximately five to ten website pages before finding valid information and 70% of participants found attractive titles for their search, but did not find information relevant to their interest. Marketers should be specific with keywords so users can find things quickly and avoid visiting other sites (Beltran-Alfonso et al., 2017). Search engine optimization (SEO) is important

for companies to increase their ranking in search results, which enhances their visibility and website analytics (Feroz & Wood, 2017).

Bernardes and Bandeira (2016) compared two parliament websites in a case study to evaluate how much of their content was information and how much could be engaging. They suggested websites have more interactive elements to engage with consumers, which will help their organization seem more relevant, relatable, and impactful. Bernardes and Bandira (2016) explained that information on digital platforms is important, because consumers follow a process of being informed first, and then becoming engaged, but interactive elements are crucial.

Marketers also measure consumer engagement on social media platforms. Similar to web analytics measuring views, social media analytics can provide the number of likes, shares, and comments on a post (Rappaport, 2014). Munoz-Exposito et al. (2017) studied metrics to evaluate engagement on Twitter, but explained this metric could be applied to other social media platforms as well. They proposed the following ratio of engagement:

Engagement on Twitter

$$= \frac{(\text{Interactions/No. of tweets}) / (\text{Average impressions})}{\text{Average reach}} (\times 100)$$

Interactions are described as users participating with the brand (Munoz-Exposito et al., 2017). In relation to twitter it can be hashtags, retweets, follower relations, or @-messages. Interactions could be applied to Facebook, measuring the number of likes, shares, comments (also known as impressions and reach), and also with Pinterest, looking at the number of pins, likes, etc. Impressions are described in The DMFG as the

number of times a person is served a tweet or in other platforms, a post (Rappaport, 2014).

Feroz and Wood (2017) depicted many benefits of social media use for companies. In their results, they concluded that social media presence has a positive effect on website analytics, which in turn affects financial performance. Feroz and Wood (2017) and Rappaport (2014) suggested firms view their social media metrics as an indicator of performance and use these platforms for customer service purposes as well.

Engagement in Retail Stores

Although engagement can be assessed in digital platforms through metrics and analytics, there is not a single, widely accepted way to measure engagement in a retail environment. Therefore, certain factors that can enhance a consumers experience in a store, and further persuade them to make a purchase will be discussed. These factors will be separated into two categories: retail environment and interactions, and then further described.

Retail environment, for the purpose of this study, is the physical store that the consumer enters. The layout of the store can influence a shopper's perception of the experience. Nguyen, DeWitt, and Russell-Bennett (2012) said that shoppers are goal oriented and know what they want to purchase before entering the store. Retail environments should focus on creating an environment that is engaging and welcoming and makes a customer feel like shopping is more of an experience than a functional visit (Bustamante & Rubio, 2017). Creating an environment that has an attractive ambiance may arouse consumers and help them feel happiness and optimism, which in return may

encourage them to spend more time in the store browsing and exploring new products (Bustamante & Rubio, 2017; Rajagopal, 2010).

Store managers and marketers can also use promotional elements to gain customers' attention. Reportedly, displays in a retail store can be successful for providing information about a product or brand, when a sales associate or a promoter is not present (Mitra, 2012). Consumers may see a display, and then assume the product is valuable, in comparison to others that remain together on a shelf (Rajagopal, 2010). Point of purchase (POP) materials like signs or display racks attract customers' attention. Mitra (2012) conducted a study to analyze the effectiveness of POP displays on consumer purchasing behavior. He randomly surveyed individuals at a mall, all ranging in ages. Approximately 80% of the sample indicated they do not plan or make a list before going shopping. Half of the shoppers stated that they check the products in displays and 32% said that they have or do purchase items on display out of impulse. Only 12% of the sample said they never consider displays when making a purchase. His research concluded that POP displays are somewhat considered when purchasing products in a grocery store, and they lead consumers to check products and encourage impulse purchases.

In addition to promotional displays, the arrangement of products on a shelf, lighting, and store crowding affect consumers' shopping experience. Shelf display has a significant impact on consumers beliefs associated with purchasing a product (Castro, Morales, & Nowlis, 2013). Consumers are more likely to purchase a product when the display is fully stocked and organized than when there is only one product left. When

consumers are unfamiliar with a brand, they tend to buy the brand that only had one product left on a shelf, assuming it was of high demand and popular with other consumers. When products were displayed on a shelf and appeared disorganized, consumers believed they had been touched by others, not chosen and put back, which brought negative feelings toward the product (Castro et al., 2013).

Reynolds-McIlnay, Morrin, and Nordfalt (2017) studied the effects of shelf display on consumer purchase, and included the environment brightness as a variable. They reported that products with bright levels that contrast with the store environment were preferred because they stood out. Kim and Kim (2012) found shoppers of all ages were also negatively impacted by overly crowded stores. Retail space should be designed to allow space for consumers and employees to interact with each other, or socialize with the company they may have with them. If consumers feel a store is too crowded, it will affect the times or days they chose to go to the store (Kim & Kim, 2012).

Once consumers are in a physical retail environment, there are several interactions that can lead to an enjoyable shopping experience. Customer service is important because positive perceptions of service quality can lead to satisfaction and loyalty to a brand or store (Bustamante & Rubio, 2017; Martinelli & Balboni, 2012). Customers enjoy when store employees are able to give them information about a product or brand because it makes the purchasing process easier and they value the employee's input (Nguyen et al., 2012) Some customers experience social benefits from engaging with employees and having casual conversations. They feel involved with the

store and shopping is not viewed as a chore, but as an enjoyable experience (Bustamante, & Rubio, 2017). Kim and Kim (2012) suggested retailers lower their turnover rate of employees so that customers can fulfill socializing wants with salespeople who they are familiar with or look forward to seeing. They also found that customers related service and store quality to the physical appearances of the employees. Physical attractiveness, cleanliness, positive facial expressions, clothing, and accessories are critical factors affecting their perception of the store and environment.

Consumers also look forward to promoters offering free samples at a store and believe it makes their shopping experience more exciting (Heilman, Lakishyk, & Radas, 2011). Free samples are the most expensive sales promotion because of production and packing price. Companies can be hesitant to give away a product without any promised return, but samples can be the most effective method of promotion (Pride & Ferrell, 2016).

Heilman et al. (2011) found that the leading reason consumers take free samples is to see how something tastes. The price of the product they sampled did not impact the likelihood to try it. They found that 40% of the people who sampled the product purchased it (Heilman et al., 2011). They suggested free samples can encourage consumers to switch from the brand they usually purchase to the sampled brand on the day of the promotion.

When Heilman et al. (2011) asked shoppers why they did not want to sample the food product, the main reasons were because the shoppers did not plan to purchase a product from that category or they were not hungry. Heilman et al. (2011) suggested

retailers offer samples at the times people are hungry or when consumers are likely to plan to purchase the product. Heilman et al. (2011) observed that consumers felt a social pressure to purchase the product they sampled when they feel other shoppers were aware of them sampling it, and awaiting their response. Consumers also purchased the product more when the promoter or sales associate was inviting, personal, and conversational.

Mica (2017) conducted a study in India to evaluate shopper's purchasing decisions, depending on the age, sex, and relationship of the people they shop with. He found that consumers tend to make more purchasing decisions and spend more time in a store when they are with other people. Young couples were considerate of each other's views and agreed upon products together. The husband seemed to make the purchasing decision in middle-aged couples; whereas, in older couples, the wife appeared more dominant. Aside from couples, shoppers accompanied by friends, siblings, or others in a similar age group, depended on each other's feedback to make purchasing decision.

Although there is no single, widely-noted test to measure consumer engagement in retail, marketers may consider incorporating the preceding three promotional methods and the preceding seven practices suggested to encourage interaction and engagement with products and brands in a retail environment.

It is important to further understand, in a retail environment, the characteristics of product design that are engaging. Marketers can focus on creating products that consumers connect with, find memorable, and eventually chose to engage with, as mentioned in the psychological process (see Figure 1) presented by Bowden (2009),

Brodie et al. (2013), and/or Sashi (2012). “Products” can be classified several ways, and the following section will provide categories and definitions for products and goods.

Products and Goods

Tangible, Intangible, and Virtual/Digital

A product is defined as any good, service, or idea that can be offered to a market to satisfy a want or need (Lumen, n.d.). Products, historically sold in stores, have become easily available online. Because of progression digitally and with the Internet, the original product categories of “tangible” or “intangible” have changed to accommodate “virtual products” and “digital products” (Talpau, 2014).

Tangible goods, also known as physical goods, can be touched. Intangible goods, also known as products and services, can only be perceived indirectly (Lumen, n.d.). Because of the growing online shopping and retailing industry, tangible goods are being perceived in an intangible nature (Kim & Krishanan, 2015). Because many products cannot be touched or tested, customers must have high levels of trust in the company or brand and their online presence (Talpau, 2014).

Virtual products are not physical in nature but represent something that can still be purchased (Magento, 2018). Examples of virtual products are commonly found in virtual environments and games, including World of Warcraft, where players can purchase avatar clothing, virtual furniture, objects, or currency. Because access to the site or game is free, many social networking sites are profiting from consumer purchasing virtual goods (Hamari & Keronen, 2017). Digital products/goods can be

stored in electronic formats. Examples include downloaded music, digital books, computer files, and smart phone applications (Hojnik, 2017).

Kim and Krishanan (2015) studied product level uncertainty with online purchases. They found that when consumers purchase inexpensive products online, the products tend to be more intangible. Consumers buy cheap products because they view their financial loss as low if they do not like the product. For this study, intangible *cheap* products ranged in price from \$0 to \$50.

Women and older consumers are the primary online shoppers for intangible products like clothing and fashion accessories that cannot be tried on, and must be evaluated from the information provided online. As consumers become more acquainted and experienced with online shopping, they tend to purchase more expensive products.

Convenience Goods, Shopping Goods, and Specialty Goods

Products may also be classified in other ways, including more dated and simple way of classification, defined by the Definitions Committee of the AMA, in 1948. Products, also known as goods, were categorized as convenience goods, shopping goods, and specialty goods. Some goods could be placed in different categories for different people (Holton, 1958), because of different income levels, availability of products, and/or the enjoyment of making price and quality comparisons.

Convenience goods are products that consumers spend little effort or time planning to acquire and they are usually low priced and widely available (Poon & Joseph, 2000). Examples include groceries, drinks, candy, or anything consumers can

purchase without much effort. Adkins and Kim (2011) found that people seeking convenience goods are striving for time saving in their shopping.

Shopping goods differ because the consumer spends more time making comparisons between products, on the bases of sustainability, quality, price, and style. Examples of shopping goods include furniture, electronics, appliances, etc. Shopping goods are purchased less frequently and require more conscious effort and decision making (Holton, 1958; Poon & Joseph, 2000). Shoppers who are price conscious believe that it is well worth the time and effort to compare different brands, to find the lowest price (Adkins & Kim, 2011)

Specialty-goods consumers are usually brand loyal and have a strong brand preference. Therefore, they do little comparisons between brands, and they are not price sensitive (Poon & Joseph, 2000). Specialty goods are important to the consumer and their decision style can be viewed as “perfectionism” (Adkins & Kim, 2011; Sprotles & Kendall, 1987). Shoppers of specialty goods are usually willing to make a special purchasing effort, and typically are searching for a specific brand (Holton, 1958). Adkins and Kim (2011) provided the example of a sports car as a specialty good.

Experience Goods and Search Goods

Products can also be grouped into “experience goods” and “search goods.” Wan, Nakayama, and Sutcliffe (2012) reported that goods can have both search and experience attributes, depending on the context and knowledge of the individual evaluating the good. For example, a person who is a makeup artist may consider an eye shadow pallet a

search good, but to someone who is not familiar with makeup, it would be an experience good.

Experience goods are described by Wan et al. (2012) as goods consumers cannot evaluate the quality of, until they are consumed or serviced. Although information regarding these goods may be available, consumers may feel the need to visit traditional retail channels to see the physical product. Then the consumer may divert to the online retailer to purchase it (Poon & Joseph, 2000; Kim & Krishnan 2015).

Search goods differ because the quality of the good can be confidently evaluated before the purchase (Wan et al., 2012). Information pertaining to the good is easily accessible and available, and the consumer feels comfortable following through with the purchase (Poon & Joseph, 2000). Confidence in consumers' online purchasing decision comes from access to return policies, delivery terms, customer reviews, and other information (Talpau, 2014).

Although there are many different categories and classifications of products and goods, they all share one thing in common: the need to be advertised and marketed. The next section explains the different platforms and mediums marketers use to inform consumers of their products or brand, and the benefits associated with each.

Marketing Platforms and Mediums

Digital marketing has enabled companies to reach more consumers through many platforms and mediums. Digital marketing, also known as e-marketing, was defined by Smith (2011) as "...promoting products and services using digital distribution channels"

(p.489). Digital marketing includes banner advertisements (ads), videos, pop-up ads, electronic coupons, and social media (Bakopoulos, Baronello, & Briggs, 2017; Martin & Todorwo, 2010; Smith, 2011). Marketers have experienced difficulty deciding which platforms and mediums to use, due to the increasing number (Bakopoulos et al., 2017).

Digital platforms should focus on being “productive” by effectively engaging with their target audience and helping consumers with a need, instead of being “disruptive” (Martin & Todorwo, 2010). Bakopoulos et al. (2017) conducted a study on media efficiency and different key performance indicators. They found that banner ads were an efficient approach for driving short term sales to consumers already in the market for a particular product, and the bigger the ad the better.

Pop-up ads, according to Smith (2011), were not as favored by consumers. Some respondents found them to be intrusive and annoying, which in turn created negative attitudes toward an organization or brand. Smith (2011) also found that along with pop-up ads, Millennials strongly disliked flashing items, un-closable windows, and mandatory downloads.

Bakopoulos et al. (2017) found video marketing not as efficient, due to short attention spans. Consumers watching a 30 second video on their phone had an average attention span of about 15 seconds, and lost interest between 15-30 seconds. When presented with a mobile audio message of 30 seconds, their attention was held longer than 15 seconds, likely because they did not have to hold the device in their hand or devote their full attention to the ad.

Mobile marketing is an effective way to engage with consumers. Bakopoulos et al. (2017) described mobile marketing as “...a much richer dataset than traditional media, allowing marketers to capture the context, intents, and need states of individuals” (p. 458). Companies can provide quick and direct messages while modifying their language or style to be trendy and engaging (Bashar et al., 2012).

A large part of mobile marketing takes place through social media. Social media has the capability of reaching people at a larger scale and much quicker than traditional marketing mediums (Hays, Page, & Buhalis, 2013).

Bashar et al. (2012) found that consumers are looking for information about products on social media pages, as well as websites. They are reading their peers’ opinions of products on platforms, including Facebook, and trusting their peers to make a purchase. Social media has also given consumers a way to talk about their favorite brands and connect with others within an online community, stimulating electronic WOM (Brodie et al., 2013; Hays et al., 2013).

Also, consumers like to share their opinions of brands and products on blogs, forums, and by writing online reviews. Online reviews can be a channel of consumer-to-consumer communication, where they are generating product awareness and helping a brand build a reputation, all free of cost for the organization (Smith, 2010). Some consumers become advocates online for brands that they have strong emotional bonds with. Their peers can read the post or review and evaluate how satisfied the poster is with a brand and in return, the reader may perceive the brand as valuable (Sashi, 2012).

With advances in technology, marketers are experiencing new mediums to display their products and interact with their consumers. Augmented reality is a newer form of advertising that consumers are finding compelling and engaging (CRM, 2017). Consumers can use technology on a screen to feel as though they are in an enhanced environment.

Yaoyuneyong, Foster, Johnson, and Johnson (2016) conducted a study to measure the value score of ads presented through augmented reality, quick responses (also known as QR codes) and traditional media. The respondents used handheld mobile devices to look at print ads that had hyperlinked images displayed. They were asked to rank the three types of ads by preference. Respondents ranked the QR code ads worst, followed by print. The augmented reality ads were overwhelmingly ranked as positive.

Augmented reality has grown in popularity, especially with the Millennial generation. Snapchat's lenses, Pokémon Go, and now Amazon's AR View allow consumers to place digital objects in their physical surrounding using their phone through a virtual experience (CRM, 2017).

Companies are also adopting virtual and augmented reality into their marketing strategies. Oasis, a fruit juice brand, created a limited edition bottle with a face on the label. Consumers were encouraged to use the feature "face swap" on Snapchat to place their face on the bottle and the bottle's face on their own. They then could upload the photo to the Oasis Facebook page for a chance to win a prize (CRM, 2017). Consumers enjoyed this experience and their campaign was successful.

Consumers are attracted to virtual reality and they can access more information easier than what traditional media could portray. Bakopoulos et al. (2017) said that marketers can maximize the impact of their advertisement if they communicate it creatively and to those that find the advertisement relevant. When using virtual or augmented reality for marketing purposes, it is important to truly know your audience.

Younger consumers are more favorable of this platform because of their experience with mobile devices and digital platforms, but older consumers may need to know that the experience is worth the time they devote to learn how to use the platforms (CRM, 2017; Yaoyuneyong et al., 2016).

Theoretical Framework

Social Cognitive Theory

For the purpose of this study, I relied on the theoretical guidance of Bandura's (1986) Social Cognitive Theory (SCT). This framework helps researchers analyze human motivation, thought, and action. According to Bandura (1986), SCT "...embraces an interactional model of causation in which the environmental events, personal factors and behavior all operate as interacting determinants of each other" (p. xi).

Humans function in terms of triadic-reciprocal causation, showing there is mutual action between causal factors, and they all operate interactively (Bandura, 1986). Different individuals, activities, and circumstances will vary in the influences exerted by environmental, personal, and behavioral factors (Bandura, 1986). A visual of Bandura's reciprocal interaction between the determinants is included.

Personal Determinants

Personal determinants are internal and considered to be a person's beliefs, attitudes, and thoughts toward a particular subject. This component also includes how a person thinks (cognitive) and feels (affection). Bandura (1986) explained, "...people determine what they become by their own free choices" (p. 22). Affective engagement, previously mentioned by Dessart et al. (2015), was described as people's emotions and feelings transpired through long lasting and reoccurring feeling.

Cognition is an active mental state that consumers experience. It is crucial that marketers appeal to personal determinants, so that the consumer engages in positive thoughts and attitudes toward a brand, and in turn wants to purchase their product.

Behavioral Determinants

Behavioral determinants are considered actions, specifically what people do and how involved they become. People adopt courses of action that are likely to produce positive outcomes. People self-evaluate themselves once they establish personal standards and begin to regulate their behavior (Bandura, 2001).

In this study, behavioral characteristics refer to participant's behavior of selecting and purchasing a product. Their purchasing behaviors can be evaluated to assess how engaged they are with brand or company.

Environmental Determinants

Environmental determinants affect how people function and exist in a setting. The environment can affect a person's behavior and feelings. Bandura (1986) explained that people evoke different reactions from their environment because of their own

characteristics. For the purpose of this study, the environments consumers interact with are both physical and virtual (see Figure 5).

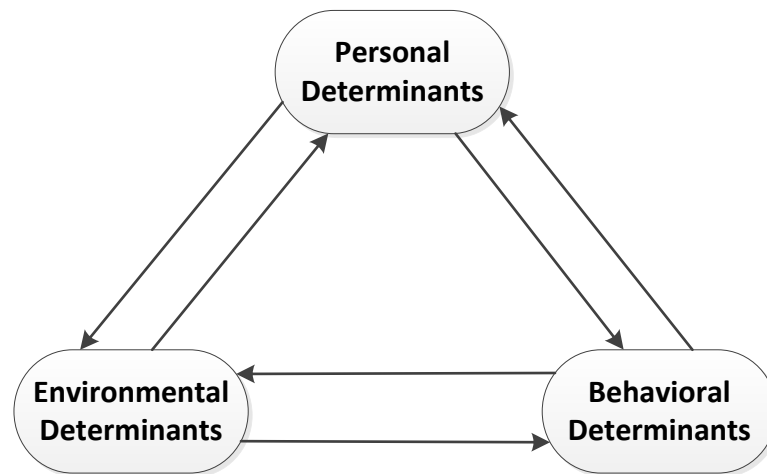


Figure 5. Bandura's (1986) SCT, showing the reciprocal causation of the three determinants.

In this chapter, the importance, definition, and levels of consumer engagement were presented, with the psychological process individuals experience when connecting with a brand and evolving into engaged, loyal customers. Brand satisfaction, trust, and loyalty were described as the emotions affiliated with engagement, and the multiple platforms and mediums marketers use were presented. Measures for engagement in both physical (retail) and digital environments were provided.

In relation to SCT, personal determinants in the literature review relate to consumers feelings and thoughts toward a company, product, or brand. In the psychological process of engagement, personal determinants are related to (a)

satisfaction and feeling emotionally connected to a brand, (b) *retention*, and (c) *commitment* to a brand, and motivation to remain loyal (Bowden, 2009; Brodie et al., 2013; Sashi, 2012). Personal determinants are also related to the levels of customer engagement. “Fully engaged” and “fans” have strong feelings toward a brand. This influences their behavior, as they continue to remain loyal and purchase from a particular brand (Gallup, 2014; Sashi, 2012). The categories described by Dessart et al. (2015) affective and cognitive engagement, also relate to personal determinants. Consumers devote their attention to a brand because they like it and feel enjoyment when expressing their opinions with others.

In the psychological process of engagement, behavioral determinants are (a) *interactions* with others or with the company itself, (b) *advocacy* and expressing thoughts and feelings of satisfaction with other people, and (c) *engagement* (Bowden, 2009; Brodie et al., 2013; Sashi, 2012). According to Bandura’s (1986) SCT, people’s behavior can change, according to their thoughts and perceptions, along with the environment they are in. Dessart et al. (2015) explained consumers behavior as their involvement with a brand, whether that be sharing their experiences and ideas, becoming an advocate for a brand, or spending time learning about a product or brand.

Environmental determinants have been described as both physical and digital. For this study, the physical environment is a retail store; multiple elements of the physical store can affect a consumer’s thoughts (personal determinants) and actions (behavioral determinants). As previous mentioned, a stores layout, lighting, displays, and employees can have both negative and positive influences on a consumer’s decision to

purchase a product, or continue shopping at that store, as well as their feelings toward the experience, in general (Reynolds-McIltnay et al., 2017; Castro et al., 2013; Mitra, 2012). Digital environments were explained as social media platforms, websites, blogs, reviews, and virtual and augmented reality (Beltran-Alfonso et al., 2017; Pakkala et al., 2012; Feroz & Wood, 2017). Consumer's personal determinants, including feelings and emotion, often aid their decision to post reviews, comment on, or share a post, or engage with a brand in other ways. Similarly, when consumers are presented with reviews on a digital environment, their opinions of products may change, in result, changing their behavior to either purchase or not purchase a product (Brodie et al., 2013, Hays et al., 2013).

In the next chapter, the variables for this study will be presented, and their relationship to the personal, environmental, and behavioral determinants will be explained more in depth.

CHAPTER III

VARIABLE SELECTION PROCESS

The primary aim of this study was to investigate what factors influence Millennials' wine purchasing behavior in physical and virtual environments. In this study, I will evaluate behavioral, environmental, and personal determinants. Primary behavior is considered to be the decision to purchase or not purchase a bottle of wine. Physical elements of the wine bottle and virtual elements in the 19 Crimes phone app are considered as the primary environmental determinants. Each subject's psychographics, focused on the thought processes related to his or her intent to purchase wine, will be considered to be the personal determinants. This chapter includes a description and review of the variables selected for this study and their direct relationship to SCT.

Selection of Millennials

Millennials are defined as individuals born between 1980 and 1995 (Nielsen, 2014). According to Nielsen (2016), Millennials make up one fourth of the planet's population, and account for 1.7 billion people. Fromm and Garton (2013) shared expansive knowledge of Millennials as consumers and the elements marketers need to do to engage with them. Millennials are well known by society as the "tech savvy" generation (Lategan & Pentz, 2017).

Brands are realizing the importance of interacting with Millennials online. Millennials enjoy sharing feedback about their purchases and actively engaging with brands to feel as though their opinions and voice are being heard (Fromm & Garton,

2013). Their influence on others' potential purchasing behaviors is extremely positive. They are more likely to share their purchases with friends if they felt sharing gave them a psychological boost from giving others advice.

Millennials are influencing older generations as they seek council about what products to buy, what is popular, and their overall opinions. Fromm and Garton (2013) suggested marketers focus on Millennials, because other generations often follow what they deem "cool."

Although Millennials live in a digital world, they still visit retail environments to see, touch or try products before purchasing them. They often use their smart phones while in the retail store, using apps like Amazon to check if better prices are available elsewhere.

Retailers must find ways to become innovative and interact with shoppers so that they enjoy their experience. Calienes, Carmel-Gilfilen, and Portillo (2016) found that Millennial shoppers have strong opinions on retail environments. They want displays to be neat and orderly, otherwise they view the store and the products on display negatively. They viewed empty shelves as an indicator of laziness and carelessness from the store and their staff. Millennials wanted consistency when returning to the same store and found it helped them form a relationship with the store or brand.

Millennial shoppers enjoyed humor and fun in a retail environment and found displays and graphic elements like signs helpful when finding products. Ease of navigation through a store was an important factor and gave them positive emotions about the shopping experience.

When making a purchase, Millennials viewed price as the most important factor (Silva et al., 2014). They favor shopping at stores with rewards programs and enjoy saving money. Millennials enjoy purchasing products that are on “sale” (Akkam, 2015). Fromm and Garton (2013) found 43% of Millennials prefer to purchase from brands they grew up with, but because they want to save money; whereas, 56% were willing to switch brands.

Typically, when Millennials shop for wine, they tend to spend less than \$14 on a bottle of wine (Higgins & Wolf, 2016). They feel social pressure to pick a good wine and fear they are being judged by their choice when selecting something new (Hoppe, 2016). Marketers can take advantage of Millennials lack of knowledge in purchasing wine, and introduce them to new products that have alternative packaging, design, or features that they may find attractive.

Selection of Wine

Wine was selected for this study because it is a product primarily sold in retail settings, including grocery stores, liquor stores, and gas stations. Companies spend little money on promoting and advertising wine (Nielsen, 2017). The display and physical appearance of the bottle must be aesthetically pleasing and engaging to encourage consumers to purchase their product (Nielsen, 2017).

The United States has remained the world’s largest wine market by volume since 2010 (Wine Institute, 2017). In 2017, total wine sales in the U.S. reached \$63 billion

dollars (Wine Industry, 2017). Of the many generations of wine drinkers, Millennials are becoming core consumers (Thompson & Barrett, 2016).

People consume wine in many different settings and for different reasons. Factors including location, income, culture, and demographics can shape consumers behavior toward selecting wine (Moulton & Lapsley, 2001). Silva, Figueiredo, and Hogg (2014) explained that consumers drink wine for social interactions, cultural reasons, as a vehicle to disinhibit, for relaxation, and to pair with their food. In a social setting, consumers often feel pressure when choosing a wine because they may not have accumulated knowledge on the products and they do not want to appear “cheap.”

Wine consumers can be classified by their knowledge on the product category. Moulton and Lapsley (2001) identified the first category of wine consumers as “simple drinkers,” who represented 15% of consumers and have no particular interest in wine. They mostly consume it by habit or in regard to their culture. The second category is “newcomers.” Newcomers account for 35% of consumers and will take whatever product has been offered to them because they are not very interested in learning about the products features. The largest category, 45% of wine consumers, is “aspirants.” They are curious and enjoy trying new wine. They want to learn more about the product and are open-minded to switching between brands. Lastly, the smallest category of consumers, “connoisseurs”, account for 5%. They are very knowledgeable about wine and have high expectations and demands, often making other wine drinkers feel inferior. Marketers can focus their efforts on the “newcomers” and “aspirants,” because they are receptive to their messages and can be persuaded to try a brand.

Consumers who are newer wine drinkers and less knowledgeable may not have strong brand preferences and do not know which product they want or how to choose them. Nielsen (2017) found that 29% of consumers do not know which brand of alcohol they want to purchase before entering a store. Some products, like wine, rely heavily on their label for success. Marketers should recognize that 71% of consumers are making their decision by what they see on the shelf (Nielsen, 2017). With products that have similar packaging as others in the category, including wine, marketers should focus on differentiating their product from others.

Package design is important in attracting wine consumers (Nielsen, 2017; Silva, Figueiredo, & Hogg, 2014). Different generations find different aspects of a wine label important. Wolf and Thomas (2007) reported that Millennials wanted a label that was attractive and eye catching. Whereas, Generation X wanted an interesting label that looked fun, and also enjoyed animals on the label more than Millennials or Baby Boomers.

Wolf and Thomas (2007) presented participants with nine labels from the top-ranking wines that year. They were asked to indicate on a scale of 1-5 how likely they were to purchase the wine, the level of attractiveness, and level of eye-catching properties of each label. They found that level of attractiveness and eye-catching labels have a positive influence on consumer purchase.

Until recent innovations in packaging, wine was traditionally sold in a standard 750mL glass bottle (Wine Folly, 2012). Choosing between different brands of wine can be difficult for shoppers, considering they most all shared the same packaging design. As

recently as 2016, wine could be purchased in cans, jugs, boxes, or mini-kegs (Hoppe, 2016). Silva et al. (2014) found younger generations enjoy new, exciting packaging, but believe that bottled wine is better quality. Similarly, Barber, Taylor, and Dodd (2009) studied consumer perceptions of wine in regard to closure and found that screw top bottles were perceived as “cheap,” and cork closures were preferred.

In addition to label design and packaging, there are other elements that influence purchase behavior. The price of the wine is the primary motive for choice and the determining factor. Price can also be an indicator of quality (Silva et al., 2014). Nielsen (2017) reported that Millennials find purchasing a product on sale more important than other demographics, but according to Lategan and Pentz (2017), taste was the most important attribute when purchasing wine. Consumers often remained faithful to a brand that they enjoy the taste of their products to eliminate risk of choosing one that they did not like (Silva et al., 2014). Many new wine consumers will drink brands they are familiar with and those their parents introduced them to.

Lategan and Pentz (2017) found a relationship between consumers that tasted a new brand and enjoyed it, and recommendations to their friends. Reportedly, shoppers will listen to recommendations given to them by peers and shopping assistants (Silva et al., 2014). Consumers are also talking about their product choices through reviews and on social media. Marketers should engage with consumers on these platforms to encourage WOM and recommendations, which in turn could lead to trial of the brand. Reviews influence buying behavior.

Recently, wine products have been engaging with digital platforms. An example is Vivino, a phone app that allows consumers to scan a label and read reviews and ratings and have more knowledge of the brand without a sales associate or expert present. Similarly, Wine 23 and Platter's Wine Guide provides reviews, tasting notes, and suggests specific wines for special occasions (Lategan & Pentz, 2017). Wine traditionally has not had much correlation with digital platforms and apps, but marketers are looking for ways to engage with their customers (Gilbert, 2016).

A new wine brand has emerged and their unique marketing platform has revolutionized consumer engagement with their wines. 19 Crimes is an Australian wine that has become increasingly popular since released in the United States in 2012. In 2017, they were named "Wine Brand of the Year" by Market Watch and sold one million cases in the last year. The brand is unique in sharing stories of British criminals in the 18th and 19th century who committed crimes and were sentenced to Australia. This form of punishment by transportation occupied Australia with criminals that became colonist. The 6 types of wine each host a different criminal and their story. The corks are randomly labeled 1-19 with different crimes. Some customers enjoy collecting the corks with the intent of having all 19 crimes.

What really sets apart 19 Crimes from their competitors is the use of virtual reality integrated into their mobile app. Simply positioning a smartphone in front of the app, pointed at the label, will allow the character to tell their authentic story with passion. 19 Crimes allow consumers to engage with a physical product, wine, that typically is only used for consumption.

Lilley, an employee of the company 19 Crimes, explained that adding virtual reality to their products is a way of engaging with their audience and bringing them an exciting way to interact with wine labels (Szentpeteri, 2018). This brand was chosen for this case study to evaluate participant's responses to experiencing virtual reality through labels and predict Millennials' intent to purchase products with engaging features. It should also be noted that 19 Crimes was the first wine brand to incorporate virtual reality into a label, and there is no previous research related to virtual reality and wine label designs.

Selection of Labels

As previously mentioned, labels are an important element of a product, because they portray the information needed for consumers to evaluate a product. Specifically when evaluating wine, a product that does not typically differ in packing in the product category, the label can set a product apart from others.

Nielsen (2017) found that brands evaluate three or fewer designs when choosing a label for a new wine. Gallup (2016) reported two thirds of consumers purchase a wine because the label is appealing to them, but different generations have different opinions of what they find "attractive" (Wolf & Thomas, 2007).

Millennials indicated they want labels that are bold and attractive with personality, while Baby Boomers focused more on the region of origin and taste description on the label (Gallo Wine, 2016). Millennials were reported to search for a

wine that is inexpensive, falling between the \$5.00 to \$9.00 range, but still good value (Wolf & Thomas, 2007).

Nielsen (2017) also recommended that labels and packages should be impactful and portray the product as premium, which allows the consumer to be surprised and excited when the cost is lower than expected. It is important to investigate how Millennials are determining “value” from a wine label, and what are the features they find important?

Elliot and Barth (2012) studied Millennials perception of wine labels and their preferences with design. Elliot and Barth (2012) chose wine in the same category, all the same size, similar in price, and same type of wine to eliminate bias. They classified the different bottles of wine as traditional and non-traditional. The traditional bottles were dark or neutral colors, had images with grapes, vineyards, chateaux, or coat-of-arms. These bottles had solid colors or white backgrounds, standard typeface and were vintage style. The traditional bottles were also named after wineries, families, and were French origin. The non-traditional bottles did not have wine related names; the labels were bright and vibrant and contained images of animals and non-wine related photos or graphics. They had non-standard layouts with modern typefaces.

Elliot and Barth (2012) created a Likert scale of one to five to rate the wine bottles color, name, image and design. They found that extrinsic features, like the label and packaging were more influential in decision making for Millennials than intrinsic features like the country of origin, alcohol content, quality, and year of production.

Elliot and Barth (2012) found that Millennials indicate the image, design, and color the most influential factors in purchasing decisions, and the name of the wine and type of wine followed. For the purpose of this study, I will use classification of traditional and non-traditional wine bottle characteristics to select labels that vary from very traditional to very modern and non-traditional.

Wolf and Thomas (2007) also presented wine bottles to participants and asked them to rate them on how eye catching they were, attractiveness, and likelihood to purchase. Millennials agreed that eye catching, interesting, creative, unique, and colorful were characteristics they found highly desirable. The wines that were rated highest likelihood to purchase were also rated highest on label appearance.

Wolf and Thomas (2007) chose nine labels from a list composed by IRI, a big data source, presenting the top ten wines in the United States. Similar to Wolf and Thomas, I have selected the wine labels for my study from a list of “Up and Coming” wines from the Beverage Information & Insight group (Swartz, 2017).

Laeng, Suegami, and Aminihaibashi (2016) suggested surveys and questionnaires asking consumers about their preferences on packaging and purchase intent reflects conscious assessment, but it is not confirmed that this can be a prediction of actual purchases or future decisions. They chose to use eye-tracking as another method to study the attention and preferences of wine labels by monitoring eye fixations.

Laeng et al. (2016) found that a wine’s name and winery were hardly fixated on, and pictorial elements were evaluated longest. They found a positive relationship between the degree a label was preferred and eye fixations. Respondents were also asked

to rate the label's attractiveness on an analogue scale presented below the picture of the wine. The scale ranged from 0 to 10 from "very unattractive" to "very attractive." In a separate experiment, Laeng et al. (2016) showed participants the photos of the wine bottles again, and then asked them how much they would pay for the bottle. They were given four price ranges to choose from.

Laeng et al. found the labels attractiveness predicted the estimate price. They also looked at pupil size and found that participant's pupils became larger when they were viewing a label that they thought was more expensive and attractive. Although they did not know the price of the wine, their pupils dilated more for the bottles that were more expensive. Laeng et al. (2016) noted how remarkable this is and that a label can be designed, to some extent, to reflect the price and value of a product.

Social Cognitive Theory Directly Related to the Variables

Marketing researchers have used SCT in their studies to evaluate the relationship between personal, behavioral, and environmental determinants and how they affect consumer's thoughts and emotions toward a product or brand and further their purchasing decisions.

Bandura (1986) provided a framework that demonstrated three determinant factors interacting with each other to help analyze human motivation, thoughts, and action. Personal determinants are often considered to be people's beliefs, attitudes, and thoughts. Behavioral determinants refer to what people do, actions taken, and a level of involvement. Environmental determinants affect how a person feels and behave in an

environment; the environment can affect how people function and exist in a setting.

Bandura (1986) explained that these determinants form a triadic reciprocal relationship.

In a marketing context, personal, environmental, and behavioral determinants each play a substantial role in the way that consumer perceive the environment they are in, their emotions and thoughts toward a product, and the behavior to purchase a product, which is the end goal. SCT has been used by researchers to understand consumer behavior and engagement in numerous studies, including Munoz-Exposito et al. (2017), and Bustamante and Rubio (2017).

The environment can be both a physical and digital environment. Social media platforms and online reviews are good examples of a digital environment. Pakkala et al. (2012) explained that companies use website and social media analytics to measure the number of visits, durations spent, and a variety of other data demonstrating consumer engagement with a brand on a digital platform. This shows a consumer's behavior, by evaluating how involved they are with a brand and what they will do to search for and find information about a product.

Consumers' personal determinants, such as emotions, thoughts, and feelings—often considered to be elements of cognitive and/or affective realms of thought (Bandura, 1986)—are present in online reviews or comments on social media posts (Munoz-Exposito et al., 2017). Likes and shares on a social media post are both a behavior, and also an expression of personal beliefs.

In a retail environment, consumers are influenced by their physical environment. Bustamante and Rubio (2017) expressed the importance of creating a retail space

(environment) that has an attractive ambiance. This helps consumer enjoy the shopping experience and feel happy (personal) while engaging with their environment.

When the environment influences their feelings in a positive manor, they spend more time in the store and are open to browsing for new products (behavior).

Researchers have also found that the environmental factors like product arrangement, lighting, crowding, and shelf displays affect consumer preferences and attitudes toward an environment. If shoppers do not like the environment, their behavior is negatively impacted (Castro et al., 2013; Kim & Kim, 2012; Reynolds-McIltnay et al., 2017).

In relation to this study, the environment can be considered both physical (retail) and digital or virtual (cell phone app). Ruzicka (2016) emphasized the importance of brands connecting with consumers through virtual environments to provide more information and give consumers the opportunity to feel engaged with a brand.

Wine labels can also be considered as an environment, because changing the label can change a person's thoughts and feelings toward the product. The personal determinants will evaluate what people think of different labels, and what characteristics were attractive to them.

They will also experience a wine label through a virtual reality app. Participants will be asked questions related to the dimensions of environments to measure their intention and behavior to purchase a bottle of wine, based on their reaction to the label and the virtual reality experience. This will assess their purchase intention and behavior, and help marketers understand what elements of the environment (labels) they can

change to positively affect consumers' attitudes toward a product. Each determinant is elaborated in Figure 6.

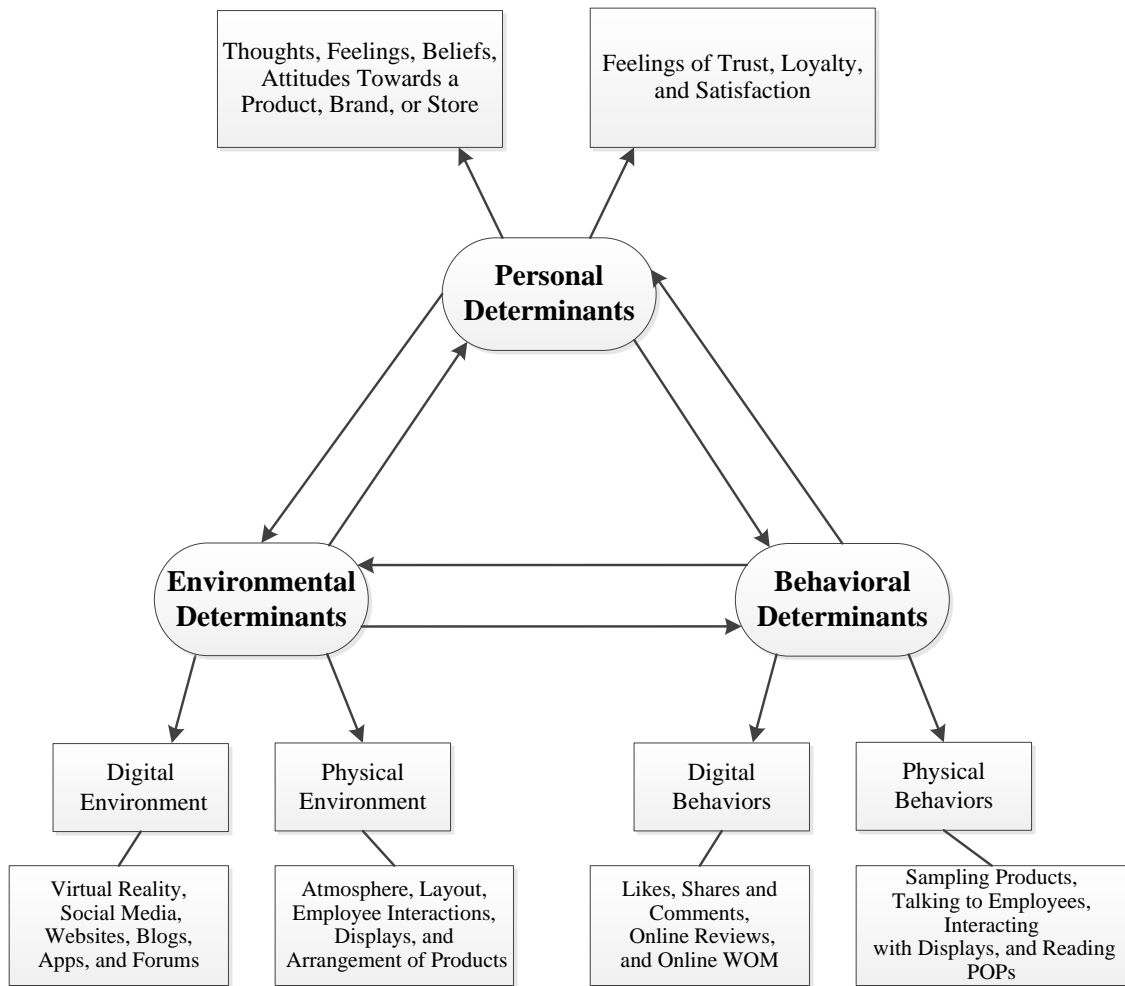


Figure 6. SCT determinants directly related to this study.

CHAPTER IV

METHODS

In this chapter, a description of the design, subject characteristics, sampling procedures, measures (metrics), and analyses will be described for each research question. I developed three aims and four research questions for this study. The first aim is to describe Millennials' response to virtual and physical environments. The virtual environment is the 19 Crimes app and the physical environment is the wine label itself. The second aim is to describe Millennials' consumption habits, specifically wine consumption and spending habits. The third aim is to test the influence of the Living Labels app on Millennials perception of the price of wine.

Research Aims, Questions, and Objectives

For this study, I used two aims to guide my inquiry. The aims were developed to guide a deeper understanding of how members of the Millennial generation interact with physical and virtual elements of wine labels, and how those interactions effect their intent to purchase wine:

Aim 1: Describe Millennials' response to virtual and physical environments.

RQ.1: How do Millennials' respond to virtual environments?

RO1.1: Describe how Millennials respond to virtual reality in the 19 Crimes app.

RO1.2: Describe Millennials' intent to purchase the 19 Crimes wine after using the Living Labels app.

RO1.3: Describe Millennials' intent to recommend 19 Crimes wine after using the Living Labels app.

RQ.2: What are Millennials' perceptions of and responses to the physical environment?

RO2.1: Compare how Millennials perceive the selected wine labels by classification (traditional and non-traditional).

RO2.2: Compare traditional and non-traditional labels.

RO2.3: Describe how Millennials perceive the influence of wine label elements.

RO2.4: Describe Millennials' gaze behavior when viewing each wine label.

RO2.4.1: Describe Millennials' frequency of fixations, by AOI, for each wine label.

RO2.4.2: Describe Millennials' duration of fixations, by AOI, for each wine label.

RO2.4.3: Describe Millennials' order of fixations, by AOI, for each wine label.

RO2.4.4: Describe Millennials' differences in gaze behavior by group order.

Aim 2: Describe Millennials' consumption habits.

RQ.3: What are Millennials' wine consumption and purchasing habits?

RO3.1: Describe Millennials' wine consumption habits.

RO3.2: Describe Millennials' wine spending habits.

Aim 3: Test the influence of the Living Labels app on Millennials' perception of the price of wine.

RQ.4: Did using the Living Labels app change Millennials' perception of the price of wine?

RO4.1: Did Millennials believe using the Living Labels app added value to the 19 Crimes wine?

RO4.2: Did using the Living Labels app change Millennials' perception of the cost of the 19 Crimes wine?

HO: The order of use of AR (before or after seeing a wine label) does not affect subjects' perceptions of the price of wines.

HA: The order of use of AR (before or after seeing a wine label) affected subjects' perceptions of the price of wines.

Design

A cross-sectional (single point in time), case study design was used to investigate the research aims 1 and 2, including the respective questions, and objectives. An experiment was conducted to investigate aim 3. The process used for this study is diagramed in Figure 7 and further explained by research aim and objectives noted in Figure 8. Also, references to research questions noted in this section will be described in procedural order, rather than order by research question.

First, I assessed the eligibility of participants, and only allowed individuals between the ages of 21 to 37 to participate in this study. Participants were enrolled in the study once they complete a demographic questionnaire to assess their behavior related to RQ.3. After each participant completed the questionnaire, he or she was randomly assigned to one of two groups.

Individuals assigned to Group 1 began with the virtual reality experience and questionnaire. Participants used the 19 Crimes version of the Living Labels app and responded to questions associated with RQ.1, then participants were shown a series of wine labels, and his or her areas of focus were measured using eye-tracking equipment.

After assessing each wine label, each participant responded to a series of questions to assess their beliefs about the label (e.g., desirable and unattractive elements, preferences), which are associated with RQ.2.

Individuals assigned to Group 2 were shown a series of wine labels, and their areas of focus were measured using eye-tracking equipment. After assessing each wine label, each participant responded to a series of questions to assess their beliefs about the label (e.g., desirable and unattractive elements, preferences), which are associated with RQ.2.

The final step for participants in group 2 was the virtual reality experience and questionnaire. Participants used the 19 Crimes version of the Living Labels app and responded to questions associated with RQ.1.

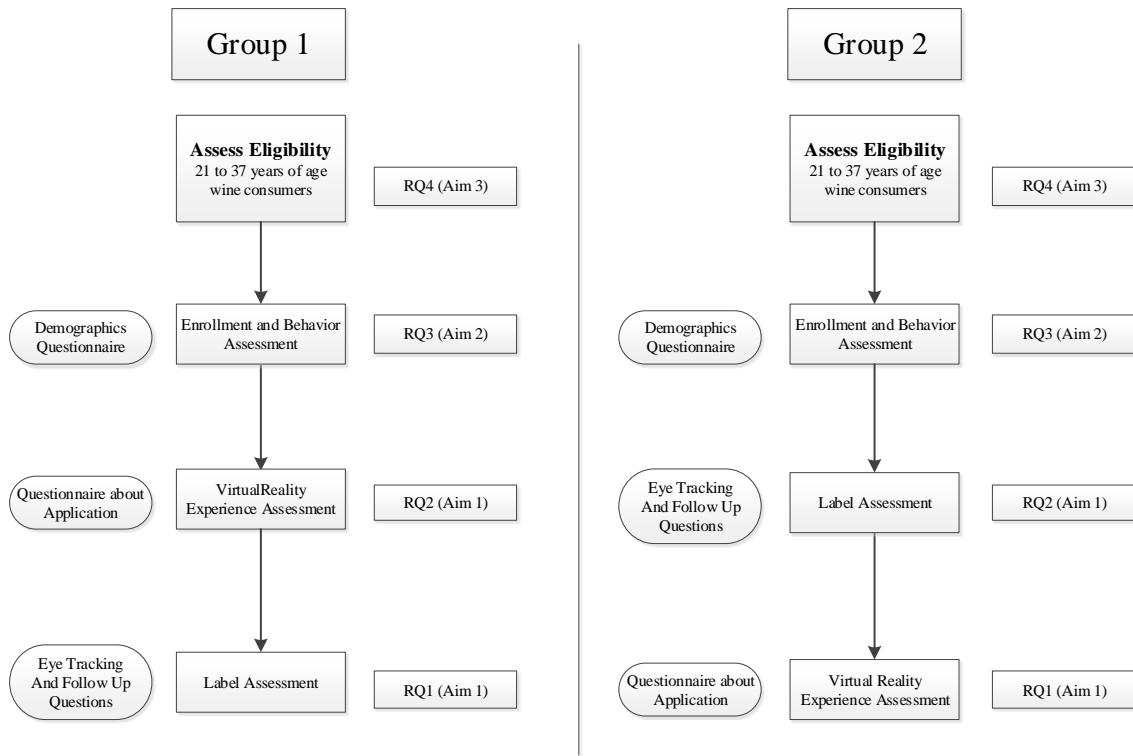


Figure 7. Illustration of the research design, separated by the two observation groups. Group 1 experienced virtual reality with the 19 Crimes version of the Living Labels app, and Group 2 viewed the series of wine labels in the eye tracking portion first.

A more expansive description of the design, participant characteristics, procedures, measures, and analyses will be presented later in this section. The variables associated with each research objective are noted in the order they were collected (see Figure 8).

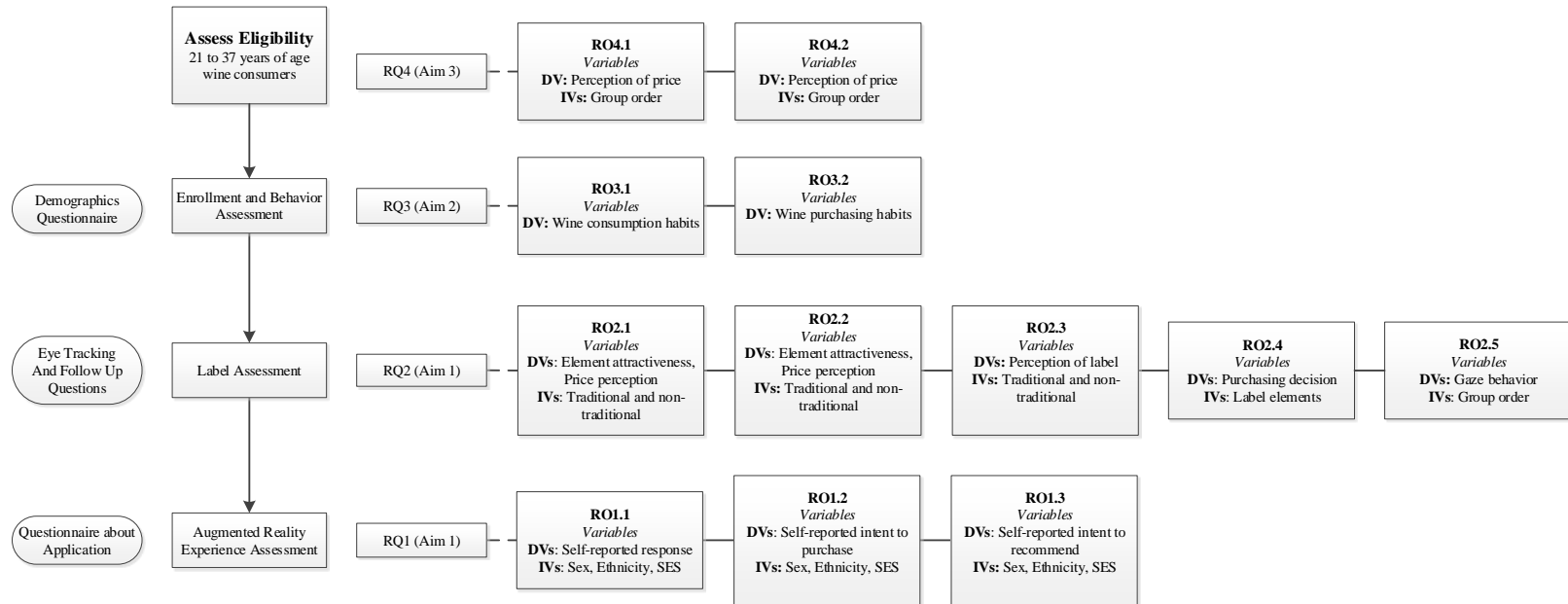


Figure 8. Research objectives and variables for this study.

Subject Characteristics and Sampling Procedure

Subject characteristics of study participants included, participant age, sex, ethnicity, education level, and socioeconomic status. Because wine is an age-limited product, participants were at least 21 years of age. The target population for this study was Millennials between the ages of 21 and 37 years of age. A sample of 68 participants was used to understand design preferences.

A convenience sample of individuals was used for this study. To recruit participants, I visited seven courses in the AGLS (Agriculture and Life Sciences) building on the Texas A&M University campus and briefly explained the purpose of this study. Potential participants meeting the age criteria (21- to 37-years-old) were recruited for the study. Potential participants were informed of the location and the dates and times the study will be conducted, and that they study would take 10 minutes. Potential participants were informed that their information would be kept confidential and they would not receive payment for their participation. Potential participants who chose to participate provided their first and last name, along with their email address. Potential participants received an email with the available dates and times and they selected one that most appropriately fit their schedule.

Questionnaire Validity and Reliability

I used a survey instrument to collect data for each objective in this study. I developed and pilot tested a four-section questionnaire (demographics, consumer behavior, responses to labels, and responses to the virtual reality app) before implementing data collection. Each section of the questionnaire, including measures,

constructs, and estimates of validity and reliability will be described in respective sections of this chapter.

RQ.1: How do Millennials respond to virtual environments?

Design: I used an experiment to test Millennials' response to the Living Labels virtual reality app. I collected data using a single method (quantitative), multimodal (19 Crimes virtual reality app and iPad questionnaire) approach. Participants viewed each label through the 19 Crimes virtual reality app, and then they were asked to respond to a questionnaire administered on an iPad. The dependent variables for this research question were: (a) self-reported response to the Living Labels app, (b) self-reported intent to purchase the selected wine, and (c) self-reported intent to recommend the selected wine product and the Living Labels app.

Data Collection Procedure: Participants were seated at a desk with two iPads and a wine bottle placed in front of them. For each participant, I opened the 19 Crimes version of the Living Labels app on one of the iPads, and then gave the iPad to the participant. I instructed each participant to view the label using the app and watch and listen to the character tell a story. Once the virtual reality experience was finished, the administrator gave the participant the second iPad and asked them to complete a questionnaire regarding their experience.

The questionnaire was used to measure participant's response to the 19 Crimes version of the Living Labels app, a virtual environment. A 5-point scale with bipolar anchors (1 = Strongly Disagree to 5 = Strongly Agree) was used to measure participant

reactions to the virtual environment. Participants were asked about their experience using the Living Labels app, the ease of use, and level of enjoyment.

Questionnaire Validity and Reliability: Section three of the questionnaire was used to collect information related to Millennials' responses after using the 19 Crimes version of the Living Labels app, in which they experienced a virtual environment. I developed the questionnaire based on Witmer and Singer's (1998) questionnaire that was used to measure presence in virtual environments. Witmer and Singer (1998) explained presence as, "...one's attention shifting from the physical environment to the VE, but does not require the total displacement of attention from the physical locale" (p. 226). They suggested a valid measure of presence should address factors that influence immersion and involvement. They described involvement in virtual environments as "...focusing one's attention and energy on a coherent set of VE stimuli" (p. 227). The stimulus for this study was the man on the 19 Crimes label who told a story. Participants who are immersed in the VE feel like they are they are interacting with the environment. Immersion and interaction were key elements evaluated in Witmer and Singer's (1998) study of presence.

Witmer and Singer (1998) used a seven-point scale format, based on the semantic differential principle with items anchored at both ends of the scale, using opposite descriptors. They asked participants to place an "X" in the box to indicate their response.

Similarly, I also used a scale to measure participant's responses. To remain consistent with the other three sections of the questionnaire, I used the widely noted and accepted, 5-point scale with bipolar anchors (1 = Strongly Disagree to 5 = Strongly

Agree). Participants indicated their agreement with the questions presented on the scale ranging from 1 (strongly disagree) to 5 (strongly agree). Questions used in the questionnaire are in Table 1, along with the source they were derived from.

Table 1.
Virtual Environment Questionnaire

Factor	Original Question	Revised Question
Presence ^a		
	How natural did your interactions with the environment seem?	I believe my interaction with the 19 Crimes app felt natural
	How aware were you of events occurring in the real world around you?	I was aware of events occurring in the real world around me
	How compelling was your sense of objects moving through space?	The 19 Crimes VR experience seemed realistic
	How involved were you in the virtual reality experience?	I felt involved in the virtual reality experience
Ease of Use ^a		
	How proficient in moving and interacting with the virtual environment did you feel at the end of the experience?	I found the 19 Crimes app easy to use
Enjoyment ^b		
	Playing Pokemon Go is exciting (raushnabel...)	I found the virtual reality experience exciting
	After using “Ai Guang Zhan” APP, to what extent will you recommend the application to your friends and family? (usability)	I would recommend this product to others

Note. ^a = Witmer & Singer, 1998; ^b = Rauschnabel, Rossmann, & Dieck, 2017, and Chiu & Lee, 2017.

Bryman (2012) defined face validity as “...the measure that reflects the content of the concept in question” (p. 171). Face validity was addressed in this study by consulting faculty members and other graduate students familiar with quantitative

research. They checked for spelling, grammar, instruction guidelines, and flow of the questionnaire. They were asked if the questions presented were adequate, based on the research aims, questions, and objectives related to this study. Lynn (1986) suggested at least six experts review the content of an instrument to deem it valid (Rutherford-Hemming, 2015).

Construct validity is defined by Rutherford-Hemming as, “the extent to which items on a tool, survey ...represent an adequately prepared definition of a concept” (2015, p. 390). Survey questions were based on Witmer and Singer’s (1998) questionnaire that was used to study presence in virtual environments.

The questionnaire was refined and finalized before beginning the primary study. To assess internal reliability, a pilot test of 128 people was conducted for the initial test of the questionnaire. No less than 72 hours after the initial test, a retest was conducted to test the instrument’s stability. Pearson *r* coefficients were calculated for each item by comparing the responses from both administrations.

Analysis: I downloaded the respondents’ data from the Qualtrics (2018) questionnaire to a Microsoft® Excel spreadsheet, and then I imported the data into IBM® SPSS®, version 25. The data included in this study were nominal, ordinal, or scale-level. Data were categorized by research aim, questions, and objectives.

RQ.2: What are Millennials’ perceptions of and responses to the physical environment?

Design: I used an experiment to test the effect of the Living Labels 19 Crimes app on Millennials’ perceptions of wine label characteristics and design. I collected data using two methods: Tobii Pro X2-60 eye tracking and a Qualtrics (2018) questionnaire.

RQ.2 was based on three independent variables: (a) label type (traditional or untraditional), (b) label elements, and (c) group order. The dependent variables for this research question were: (a) perception of price, (b) element attractiveness, (c) perception of the label, (d) purchasing decisions, and (e) gaze behavior.

Participants viewed a series of wine labels and then answered a questionnaire regarding their opinions of each labels design and characteristics. The design of this study closely followed that of Laeng et al. (2016), who also used eye tracking and a questionnaire to evaluate wine label fixations, preferences, and value associated with design.

I used similar areas of interest (AOI) to evaluate fixations on different elements of wine label design. Similarly, I asked participants about wine label elements using a survey. Questions were presented on a 5-point scale with bipolar anchors (1 = Strongly Disagree to 5 = Strongly Agree). Also, participants were asked about the price range for each wine, based on their perception of the associated label. The resulting survey data were used to address RO2.1 to RO2.3. Data from eye tracking were used to address RO2.4.

Data Collection Procedure and Measure: Marketing and consumer researchers use eye tracking hardware to objectively measure consumer's responses to marketing messages and advertisements (Tobii Pro, n.d.a). Specifically, in package design and shelf testing, results from eye tracking studies can help companies understand what attributes are affectively communicated, what design holds consumers' attention, and how their product performs compared to their competitors (Tobii Pro, n.d.a).

For this study, I collected data using Tobii Pro X2-60 eye tracking hardware. Data were analyzed using Tobii Pro Studio software, version 3.4.8. Tobii Pro Lab had been installed on a Dell computer in the Digital Media Research and Development Laboratory (DMRDL) on the Texas A&M University campus.

The Tobii Pro Lab device was mounted on the same computer for each data collection period, to insure the environment and lighting were consistent. The administrator was trained in administering the eye tracking study.

Participants were provided a brief description of the study and a consent form. Participants were seated 60cm from the screen, for precision and accuracy, as recommended in the Tobii user guide (Tobii Technology, 2013). Participants were instructed to follow a red circle with their eyes, as it moved across the screen. This calibration procedure measured the characteristics of the participant's eyes and calculated gaze data and both light and dark pupil methods were tested to identify the participant's eye characteristics and the lighting conditions (Tobii pro, n.d.b). After the test administrator confirmed the calibration was successful, the study began.

Participants viewed a photo of a wine label for 10 seconds (as suggested by Laeng et al. 2016 and supported by the findings of Bakopoulos et al. (2017)). Next, the screen changed to a survey questionnaire. Participants were asked to rate the wine bottle on attractiveness, their evaluations of certain design elements, and their perception of the cost/value of the wine.

This process of viewing a label and answering a survey continued until the participant viewed all six labels. After each participant completed the experiment, he or

she was asked to begin the second part of the study, the virtual reality experience, which was described in RQ.1.

Stimuli: The eye tracking study and questionnaire were constructed from methods, stimuli, AOI, and questionnaire components reported by Laeng et al. (2016), Elliot and Barth (2012), and Wolf and Thomas (2007). The wine labels selected for this study were included on the *Wine Rising Stars* list, created by the Beverage Information & Insight Group, in 2017. The wine selected from this list minimizes bias, as participants were less likely to be familiar with these labels than the top wines in the US.

Elliot and Barth (2012) suggested choosing wine for a study, all in the same category, the same size, and similar in price, to minimize bias. Therefore, I chose six red wines, each in a 750 ml bottle, all ranging in price from \$8 to \$18. The prices for each bottle of wine are suggested retail prices and were derived from Spec's Wines, Spirits & Finer Foods.

To evaluate Millennials perceptions of traditional and non-traditional bottles of wine, I relied on Elliot and Barth's (2012) classifications I selected three wine bottles that classify as traditional, and three that classify as non-traditional.

The six labels were separated into traditional and non-traditional classifications (refer to Figure 9). None of the labels exclusively met all Elliot and Barth's (2012) classifications. Therefore, the labels ranged from very traditional, to very modern and non-traditional. The classifications used for this study are presented in Table 2.

Table 2.

Traditional and Non-traditional Characteristics of Wine Bottles

	Traditional Characteristics	Non-traditional Characteristics
<i>Name</i>	Wine or winery related name, association with chateaux, grapes, vineyard, and wine family.	Non-wine or -winery related name, no association with chateaux, grapes, etc.
<i>Color</i>	Dark (e.g., burgundy, navy, red) or neutral (grey, brown, black).	Bright and/or vibrant (e.g., orange, lime green, pink, bright red).
<i>Image or Picture</i>	Chateaux, coat-of-arms, vineyard, grape	Animal, bird, fish, non-wine or winery related.
<i>Layout</i>	White background or solid background of a traditional color, standard typeface, vintage style.	Non-standard layout (e.g., split colors or mix of formats), modern typeface.

Figures 10-15 provide the wine bottles selected as stimuli for this study. The most traditional was Joel Gott (see Figure 10), followed by Alverdi (see Figure 11) and Dreaming Tree (see Figure 12), with the non-traditional being Chloe (see Figure 13), 19 Crimes (see Figure 14), and Freakshow (see Figure 15). Participants were unaware of these classifications and the wine labels were presented in a randomized order.

Participants viewed the label for 10 seconds, as suggested by Laeng et al. (2016), as an appropriate duration for an eye tracking study. I contacted the marketing directors and coordinators for each wine brand to obtain permission and digital copies of the labels used in this study I have included a visual tool below in Figure 9 to showcase all six labels used in this study, separated by traditional and non-traditional classifications.



Figure 9. The six wine labels are presented and categorized by traditional and non-traditional wine labels.

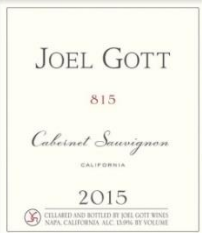
Joel Gott		Characteristics	
\$13.30		Traditional	Non-traditional
Label	Elements		
	Name	X	
	Color	X	
	Image or Picture	X	
	Layout	X	

Figure 10. Joel Gott is a cabernet sauvignon, priced at \$13.13 per bottle, classified as traditional.


Alverdi \$10.16			
Label	Elements	Characteristics	
		Traditional	Non-traditional
	<i>Name</i>	X	
	<i>Color</i>	X	
	<i>Image or Picture</i>		X
	<i>Layout</i>	X	

Figure 11. Alverdi is a cabernet sauvignon, priced at \$10.16, classified as non-traditional, but contains some traditional elements.

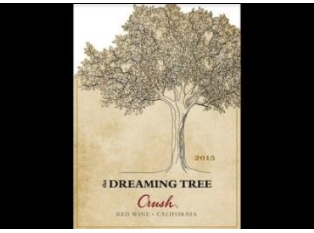
Dreaming Tree \$11.34			
Label	Elements	Characteristics	
		Traditional	Non-traditional
	<i>Name</i>		X
	<i>Color</i>	X	
	<i>Image or Picture</i>		X
	<i>Layout</i>	X	

Figure 12. Dreaming Tree is a crush red blend, priced at \$11.34 per bottle, classified as traditional, but contains some non-traditional elements.


Chloe \$13.34			
Label	Elements	Characteristics	
		Traditional	Non-traditional
	<i>Name</i>		X
	<i>Color</i>	X	
	<i>Image or Picture</i>		X
	<i>Layout</i>	X	

Figure 13. Chloe is a pinot noir, priced at \$13.34, classified as traditional, but contains some non-traditional elements.

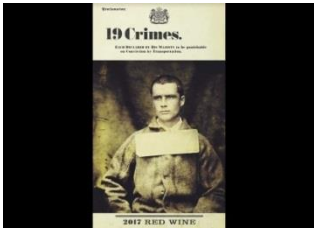
19 Crimes \$10.92 per bottle			
Label	Elements	Characteristics	
		Traditional	Non-traditional
	<i>Name</i>		X
	<i>Color</i>	X	
	<i>Image or Picture</i>		X
	<i>Layout</i>		X

Figure 14. 19 Crimes is a red wine, priced at \$10.92 per bottle, with a non-traditional label.

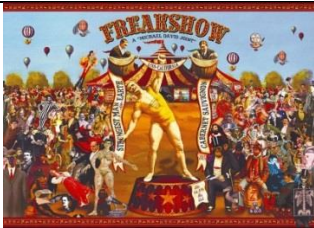
Freakshow \$17.78			
Label	Elements	Characteristics	
		Traditional	Non-traditional
	<i>Name</i>		X
	<i>Color</i>		X
	<i>Image or Picture</i>		X
	<i>Layout</i>		X

Figure 15. Freakshow is a cabernet, priced at \$17.78 per bottle, with a non-traditional label.

After viewing each label, participants were asked to complete a questionnaire. Participants were asked what characteristics of the wine labels they found attractive or unattractive. These characteristics corresponded to the AOI used in the eye tracking components of this study: The name of the wine, image or picture, the label, and the brand, derived from Elliot and Barth's (2012) list of extrinsic features. Participants were also asked about their preferences related to the traditional and non-traditional criteria

presented in Table 2. Also, participants were asked about the cost of the wines include in this study: (a) under \$4.99, (b) \$5.00-\$9.99, (c) 10.00-\$14.99, (d) \$15.00-\$19.99, and (e) \$20.00 and higher, which were used by Wolf and Thomas (2007). The original wine label images, the AOI overlaid on the image, the size of each element and the percent of total of each element are included in the following figures. The background is the remaining area of the wine label that was not included in any AOI. The wine labels are presented in the order that participants viewed them in the study.

The Dreaming Tree label was considered traditional, as presented in Figure . The total area of the label was 27.39 in². The largest component/element was the image (17.95 in²), which was 65.5% of the total label. The remaining elements were substantially smaller, with the second largest being the name at 6.7%. The background was 23% of the total wine label.

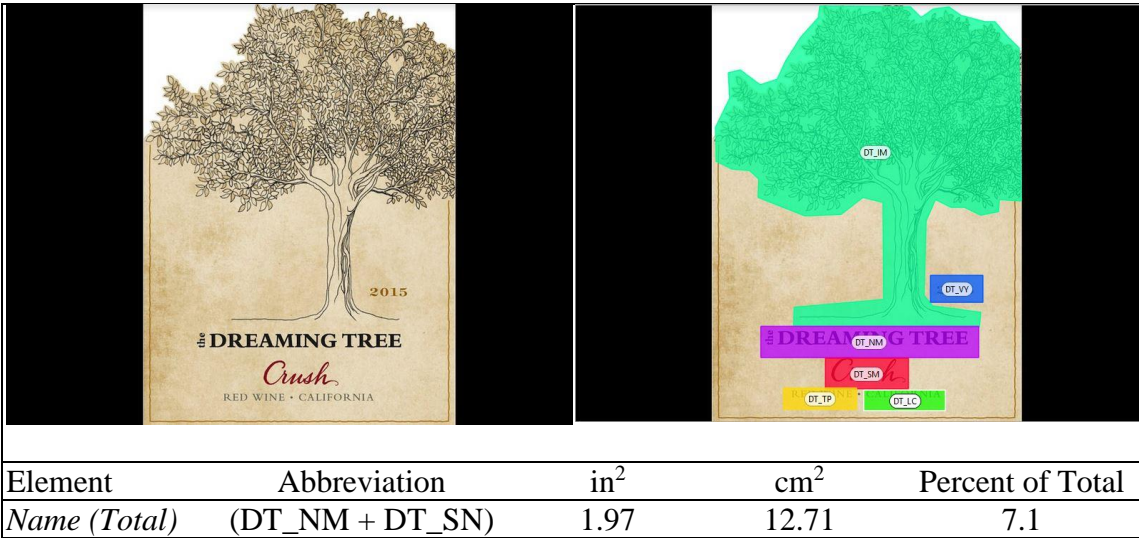


Figure 16 . The unaltered Dreaming Tree label is presented alongside of the label with the AOI. Dreaming Tree has a total of six AOI. Background was not an AOI, but was included for reference and perspective

Element	Abbreviation	in ²	cm ²	Percent of Total
Primary Name	DT_NM	1.85	11.94	6.7
Subname	DT_SN	0.12	0.77	0.4
Logo	--	--	--	--
Type	DT_TP	0.29	1.87	1.0
Location	DT_LC	0.27	1.74	0.9
Description	--	--	--	--
Vintage Year	DT_VY	0.60	3.87	2.1
Image	DT_IM	17.95	115.81	65.5
Background	--	6.31	40.71	23.0

Figure 16. Continued.

The 19 Crimes label was considered non-traditional, as presented in Figure . The total area of the label was 21.95 in². The largest component/element was the image (8.44 in²), which was 68.4% of the total label. The remaining elements were substantially smaller, with the second largest being the name at 5.9%. The background was 44.1% of the total wine label.

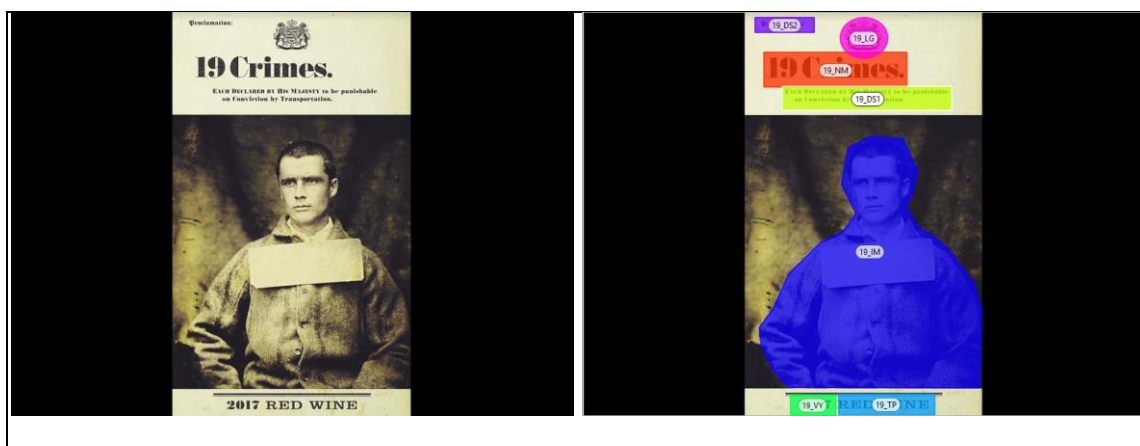


Figure 17. The unaltered 19 Crimes label is presented alongside of the label with the AOI. 19 Crimes has a total of seven AOI. Background was not an AOI, but was included for reference and perspective.

Element	Abbreviation	in ²	cm ²	Percent of Total
Name	19_NM	1.30	8.39	5.9
Logo	19_LG	0.39	2.52	1.7
Type	19_TP	0.52	3.35	2.3
Location	--	--	--	--
Description (Total)	(19_DS1, 19_DS2)	1.37	8.39	6.2
Description 1	19_DS1	1.12	7.23	5.1
Description 2	19_DS2	0.25	1.61	1.1
Vintage Year	19_VY	0.25	1.61	1.1
Image	19_IM	8.44	54.45	38.4
Background	--	9.68	62.45	44.1

Figure 17. Continued.

The Joel Gott label was considered traditional, as provided in Figure . The total area of the label was 31.88 in². The largest component/element was the name (4.44 in²), which was 13.9% of the total label, closely followed by the type of wine (3.97 in², which was 12.4% of the total label. The remaining elements were smaller in comparison to the other elements. The background was 29.1% of the total wine label.

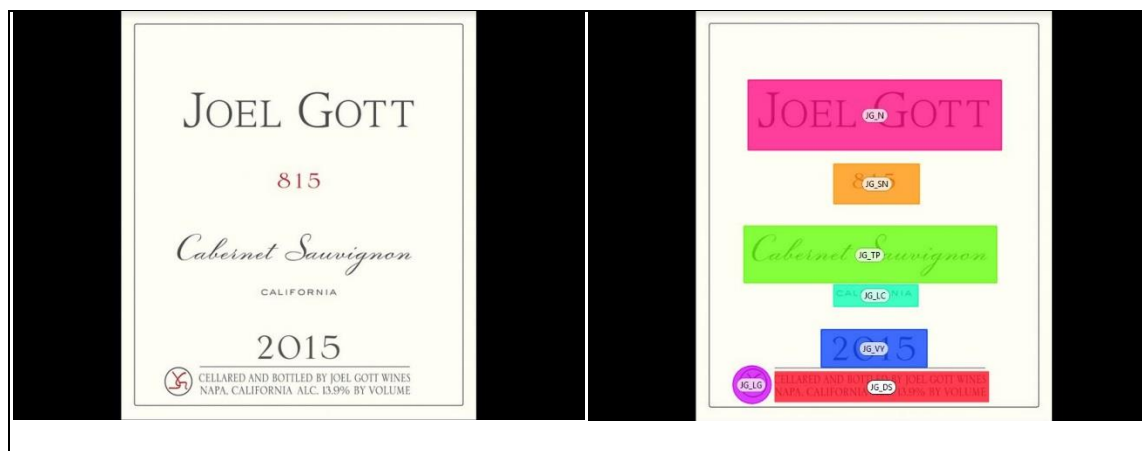


Figure 18. The unaltered Joel Gott label is presented alongside of the label with the AOI. Joel Gott has a total of seven AOI. Background was not an AOI, but was included for reference and perspective.

Element	Abbreviation	in ²	cm ²	Percent of Total
<i>Name (Total)</i>	(JG_N, JG_SN)	5.42	34.97	17.0
<i>Primary Name</i>	JG_N	4.44	28.65	13.9
<i>Subname</i>	JG_SN	0.98	6.32	3.0
<i>Logo</i>	JG_LG	0.27	1.74	0.8
<i>Type</i>	JG_TP	3.97	25.61	12.4
<i>Location</i>	JG_LC	0.50	3.23	1.5
<i>Description</i>	JG_DS	1.69	10.90	5.3
<i>Vintage Year</i>	JG_VY	1.91	12.32	5.9
<i>Image</i>	--	--	--	--
<i>Background</i>	--	18.12	116.90	29.1

Figure 18. Continued.

The Alverdi label was considered non-traditional, as presented in Figure . The total area of the label was 30.21 in². The largest component/element was the logo (3.48 in²), which was 11.5% of the total label. The second largest element was the name (1.83 in²), which was 6% of the total label. The background was 57.1% of the total wine label.

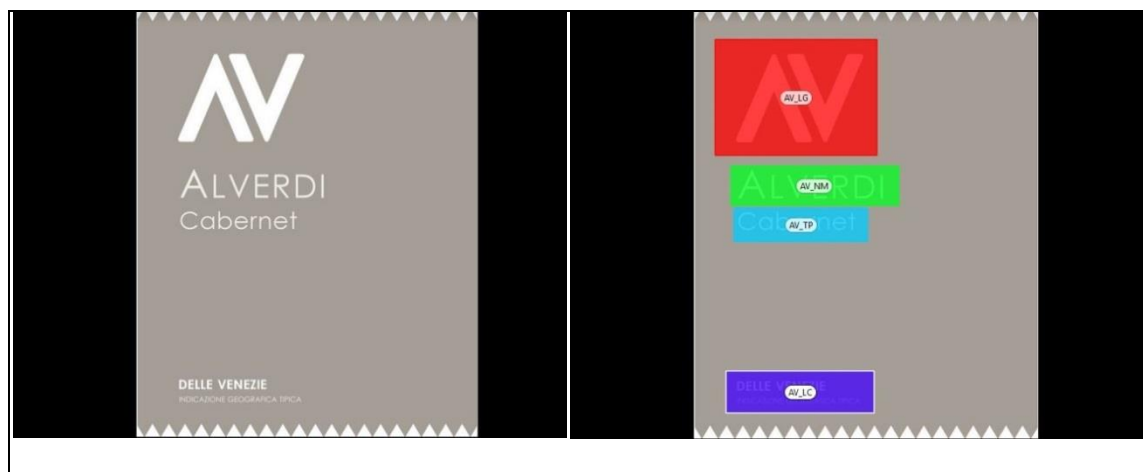


Figure 19. The unaltered Alverdi label is presented alongside of the label with the AOI. Alverdi has a total of four AOI. Background was not an AOI, but was included for reference and perspective.

Element	Abbreviation	in ²	cm ²	Percent of Total
Name	AV_NM	1.83	11.81	11.8
Logo	AV_LG	3.48	22.45	22.5
Type	AV_TP	1.21	7.81	4.0
Location	AV_LC	1.37	8.84	4.5
Description	--	--	--	--
Vintage Year	--	--	--	--
Image	--	--	--	--
Background	--	22.32	143.99	57.1

Figure 19. Continued.

The Chloe label was considered traditional, as presented in Figure 19. The total area of the label was 36.06 in². The largest component/element was the image (3.30 in²), which was 9.1% of the total label, followed by the name (1.54 in²), which was 4.2% of the total label. The remaining elements were smaller in comparison to the other elements. The background was 73.6% of the total wine label.


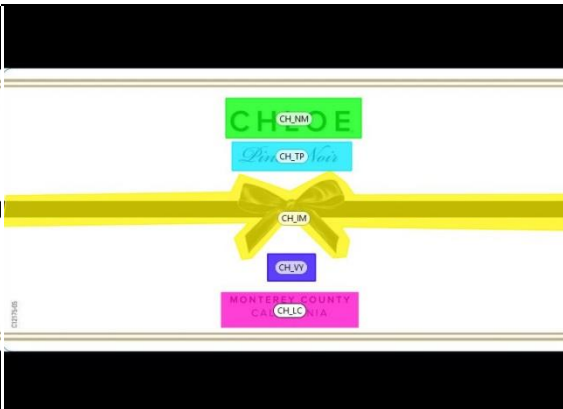
				
Element	Abbreviation	in ²	cm ²	Percent of Total

Figure 20. The unaltered Chloe label is presented alongside of the label with the AOI. Chloe has a total of five AOI. Background was not an AOI, but was included for reference and perspective.

Element	Abbreviation	in ²	cm ²	Percent of Total
Name	CH_NM	1.54	9.94	4.2
Logo	--	--	--	--
Type	CH_TP	0.99	6.39	2.7
Location	CH_LC	1.29	8.32	3.5
Description	--	--	--	--
Vintage Year	CH_VY	0.36	2.32	1.0
Image	CH_IM	3.30	21.29	9.1
Background	--	28.58	184.38	73.6

Figure 20.Continued.

The Freakshow label was considered non-traditional. The total area of the label was 53.22 in². The largest components were the sub images (13.55 in², 14.04 in²), which were 25.4% and 26.3% of the total label. The second largest element was the image (7.94 in²), which was 14.9% of the total label. The remaining elements were smaller in comparison to the other elements, as provided in Figure 21. The background was 23.4% of the total wine label.



Figure 21. The unaltered Freakshow label is presented alongside of the label with the AOI. Freakshow has nine AOI. Background was not an AOI, but was included for reference and perspective.

Element	Abbreviation	in ²	cm ²	Percent of Total
<i>Name</i>	FS_NM	2.34	15.10	4.4
<i>Logo</i>	--	--	--	--
<i>Type</i>	FS_TP	0.89	5.74	1.6
<i>Location</i>	FS_LC	0.43	2.77	0.8
<i>Description</i>	FS_DS1	1.15	7.42	2.1
<i>Vintage Year</i>	FS_VY	0.12	0.77	0.2
<i>Image (Total)</i>	(FS_IM, FS_SIM1, FS_SIM2)	35.53	229.23	66.7
<i>Primary Image</i>	FS_IM	7.94	51.23	14.9
<i>Subimage 1</i>	FS_SIM1	13.55	87.42	25.4
<i>Subimage 2</i>	FS_SIM2	14.04	90.58	26.3
<i>Winery</i>	FS_WR	0.30	1.94	0.5
<i>Background</i>	--	12.46	80.38	23.4

Figure 21. Continued.

Validity and Reliability: Bryman (2012) defined face validity as “...the measure that reflects the content of the concept in question” (p. 171). Face validity was addressed in this study by consulting faculty members and graduate students familiar with quantitative research. They checked for spelling, grammar, instruction guidelines, and flow of the questionnaire. They were also asked if the questions presented were adequate, based on the research aims, questions, and objectives related to this study. Lynn (1986) suggested at least six experts review the content of an instrument to deem it valid (Rutherford-Hemming, 2015).

Construct validity was defined by Rutherford-Hemming as, “...the extent to which items on a tool, survey ...represent an adequately prepared definition of a concept” (2015, p. 390). Survey questions, label criteria, and selection for this study were based on components from Laeng et al. (2016), Elliot and Barth (2012), and Wolf and Thomas’ (2007).

The questionnaire and eye-tracking portions were refined and finalized before beginning the case study. To assess internal reliability, a pilot test of 128 people was conducted for the initial test of the questionnaire. No less than 72 hours after the initial test, a retest was conducted to test the instrument's stability. Pearson r coefficients were calculated for each item by comparing the responses from both administrations.

Analyses: I downloaded the respondent's data from the Qualtrics (2018) questionnaire to a Microsoft® Excel spreadsheet, and then I imported the data into IBM® SPSS®, version 25. The data included in this study were nominal, ordinal, or scale-level. Data were categorized by research aim, questions, and objectives.

Eye tracking: When assessing the AOI, points of fixation, and duration of fixation for the eye tracking study, Elliot and Barth (2012) extrinsic packaging factors were used to address RO2.4 presented in *Table 2*. AOI were generated in Tobii software for the name of the wine, image or picture, the label, and the brand. A relative duration heat map was used to show "...accumulated time each participant spent fixating at the different areas of the stimulus relative to the total time the participant spent looking at the stimulus" (Bojko, 2009, p. 33) The heat maps were used to observe the patterns and differences in visual gaze, for each wine label.

Difference in sizes of label elements could influence number of fixations on the element. To account for the differences in size among label elements, the areas were weighted. For example, the greatest number of unweighted fixations for the Dreaming Tree label was on the image. The image was the largest element on the label, therefore commanding the most fixations. However, without weighting, we cannot determine if

the fixations were attributable to the size or the design elements. Weighted fixation scores reflect visual attention irrespective of size. Therefore, weighted fixation scores are a more accurate measure of the attention command of each element.

RQ.3: What are Millennials' wine consumption and purchasing habits?

Design: I used a cross-sectional, case study design to describe Millennials' wine consumption and purchasing habits. I collected data using a single method (quantitative), single mode (questionnaire) approach. The dependent variables for this research question were: (a) wine consumption habits and (b) wine purchasing habits.

Data Collection Procedure and Measure: Participants were seated in the in the DMRDL where they were given a consent form. After consenting, they were asked to complete an iPad questionnaire. They input their UIN, name, and demographic information regarding their age, sex, ethnicity, and socioeconomic status. Following demographics, they were asked about their media consumption, purchasing decisions, spending habits, and wine consumption. Once the questionnaire was completed they were moved into another room, to complete the eye tracking portion of the study.

Validity and Reliability: Section one of the quantitative questionnaire included demographics including gender, age, ethnicity, socioeconomic status, and education. Section two of the questionnaire was composed of psychographic quantitative questions related to media consumption, sources of information and news, purchasing decisions, and wine spending habits.

The majority of the questions included in the questionnaire were created by researchers in the Digital Media Research and Development Laboratory (DMRDL) at Texas A&M University. The questions were developed from media and demographic consumption reports (Nielsen 2013, Nielsen, 2014; Pew, 2010), communication industry metrics, and an empirical research report by Pendergast (2010). The demographic and media consumption questions were pilot tested and revised several times and the reported final estimates of temporal stability (test-retest) ranged from .79 to .96. The consumer behavior questions regarding wine spending were derived from Elliot and Barth (2012), asking consumers their enjoyment level of wine, their frequency of wine consumption, and the price per bottle usually spent.

Bryman (2012) defined face validity as “the measure that reflects the content of the concept in question” (p. 171). Face validity was addressed in this study by consulting faculty members and graduate students familiar with quantitative research. They checked for spelling, grammar, instruction guidelines and flow of the questionnaire. They were also asked if the questions presented are adequate, based on the research aims, questions, and objectives related to this study. Lynn (1986) suggested at least six experts review the content of an instrument to deem it valid (Rutherford-Hemming, 2015).

Construct validity was defined by Rutherford-Hemming as, “the extent to which items on a tool, survey ...represent an adequately prepared definition of a concept” (2015, p. 390). Survey questions were based on Elliot and Barth’s (2012) wine consumption questionnaire, and the consumer behavior demographic questions were derived from DMRDL questionnaires.

The questionnaire was refined and finalized before beginning the case study. To assess internal reliability, a pilot test of 128 people was conducted for the initial test of the questionnaire. No less than 72 hours after the initial test, a retest was conducted to test the instrument's stability. Pearson r coefficients were calculated for each item by comparing the responses from both administrations and resulted in final estimates of temporal stability (test-retest) ranged from .82 to .97.

Analysis: I downloaded the respondent's data from the Qualtrics (2018) questionnaire to a Microsoft® Excel spreadsheet, and then I imported the data into IBM® SPSS®, version 25. The data included in this study were nominal, ordinal, or scale-level. Data were categorized by the research aim, questions, and objectives.

RQ.4: Did using the Living Labels app change Millennials' perception of the price of wine?

Design: I used an experiment to test the effect of the Living Labels 19 Crimes app on Millennials' perceptions of the price of 19 Crimes. The data collection procedure and measures are congruent with those previously mentioned in RQ.1. Data were collected using a single method (quantitative), multimodal (19 Crimes virtual reality app and iPad questionnaire) approach. Participants viewed each label through the 19 Crimes virtual reality app, and then they were asked to respond to a questionnaire administered on an iPad. The dependent variable for this research question was perception of price and the independent variable was the group order.

Participants were randomly assigned to one of two groups, determining the order they experienced the virtual reality app and viewed the wine labels. Group 1 experienced the virtual reality experience with the 19 crimes app first, reporting their initial perception of the price of the 19 Crimes wine, and then viewed the wine in the eye tracking study, and reported their perceived price of the wine for a second time. Group 2, reversely, viewed the 19 Crimes wine label in the eye tracking study first, reporting their perceived price of wine, and then experiencing the virtual reality app, and reporting the perceived price of wine for a second time, as presented in Figure 22.

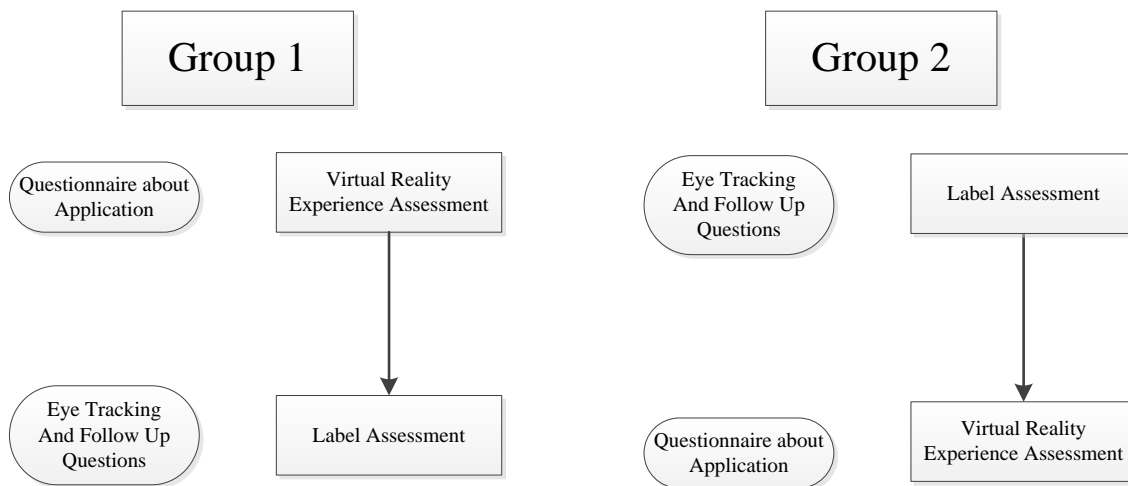


Figure 22. The participants were randomly assigned to one of two groups. Group 1 ($n = 34$) experienced virtual reality first, followed by the label assessment, and Group 2 ($n = 34$) assessed the labels and then experienced the virtual reality experience.

Validity and Reliability: Bryman (2012) defined face validity as “...the measure that reflects the content of the concept in question” (p. 171). Face validity was addressed in this study by consulting faculty members and other graduate students

familiar with quantitative research. They checked for spelling, grammar, instruction guidelines, and flow of the questionnaire. They were asked if the questions presented were adequate, based on the research aims, questions, and objectives related to this study. Lynn (1986) suggested at least six experts review the content of an instrument to deem it valid (Rutherford-Hemming, 2015).

Construct validity is defined by Rutherford-Hemming as, “the extent to which items on a tool, survey ...represent an adequately prepared definition of a concept” (2015, p. 390). Survey questions were based on Wolf and Thomas (2007) questionnaire that was used to evaluate price perception of each wine. The price categories were (a) under \$4.99, (b) \$5.00-\$9.99, (c) \$10.00-\$14.99, (d) \$15.00-\$19.99, and (e) \$20.00 and higher.

The questionnaire was refined and finalized before beginning the primary study. To assess internal reliability, a pilot test of 128 people was conducted for the initial test of the questionnaire. No less than 72 hours after the initial test, a retest was conducted to test the instrument’s stability. Pearson *r* coefficients were calculated for each item by comparing the responses from both administrations and resulted in final estimates of temporal stability (test-retest) ranged from .82 to .97.

Analysis: I downloaded the respondent’s data from the Qualtrics (2018) questionnaire to a Microsoft® Excel spreadsheet, and then I imported the data into IBM® SPSS®, version 25. The data included in this study were nominal, ordinal, or scale-level. Data were categorized by research aim, questions, and objectives.

I analyzed data using IBM® SPSS® Statistics (version 25.0) and followed the multivariate analysis procedures noted by Tabachnick and Fidell (2013). Multivariate analysis of variance (MANOVA) was used to compare the mean scores of dependent variables (perception of added value and perceived price) across conditions (group order) and test interactions among dependent variables.

CHAPTER V

RESULTS

Before introducing the results of the study by research question, aim, and objective, the samples demographics, psychographics and behaviors are described. A total of 72 participants participated in the study. However, missing data in the wine study intake, the label questionnaire or the virtual reality questionnaire lead to eliminating four of the participants' responses. A total of 68 participant's responses were reported in this study. Data were imported into IBM SPSS Statistics version 25 to calculate and describe the major demographics of the overall sample, included in Table 3.

The sixty-eight participants included in this study were born between the years of 1997 and 1981. The majority of the population were between the ages of 21 and 24 ($M = 23$, $SD = 2.35$). Age was calculated by subtracting the year the participant was born from 2018, the year the data were collected. Of the 68 participants, 67.6% were female and 32.4% were male. The majority of participants in the sample indicated White as their race ($f = 62$, 91.2%) and 13.2% reported Hispanic as their ethnicity.

Table 3.
Subject Characteristics

Gender	<i>f</i>	%
Female	46	67.6
Male	22	32.4
Non-binary/third gender	0	0.0
Prefer to self-describe	0	0.0
Prefer not to say	0	0.0

Table 3. Continued.

	<i>f</i>	%
Race		
American Indian or Alaska Native	3	4.4
Asian	1	1.5
Black or African American	4	5.9
Native Hawaiian or Pacific Islander	1	1.5
White	62	91.2
Other	0	0.0
Ethnicity		
None selected	56	82.4
Hispanic	9	13.2
Latino	0	0.0
Spanish	3	4.4

Almost 25% ($f = 17$) indicated an annual household income below \$10,000, in contrast to the 16.2% ($f = 11$) who indicated a household income of \$100,000 to \$149,999. There are limitations to participant's responses to this question. It is unknown if the participants recorded their personal income or total household income Table 4.

Table 4.

Household Income

	<i>f</i>	%
Less than \$10,000	17	25.0
\$10,000 to \$19,999	9	13.2
\$20,000 to \$29,999	3	4.4
\$30,000 to \$39,999	7	10.3
\$40,000 to \$49,999	3	4.4
\$50,000 to \$59,999	2	2.9
\$60,000 to \$69,999	4	5.9
\$70,000 to \$79,999	3	4.4
\$80,000 to \$89,999	2	2.9
\$90,000 to \$99,999	7	10.3
\$100,000 to \$149,999	11	16.2

A majority of the participants ($f = 60$, 88%) had a high school diploma or equivalent, followed by eight participants indicating they have completed a 4-year college degree (see Table 5).

Table 5.
Level of Education Completed

	<i>f</i>	%
Completed high school diploma or equivalent (GED)	60	88.0
Completed a 4-year college degree (bachelor's) or higher	8	11.8

More than one-half of the participants (see Table 6) reported they check their mail weekly ($f = 38$, 55.9%), followed by 26.5% checking their mail daily ($f = 18$).

Table 6.
How often Millennials Check their Mail

	<i>f</i>	%
Daily	18	26.5
Weekly	38	55.9
Monthly	6	8.8
Seldom or Never	6	8.8

The majority of Millennials ($f = 51$, 75%) reported they use their smartphone to check their email, followed by 19.1% reported using their laptop ($f = 13$). Only 5.9% use their desktop to check emails ($f = 4$), as listed in Table 7.

Table 7.
Device Used to Check Email

	<i>f</i>	%
Smartphone	51	75.0
Laptop	13	19.1
Desktop	4	5.9

Overall, the majority of Millennials reported they use social media (see Table 8). The social media platform used the most by Millennials was Facebook ($f = 66, 97.1\%$), closely followed by Instagram ($f = 62, 91.2\%$), and Snapchat ($f = 62, 91.2\%$). The social media platform used the least by Millennials was Twitter ($f = 24, 35.3\%$), followed by Pinterest ($f = 34, 50\%$), and LinkedIn ($f = 34, 50\%$). The majority watch television ($f = 55, 80.9\%$) and listen to the radio ($f = 53, 77.9\%$). The medium used to listen to music the most was Spotify ($f = 44, 64.7\%$) and the least was the iHeart Radio app ($f = 1, 1.5\%$). Between Netflix and Hulu, Millennials indicated they use Netflix ($f = 59, 86.8\%$) significantly more.

The frequency of usage between the media platforms varied (see Table 9). The social media platform used the most was Snapchat ($f = 57$), with 91.9% of participants indicating they use the platform at least once per day. This was closely followed by Facebook ($f = 57, 86.4\%$), and Instagram ($f = 55, 88.7\%$). Of the participants, 69.1% reported watching TV once per day, or more ($f = 38$). Netflix ($f = 41, 60.3\%$) was also most commonly watched once per day, or more. In relation to music, 37 participants

indicated they listen to the radio once per day, or more (69.8%), followed by 41 participants (81.8%) who used Spotify once per day or more.

Table 8.

Social Media Usage and Frequency

	No		Yes		1		2		3		4		5	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Facebook	2	2.9	66	97.1	57	86.4	5	7.6	3	4.5	1	1.5	0	0.0
Twitter	24	35.3	44	64.7	31	70.5	5	11.4	5	11.4	2	4.5	1	2.3
Instagram	6	8.8	62	91.2	55	88.7	2	3.2	2	3.2	2	3.2	1	3.2
Pinterest	34	50.0	34	50.0	14	41.2	9	26.5	6	17.6	3	8.8	2	5.9
Snapchat	6	8.8	62	91.2	57	91.9	4	6.5	1	1.6	0	0.0	0	0.0
LinkedIn	34	50.0	34	50.0	7	20.6	12	35.3	8	23.5	6	17.6	1	2.9

Note. No = Does not use noted social platform, Yes = Uses noted social platform at least once per month; The respective frequencies (1 – 4) for each social platform are only reported for those respondents who indicated using the platform at least once per month; 1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month.

Table 9.
Media Usage and Frequency

	No		Yes		1		2		3		4	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Radio AM or FM	15	22.1	53	77.9	37	69.8	11	20.8	4	7.5	1	1.9
Sirius - XM Satellite												
Radio	56	82.4	12	17.6	7	58.3	3	25.0	2	1.7	0	0.0
Magazine	48	70.6	20	29.4	0	0.0	7	35.0	11	55.0	2	10.0
YouTube	26	38.2	42	61.8	21	50.0	14	33.3	6	14.3	1	2.4
Spotify	24	35.3	44	64.7	36	81.8	7	15.9	1	2.3	0	0.0
Pandora	47	69.1	21	30.9	10	47.6	8	38.1	2	9.5	1	4.8
Netflix	9	13.2	59	86.8	41	60.3	15	25.4	3	5.1	0	0.0
Hulu	36	52.9	32	47.1	16	50.0	15	46.9	0	0.0	1	3.1
iTunes	41	60.3	27	39.7	17	63.0	6	22.2	1	3.7	3	11.1
iHeart Radio app	67	98.5	1	1.5	1	100.0	0	0.0	0	0.0	0	0.0
Podcasts	55	80.9	13	19.1	4	30.8	3	23.1	3	4.4	3	4.4

Note. No = Does not use noted medium or platform, Yes = Uses noted medium or platform at least once per month; The respective frequencies (1 – 4) for each medium or platform are only reported for those respondents who indicated using the platform at least once per month; 1 = Once per day (or more); 2 = Once per week; 3 = 2-3 Times per month; 4 = Once per month.

Aim 1: Describe Millennials' response to virtual and physical environments

RQ.1: How do Millennials respond to virtual environments?

RO1.1: Describe how Millennials respond to virtual reality in the 19 Crimes app.

The purpose of RQ.1 was to describe Millennials' response to virtual environments. Millennials' had a positive response when asked about the elements of their experience using the 19 Crimes version of the Living Labels app (see Table 10). Participants mostly agreed that the virtual reality app was easy to use ($M = 4.75$, $SD = 0.50$) and they found the virtual reality experience exciting ($M = 4.69$, $SD = 0.69$).

Table 10.

Millennials' Response to the Virtual Reality App

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
I believe my interaction with the virtual reality app felt natural	4.06	1.07	1	5
While I was using the virtual reality app, I was aware of events occurring in the real world around me	4.00	1.18	1	5
The virtual reality app experience seemed realistic	4.28	0.91	1	5
I felt involved in the virtual reality experience	4.37	0.86	1	5
I found the virtual reality app easy to use	4.75	0.50	3	5
I found the virtual reality experience exciting	4.69	0.69	2	5

Note. 1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree.

RO1.2: Describe Millennials' intent to purchase 19 Crimes wine after using the Living Labels app.

Participants' intent to purchase 19 Crimes wine after using the Living Labels app was positive (see Table 11). Participants indicated they would purchase the product because of the virtual reality element ($M = 4.31$, $SD = 1.10$) and they are considering purchasing the product because of their experience ($M = 4.31$, $SD = 1.10$). Overall,

participants agreed that they would purchase 19 Crimes after using the Living Labels app ($GM = 4.32$, $SD = 1.01$).

Table 11.

Millennials' Response to the 19 Crimes App – Intent to Purchase

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
I would purchase this product because of the virtual reality element	4.31	1.10	1	5
I am considering purchasing this product because of my experience today	4.32	1.09	1	5
Grand Mean	4.32	1.01	1	5

Note. 1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree.

RO1.3: Describe Millennials' intent to recommend 19 Crimes wine after using the Living Labels app.

The participants reported they would both recommend this app to others ($M = 4.69$, $SD = 0.71$) and download the app to show other people the virtual reality experience ($M = 4.66$, $SD = 0.06$), shown in Table 12. Overall, participants agreed that they would recommend the app to others ($GM = 4.68$, $SD = 0.61$).

Table 12.

Millennials' Response to the 19 Crimes App – Intent to Recommend

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
I would recommend this virtual reality app to others	4.69	0.71	1	5
I would download this app to show others the virtual experience	4.66	0.06	1	5
Grand Mean	4.68	0.61	1	5

Note. 1 = Strongly disagree, 2 = Somewhat disagree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree.

RQ.2: What are Millennials' perceptions of and responses to the physical environment?

RO2.1: Describe how Millennials perceive the selected wine labels by classification (traditional and non-traditional)

The purpose of RQ.2 was to describe Millennials' perceptions and responses to the physical environment (wine label). Participants were shown six wine labels, in a randomized order, ranging from very traditional to very nontraditional. They were asked their perception of the labels name, logo, label color, image or picture, and layout.

After viewing the Dreaming Tree label (see Table 13), participants indicated the name the most attractive element ($M = 4.00$, $SD = 0.82$), followed by the layout ($M = 3.96$, $SD = 0.87$). In contrast, participants indicated the label color the least attractive ($M = 3.78$, $SD = 1.04$). Overall, participants found the dreaming tree wine label neutral in regards to the level of attractiveness ($GM = 3.91$, $SD = 0.73$).

Table 13.

Summary of Millennials' Perceptions of the Dreaming Tree Label

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	4.00	0.82	2	5
Logo	3.85	0.91	1	5
Label color	3.78	1.04	1	5
Image or picture	3.88	1.00	1	5
Layout	3.96	0.87	1	5
Grand Mean	3.91	0.73	2	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study.

After viewing the Dreaming Tree wine label (see Table 14), more than half of the participants reported a perceived price of \$10.00 - \$14.99 for the bottle of wine ($f = 36$,

52.9%). Following, 22.1% of participants reported a perceived price of \$15.00 - \$19.99 for the bottle of wine ($f = 15$). There were not any participants that believed the Dreaming Tree wine cost less than \$5.00. The actual price of the Dreaming Tree wine is \$11.34.

Table 14.

Summary of Millennials' Price Perceptions of the Dreaming Tree Label

Price	f	%
Less than \$5.00	0	0.0
\$5.00 - \$9.99	12	17.6
\$10.00 - \$14.99	36	52.9
\$15.00 - \$19.99	15	22.1
\$20.00 or more	5	7.4

Note. 1 = Less than \$5.00, 2 = \$5.00 –\$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

After viewing the 19 Crimes label (see Table 15), participants indicated the name was the most attractive element ($M=3.87$, $SD = 1.06$), followed by the logo ($M= 3.71$, $SD = 1.03$). In contrast, participants indicated the label color the least attractive ($M = 3.36$, $SD = 0.91$). Overall, participants found the 19 Crimes wine label neutral in regards to the level of attractiveness ($GM = 3.61$, $SD = 0.87$).

Table 15.

Summary of Millennials' Perceptions of the 19 Crimes Label

Element	M	SD	Min	Max
Name	3.87	1.06	1	5
Logo	3.71	1.03	1	5
Label color	3.36	0.91	1	5
Image or picture	3.47	1.13	1	5

Table 15. Continued.

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Layout	3.68	1.07	1	5
Grand Mean	3.61	0.87	1	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

After viewing the 19 Crimes wine label (see Table 16), 44.1% participants reported a perceived price of \$10.00 - \$14.99 for the bottle of wine ($f = 30$). Following, 26.5% of participants reported a perceived price of \$15.00 - \$19.99 for the bottle of wine ($f = 18$). There was one participant that believed the 19 Crimes wine cost less than \$5.00. The actual price of the 19 Crimes wine is \$10.92.

Table 16.

Summary of Millennials' Price Perceptions of the 19 Crimes Label

Price	<i>f</i>	%
Less than \$5.00	1	1.5
\$5.00 - \$9.99	13	19.1
\$10.00 - \$14.99	30	44.1
\$15.00 - \$19.99	18	26.5
\$20.00 or more	6	8.8

Note. 1 = Less than \$5.00, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

After viewing the Joel Gott label (see Table 17), participants indicated the layout the most attractive element ($M = 3.66$, $SD = 1.00$), followed by the logo ($M = 3.46$, $SD = 0.95$). In contrast, participants indicated the image or picture the least attractive ($M =$

3.03, $SD = 0.97$). Overall, participants found the Joel Gott wine label neutral in regards to the level of attractiveness ($GM = 3.38$, $SD = 0.85$).

Table 17.

Summary of Millennials' Perceptions of the Joel Gott Label

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.43	0.99	1	5
Logo	3.46	0.95	1	5
Label color	3.32	1.08	1	5
Image or picture	3.03	0.97	1	5
Layout	3.66	1.00	1	5
Grand mean	3.38	0.85	2	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

After viewing the Joel Gott wine label (see Table 18), 38.2% participants reported a perceived price of \$20.00 or more for the bottle of wine ($f = 26$). Following, 26.5% of participants reported a perceived price of \$15.00 - \$19.99 for the bottle of wine ($f = 18$). There was one participant that believed the Joel Gott wine cost less than \$5.00. The actual price of the Joel Gott wine is \$13.13.

Table 18.

Summary of Millennials' Price Perceptions of the Joel Gott Label

Price	<i>f</i>	%
Less than \$5.00	1	1.5
\$5.00 - \$9.99	9	13.2
\$10.00 - \$14.99	14	20.6
\$15.00 - \$19.99	18	26.5
\$20.00 or more	26	38.2

Note. 1 = Less than \$5.00, 2 = \$5.00 –\$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

After viewing the Alverdi label (see Table 19), participants indicated the name the most attractive element ($M = 3.04$, $SD = 1.19$), followed by the logo ($M = 3.00$, $SD = 1.31$). In contrast, participants indicated the image or picture the least attractive ($M = 2.46$, $SD = 1.07$). Overall, participants found the Alverdi wine label unattractive in regards to the level of attractiveness ($GM = 2.77$, $SD = 1.03$).

Table 19.

Summary of Millennials' Perceptions of the Alverdi Label

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.04	1.19	1	5
Logo	3.00	1.31	1	5
Label color	2.54	1.04	1	5
Image or picture	2.46	1.07	1	5
Layout	2.79	1.24	1	5
Grand Mean	2.77	1.03	1	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

After viewing the Alverdi wine label (see Table 20), 35.3% participants reported a perceived price of \$5.00 - \$9.00 for the bottle of wine ($f = 24$). Following, 26.5% of participants reported a perceived price of \$15.00 - \$19.99 for the bottle of wine ($f = 18$). There were six participants that believed the Alverdi wine cost less than \$5.00 (8.8%). The actual price of the Alverdi wine is \$10.16.

Table 20.

Summary of Millennials' Price Perceptions of the Alverdi Label

Price	<i>f</i>	%
Less than \$5.00	6	8.8
\$5.00 - \$9.99	24	35.3
\$10.00 - \$14.99	14	20.6
\$15.00 - \$19.99	18	26.5
\$20.00 or more	6	8.8

Note. 1 = Less than \$5.00, 2 = \$5.00 –\$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

After viewing the Chloe label (see Table 21), participants indicated the logo the most attractive element ($M = 4.04$, $SD = 0.93$), followed by the layout ($M = 4.01$, $SD = 0.97$). In contrast, participants indicated the label color the least attractive ($M = 3.85$, $SD = 0.86$). Overall, participants found the Chloe wine label neutral in regards to level of attractiveness ($GM = 3.96$, $SD = 0.82$).

Table 21.

Summary of Millennials' Perceptions of the Chloe Label

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.99	0.92	1	5
Logo	4.04	0.93	2	5
Label color	3.85	0.86	2	5
Image or picture	3.91	0.95	1	5
Layout	4.01	0.97	1	5
Grand Mean	3.96	0.82	2	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

After viewing the Chloe wine label (see Table 22), 35.3% participants reported a perceived price of \$15.00 - \$19.99 for the bottle of wine ($f = 24$). Following, 26.5% of participants reported a perceived price of \$20.00 or more for the bottle of wine ($f = 18$). There were two participants that believed the Chloe wine cost less than \$5.00 (2.9%). The actual price of the Chloe wine is \$13.34.

Table 22.

Summary of Millennials' Price Perceptions of the Chloe Label

Price	f	%
Less than \$5.00	2	2.9
\$5.00 - \$9.99	8	11.8
\$10.00 - \$14.99	16	23.5
\$15.00 - \$19.99	24	35.3
\$20.00 or more	18	26.5

Note. 1 = Less than \$5.00, 2 = \$5.00 –\$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

After viewing the Freakshow label (see Table 23), participants indicated the logo ($M = 3.57$, $SD = 1.34$) and the label color ($M = 3.57$, $SD = 1.35$) the most attractive elements. In contrast, participants indicated the layout the least attractive ($M = 3.30$, $SD = 1.44$). Overall, participants found the Freakshow wine label neutral in regards to the level of attractiveness ($GM = 3.49$, $SD = 1.25$).

Table 23.

Summary of Millennials' Perceptions of the Freakshow Label

Element	M	SD	Min	Max
Name	3.54	1.35	1	5

Table 23. Continued.

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Logo	3.57	1.34	1	5
Label color	3.57	1.35	1	5
Image or picture	3.44	1.47	1	5
Layout	3.30	1.44	1	5
Grand Mean	3.49	1.25	1	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

After viewing the Freakshow wine label (see Table 24), 42.6% participants reported a perceived price of \$10.00 - \$14.99 for the bottle of wine ($f = 29$). Following, 22.1% of participants reported a perceived price of \$5.00 - \$9.99 for the bottle of wine ($f = 15$). There were four participants that believed the Freakshow wine cost less than \$5.00 (5.9%). The actual price of the Freakshow wine is \$13.34.

Table 24.

Summary of Millennials' Price Perceptions of the Freakshow Label

Price	<i>f</i>	%
Less than \$5.00	4	5.9
\$5.00 - \$9.99	15	22.1
\$10.00 - \$14.99	29	42.6
\$15.00 - \$19.99	13	19.1
\$20.00 or more	7	10.3

Note. 1 = Less than \$5.00, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

RO2.1 also describes what characteristics of wine labels are most desirable to Millennials. These are further reported by traditional labels, non-traditional labels, and summary of Millennials' perception of all six wine labels.

When evaluating the traditional wine labels (Joel Gott, Dreaming Tree, and Chloe), Millennials found the layout the most attractive element on the wine label ($M = 3.88$, $SD = 0.64$), followed by the name ($M = 3.80$, $SD = 0.60$) and the logo ($M = 3.80$, $SD = 0.60$). The least attractive label element was the image or picture ($M = 3.61$, $SD = 0.60$) as shown in Table 25.

Table 25.

Summary of Millennials' Perceptions of Traditional Labels

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.80	0.60	2	5
Logo	3.80	0.60	2	5
Label color	3.65	0.75	2	5
Image or picture	3.61	0.60	2	5
Layout	3.88	0.64	2	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

When evaluating the non-traditional wine labels (Alverdi, 19 Crimes, and Freakshow), Millennials found the name ($M = 3.49$, $SD = 0.70$) and logo ($M = 3.49$, $SD = 0.70$) the most attractive elements on the wine label, followed by the layout ($M = 3.26$,

$SD = 0.76$), as shown in Table 26. The least attractive label elements were label color ($M = 3.16$, $SD = 0.64$) and the image or picture ($M = 3.16$, $SD = 0.64$).

Table 26.

Summary of Millennials' Perceptions of Non-Traditional Labels

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.49	0.70	2	5
Logo	3.49	0.70	2	5
Label color	3.16	0.64	1	5
Image or picture	3.16	0.64	1	5
Layout	3.26	0.76	1	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

When evaluating all six labels as a whole (see Table 27). Millennials perceived the label's name as the most attractive element ($M = 3.64$, $SD = 0.48$), followed by the logo ($M = 3.61$, $SD = 0.48$) and label color ($M = 3.61$, $SD = 0.48$). The element found the least attractive was the image or picture ($M = 3.36$, $SD = 0.47$).

Table 27.

Summary of Millennials' Perceptions of Selected Labels

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.64	0.48	3	5
Logo	3.61	0.48	3	5
Label color	3.61	0.48	3	5
Image or picture	3.36	0.47	3	5
Layout	3.57	0.43	3	5

Note. Wine label elements are listed in the same order they were presented to subjects in the study. 1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive.

RO2.2: Compare traditional and non-traditional labels

I analyzed the data using IBM® SPSS® Statistics (version 25.0) and followed the multivariate analysis procedures noted by Tabachnick and Fidell (2013).

Multivariate analysis of variance (MANOVA) was used to compare the mean scores of dependent variables (grand means of label elements) across conditions (traditional and nontraditional labels) and test interactions among dependent variables, presented in Table 28.

Results of the MANOVA provided an indication of the effect of label classification (traditional vs. non-traditional) on subjects' perceived level of attractiveness was significant, $\Lambda = .746$; $F(4, 64) = 5.435$; $p = .001$; $1 - \beta = .966$, and a small effect size ($\eta_p^2 = .254$; Newton & Rudestam, 1999). MANOVA results for (grand means of label elements) exceeded the threshold for power of analysis ($\geq .80$). Therefore, significant results were not due to chance or error.

Subsequent univariate Analyses of Variance (ANOVAs) were carried out on each of the dependent variables (see Table 28). A Bonferroni correction was applied to each of the subsequent ANOVAs to protect against inflated Type I error (Field, 2009), which resulted in lowering the p -value to ≤ 0.01 .

Table 28.

Univariate ANOVAs as a follow up to significant MANOVA

Element	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>	ω^2	$1 - \beta$
Name							
Between	1	3.45	3.45	8.48	.005**	.112	.819
Error	67	27.27	0.41				

Table 28. Continued

Element	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>	ω^2	1 - β
Total	68	30.72					
Logo							
Between	1	3.45	3.45	8.48	.005**	.112	.819
Error	67	27.27	0.41				
Total	68	30.72					
Color							
Between	1	8.17	8.17	15.13	<.001**	.184	.970
Error	67	36.16	0.54				
Total	68	44.33					
Image							
Between	1	6.84	6.84	18.08	<.001**	.213	.987
Error	67	25.34	0.38				
Total	68	32.18					
Layout							
Between	1	13.17	13.17	20.75	<.001**	.236	.994
Error	67	42.54	0.63				
Total	68	56.24					

Note. ** Indicates significant results ($p \leq .01$).

Each of the perceived levels of attractiveness of label elements were significantly different between traditional and non-traditional labels. On average, participants perceived the name, logo, label color, image or picture, and layout of traditional labels to be more attractive.

RO2.3: Describe how Millennials perceive the influence of wine label elements

Millennials were asked the influence of wine label elements in their decision-making process when purchasing wine, as shown in Table 29. The most important elements were the type of wine ($M = 4.56$, $SD = 0.85$) and the description of taste ($M = 4.10$, $SD = 1.13$). In contrast, Millennials reported the vintage year ($M = 2.44$, $SD =$

1.22) and the country of origin ($M = 2.90$, $SD = 1.18$) as the least important elements of influence when making a decision to purchase a wine.

Table 29.

Influence of Label Elements in Millennials Decisions Making Process

Element	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Name	3.40	1.19	1	5
Logo	3.60	1.08	1	5
Label color	3.60	1.14	1	5
Image or picture	3.65	1.08	1	5
Layout and/or design	3.81	1.13	1	5
Vintage year	2.44	1.22	1	5
Country of origin	2.90	1.18	1	5
Type of wine	4.56	0.85	1	5
Description of taste	4.10	1.13	1	5

Note. Elements are listed in the same order they were presented to subjects in the study. 1 = Not important, 2 = Slightly important, 3 = Moderately important, 4 = Important, 5 = Very Important.

RO2.4: Describe Millennials' gaze behavior when viewing each wine label.

Participants were presented with six wine labels, with a view time of 10 seconds per label. Tobii Pro X2-60 was used to monitor the visual attention of each participant. Data were exported from Tobii Pro X2-60 into SPSS (version 25.0) and analyzed to identify the fixations in each AOI, the duration of each fixation in each AOI, and the order of fixation in each AOI.

Figures and heat maps are provided for each research objective. Heat maps are visualizations that reveal the focus of visual attention. The fixations are added together, and color values are added to the points (Tobi Pro Lab User Manual). The warmest

colors represent the highest value, and the colors gradually decrease as they move away from the fixation point.

The heat maps presented in RO2.4.1 were visual demonstrations for the points of fixation on each wine label, also known as the “count”. The heat maps presented in RO2.4.2 are visual demonstrations of the duration of fixations on each wine label, also known as the “absolute duration.” Absolute duration was used instead of relative duration because the images were shown for a fixed period of time.

RO2.4.1: Describe Millennials’ frequency of fixations, by AOI, for each wine label.

When reporting the frequency of fixations for each wine label, the unweighted and weighted percentages will be presented to show the importance of weighting.

When participants viewed the Dreaming Tree wine label (see Table 30, Figure 23), the image had the greatest number of fixations ($f = 11,192$, 38.4%). Following the image, the name had the second greatest number of fixations ($f = 5,193$, 17.8%). The element that was fixated on the least was the vintage year ($f = 1,132$, 3.9%).

After accounting for the differences in area among label elements (weighting) in the Dreaming Tree label, the image commanded the most fixations ($f = 7,334.12$, 75.7%). Following the image, the background commanded the second most fixations ($f = 1,911.63$, 19.7%). The subtitle commanded the least fixations ($f = 14.83$, 0.2%).

Table 30.

Average Frequency of Fixation of Label Elements – Dreaming Tree

Element	Raw		Weight	
	f_r	% _r	f_w	% _w
Name (total)	5,193	17.8	373.38	3.9
Primary Name	1,823	6.2	123.05	1.3
Subname	3,370	11.6	14.83	0.2
Type	2,109	7.2	22.36	0.2
Vintage Year	1,132	3.9	24.79	0.3
Image	11,192	38.4	7,334.12	75.7
Location	1,717	5.9	17.00	0.2
Background ^a	8,297	28.0	1,911.63	19.7
Total	29,640	100.0	9,683.27	100.0

Note. The total number of fixations for the Dreaming Tree wine label was 29,640. f_r = frequency of raw fixations; %_r = percent of raw fixations; f_w = frequency of weighted fixations; %_w = percent of weighted fixations; ^a = Background was not included as an AOI.

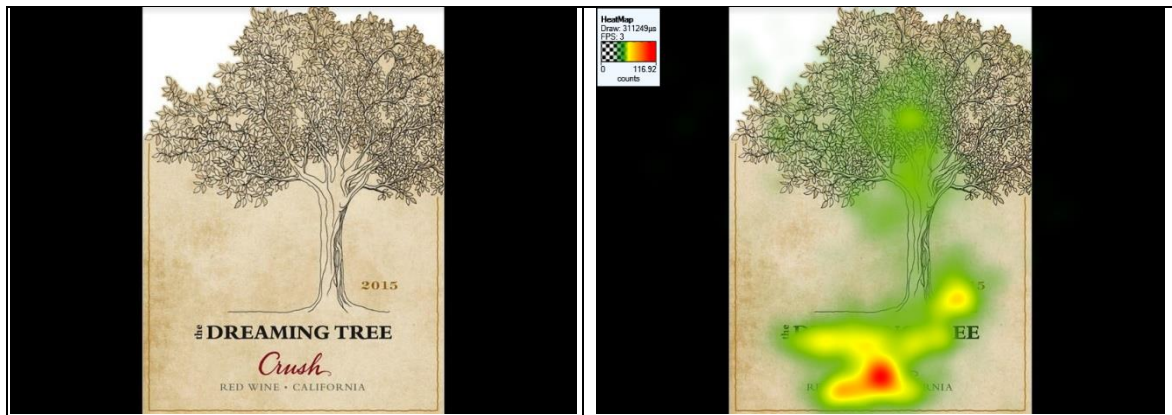


Figure 23. The unaltered Dreaming Tree label is presented alongside the label with the frequency fixation (count) heat map.

When participants viewed the 19 Crimes wine label, the image had the greatest number of fixations ($f = 9,123$, 29.8%). Following the image, the description 2 had the second greatest number of fixations ($f = 4,354$, 14.2%). Logo was the element with the

least number of fixations ($f = 152$, 0.5%). A visual representation is included in the heat map in Figure 24 and the results are displayed in Table 31.

After accounting for the differences in area among label elements (weighting) in the 19 Crimes label, the background commanded the most fixations ($f = 5,302.58$, 57%). Following the background, the image commanded the second most fixations ($f = 3,507.79$, 37.7%). The logo commanded the least fixations ($f = 2.71$, <0.01%).

Table 31.
Average Frequency of Fixation of Label Elements – 19 Crimes

Element	Raw		Weighted	
	f_r	% _r	f_w	% _w
Name	2,627	8.6	155.52	1.7
Logo	152	0.5	2.71	0.0
Type	1,771	5.8	41.97	0.5
Description (total)	4,538	14.8	283.17	3.0
Description 1	184	0.6	9.38	0.1
Description 2	4,354	14.2	49.64	0.5
Vintage Year	1,001	3.3	11.41	0.1
Image	9,123	29.8	3,507.79	37.7
Background ^a	12,024	33.6	5,302.58	57.0
Total	31,236	100.0	9,305.16	100.0

Note. The total number of fixations for the 19 Crimes wine label was 31,236. f_r = frequency of raw fixations; %_r = percent of raw fixations; f_w = frequency of weighted fixations; %_w = percent of weighted fixations; ^a = Background was not included as an AOI.

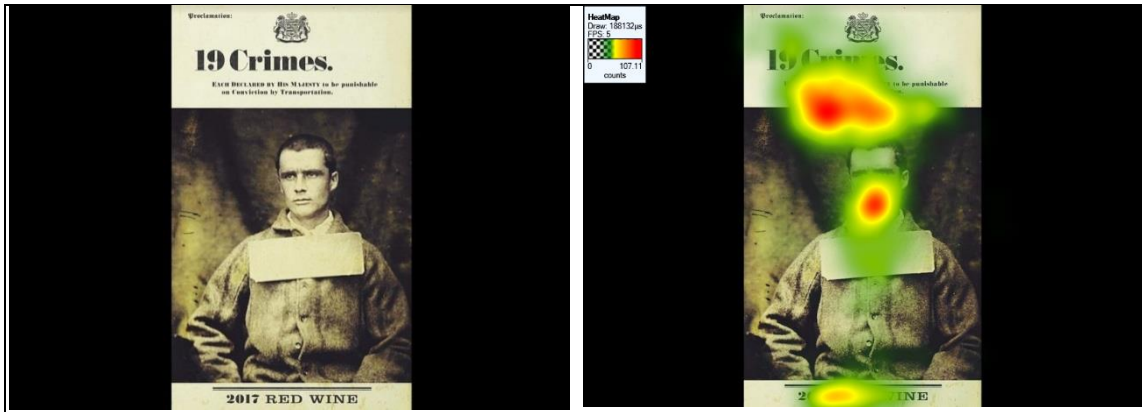


Figure 24. The unaltered 19 Crimes label is presented alongside the label with the frequency fixation (count) heat map.

When participants viewed the Joel Gott wine label, the description had the greatest number of fixations ($f = 7,732$, 26.5%). Following the description, the type had the second greatest number of fixations ($f = 5,148$, 17.6%). The element that was fixated on the least was the logo ($f = 532$, 1.8%). The results are displayed in Table 32 and a visual representation is included in the heat map in Figure .

After accounting for the differences in area among label elements (weighting) in the Joel Gott label, the background commanded the most fixations ($f = 2,818.06$, 43.5%). Following the background, the description commanded the second most fixations ($f = 2,048.98$, 31.6%). The logo commanded the least fixations ($f = 9.58$, 0.1%).

Table 32.

Average Frequency of Fixation of Label Elements – Joel Gott

Element	Raw		Weighted	
	f_r	% _r	f_w	% _w
Name (total)	5,669	19.4	457.63	7.1
Primary Name	3,661	12.5	92.57	1.4
Subname	2,008	6.9	138.55	2.1
Logo	532	1.8	9.58	0.1
Type	5,148	17.6	906.05	14.0
Description	7,732	26.5	2,048.98	31.6
Vintage Year	1,444	4.9	70.76	1.1
Location	2,218	7.6	168.57	2.6
Background ^a	9,058	0.3	2,818.06	43.5
Total	29,793	100.0	6,479.61	100.0

Note. The total number of fixations for the Joel Gott wine label was 29,793. f_r = frequency of raw fixations; %_r = percent of raw fixations; f_w = frequency of weighted fixations; %_w = percent of weighted fixations; ^a = Background was not included as an AOI.

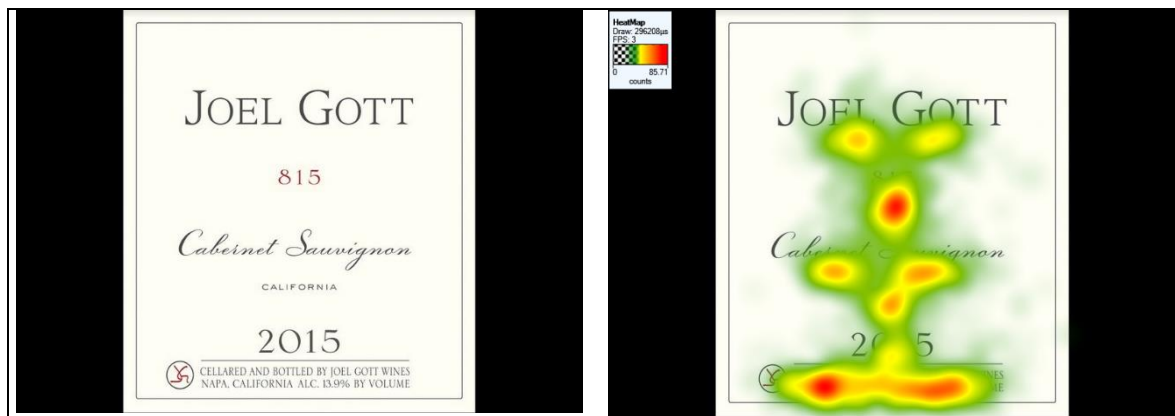


Figure 25. The unaltered Joel Gott label is presented alongside the label with the frequency fixation (count) heat map.

When participants viewed the Alverdi wine label, the location had the greatest number of fixations ($f = 6,586$, 21.7%). Following the location, the type had the second greatest number of fixations ($f = 6,144$, 20.3%). The element that was fixated on the

least was the name ($f = 3,778$, 12.5%). A visual representation is included in the heat map in Figure and the results are displayed in Table 33.

After accounting for the differences in area among label elements (weighting) the in Alverdi label, the background commanded the most fixations ($f = 1,600.72$, 43.9%). Following the background, the logo commanded the second most fixations ($f = 1,056.00$, 29%). The type commanded the least fixations ($f = 246.37$, 6.8%).

Table 33.
Average Frequency of Fixation of Label Elements – Alverdi

Element	Raw		Weighted	
	f_r	% _r	f_w	% _w
Name	3,778	12.5	446.18	12.2
Logo	4,685	15.5	1,056.00	29.0
Type	6,144	20.3	246.37	6.8
Location	6,586	21.7	298.35	8.2
Background ^a	9,664	0.3	1,600.72	43.9
Total	30,857	100.0	3,647.62	100.0

Note. The total number of fixations for the Alverdi wine label was 30,857. f_r = frequency of raw fixations; %_r = percent of raw fixations; f_w = frequency of weighted fixations; %_w = percent of weighted fixations ^a = Background was not included as an AOI.

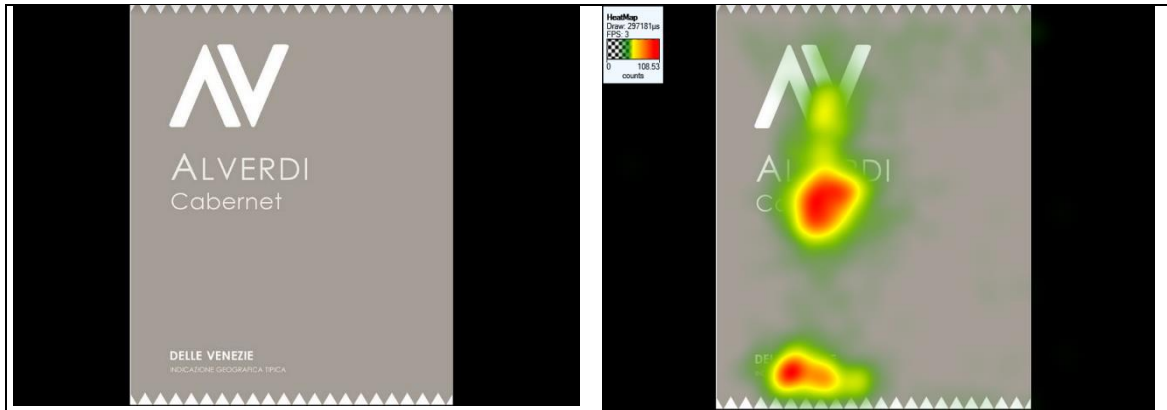


Figure 26. The unaltered Alverdi label is presented alongside the label with the frequency fixation (count) heat map.

When participants viewed the Chloe wine label, the location had the greatest number of fixations ($f = 6,689$, 22.7%). Following the location, the image had the second greatest number of fixations ($f = 6,448$, 21.9%). The element that was fixated on the least was the name ($f = 987$, 3.3%). A visual representation is included in the heat map in Figure and the results are displayed in Table 34.

After accounting for the differences in area among label elements (weighting) in the Chloe label, the background commanded the most fixations ($f = 1,219.18$, 46.6%). Following the background, the location commanded the second most fixations ($f = 612.04$, 23.4%). The vintage year commanded the least fixations ($f = 17.14$, 0.7%).

Table 34.
Average Frequency of Fixation of Label Elements – Chloe

Element	Raw		Weighted	
	f_r	% _r	f_w	% _w
Name	987	3.3	42.14	1.6

Table 34. Continued

Element	f_r	% _r	f_w	% _w
Type	4,852	16.4	133.43	5.1
Image	6,448	21.9	589.99	22.6
Vintage Year	1,714	5.8	17.14	0.7
Location	6,689	22.7	612.04	23.4
Background ^a	9,416	0.3	1,219.18	46.6
Total	30,106	100.0	2,613.93	100.0

Note. The total number of fixations for the Chloe wine label was 30106. f_r = frequency of raw fixations; %_r = percent of raw fixations; f_w = frequency of weighted fixations; %_w = percent of weighted fixations; ^a = Background was not included as an AOI.

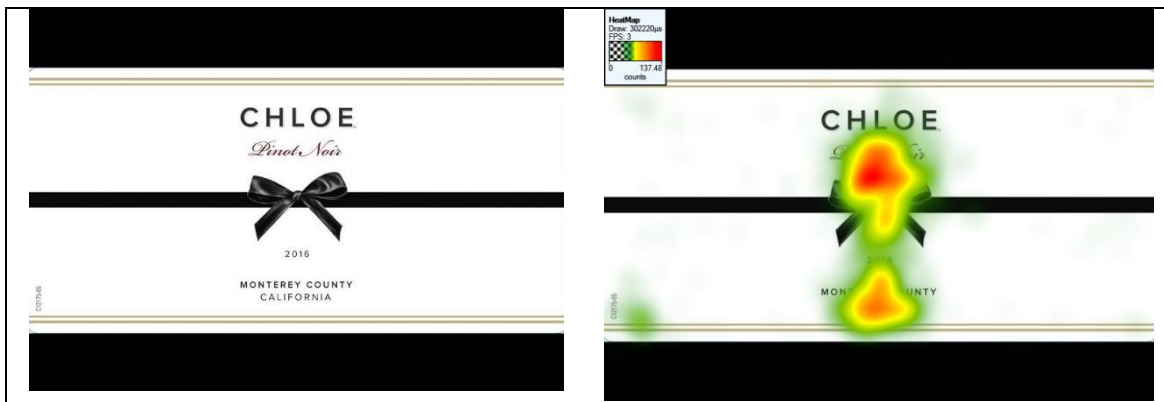


Figure 27. The unaltered Chloe label is presented alongside the label with the frequency fixation (count) heat map.

When participants viewed the Freakshow wine label, the image had the greatest number of fixations ($f = 7,595$, 26.2%). Following the image, the subimage 2 had the second greatest number of fixations ($f = 3,335$, 11.5%). The element that was fixated on the least was the vintage year ($f = 149$, 0.5%). A visual representation is included in the heat map in Figure and the results are displayed in Table 35.

After accounting for the differences in area among label elements (weighting) in the Freakshow label, the background commanded the most fixations ($f = 9,251.88$,

50%). Following the background, the image commanded the second most fixations ($f = 9,118.08$, 49.3%). The vintage year commanded the least fixations ($f = 0.34$, <0.00%).

Table 35.

Average Frequency of Fixation of Label Elements – Freakshow

Element	Raw		Weighted	
	f_r	% _r	f_w	% _w
Name	889	3.1	39.12	0.2
Type	1,404	4.8	23.45	0.1
Description	2,643	9.1	57.09	0.3
Vintage Year	149	0.5	0.34	0.0
Image	13,658	47.1	9,118.08	49.3
Primary Image	7,595	26.2	1,133.17	6.1
Subimage 1	2,728	9.4	694.55	3.8
Subimage 2	3,335	11.5	879.77	4.8
Location	1,159	4.0	9.39	0.1
Winery	786	2.7	4.42	0.0
Background ^a	8,896	0.3	9,251.88	50.0
Total	29,587	100.0	18,494.37	100.0

Note. The total number of fixations for the Freakshow wine label was 29587. f_r = frequency of raw fixations; %_r = percent of raw fixations; f_w = frequency of weighted fixations; %_w = percent of weighted fixations; ^a = Background was not included as an AOI.



Figure 28. The unaltered Freakshow label is presented alongside the label with the frequency fixation (count) heat map.

To provide a comparative perspective and summary of the heat maps, all label heat maps were included in Figure . Heat maps were grouped by traditional and non-traditional labels.

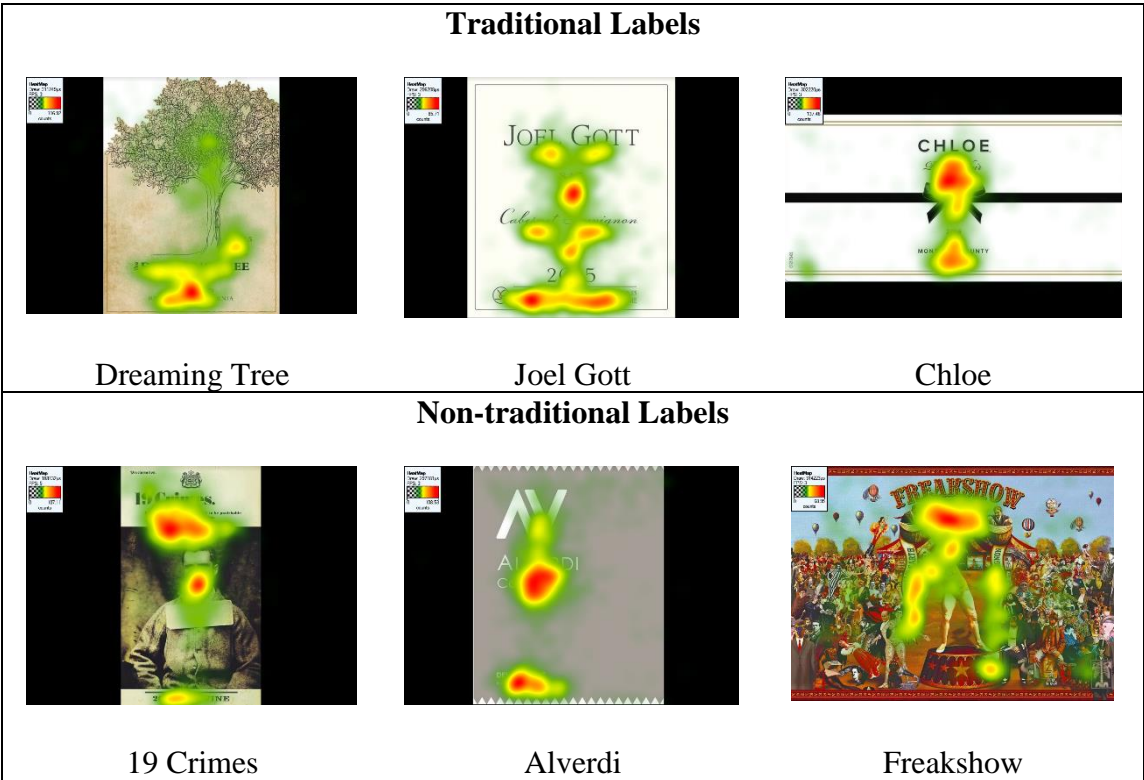


Figure 29. The traditional and non-traditional wine labels are presented separately, providing a visual demonstration of the frequency fixation (count) heat maps.

RO2.4.2: Describe Millennials’ duration of fixations, by AOI, for each wine label.

When participants viewed the Dreaming Tree wine label, the image was the element with the greatest average fixation duration ($M = 249.60, SD = 179.58$). Following the image, the location was the element with the second greatest average fixation duration ($M = 242.95, SD = 153.61$). The element with the least average fixation

duration was the name ($M = 208.82$, $SD = 109.70$). The results are displayed in Table 36 and a visual representation of absolute fixation duration is included in the heat map in Figure 25.

Table 36.
Average Fixation Duration of Label Elements in Milliseconds – Dreaming Tree

Element	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	1,823	67	933	208.82	109.70
Subname	3,370	67	1,454	230.34	167.71
Type	2,109	67	750	233.56	119.68
Vintage Year	1,132	67	900	240.66	170.48
Image	11,192	67	2,017	249.60	179.58
Location	1,717	67	1,150	242.95	153.61

Note. *n* = the total number of unique fixations that occurred in each AOI for the Dreaming Tree Label.

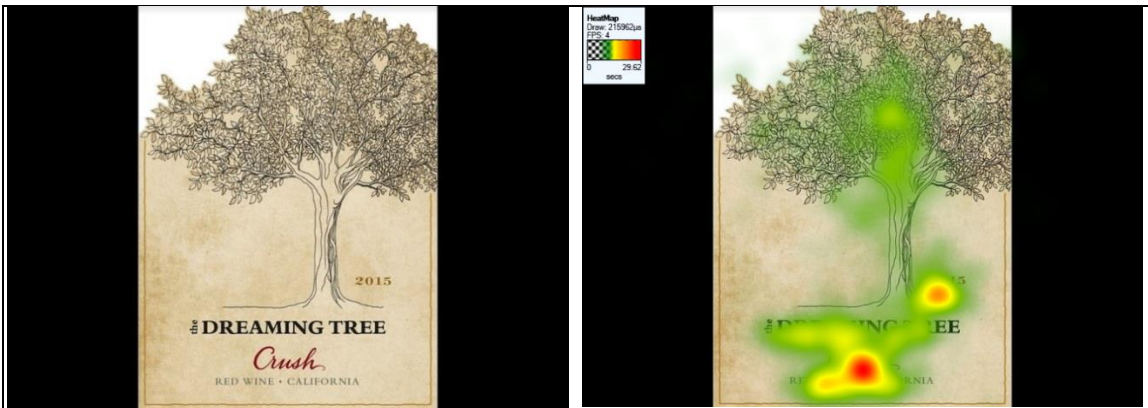


Figure 30. The unaltered Dreaming Tree label is presented alongside the label with the fixation duration heat map.

When participants viewed the 19 Crimes wine label, the image was the element with the greatest average fixation duration ($M = 262.93$, $SD = 226.17$). Following the

image, the name was the element with the second greatest average fixation duration ($M = 256.96$, $SD = 193.70$). The element with the least average fixation duration was description 1 ($M = 202.77$, $SD = 149.57$). The results are displayed in Table 37 and a visual representation of absolute fixation duration is included in the heat map in Figure 26.

Table 37.

Average Fixation Duration of Wine Label Elements in Milliseconds – 19 Crimes

Element	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	2,627	67	1,333	256.96	193.70
Logo	1,52	117	350	216.73	73.42
Type	1,771	67	1,616	233.35	189.55
Description 1	184	67	617	202.77	149.57
Description 2	4,354	67	883	230.32	130.82
Vintage Year	1,001	67	717	241.30	132.30
Image	9,123	67	1,917	262.93	226.17

Note. *n* = the total number of unique fixations that occurred in each AOI for the 19 Crimes Label.

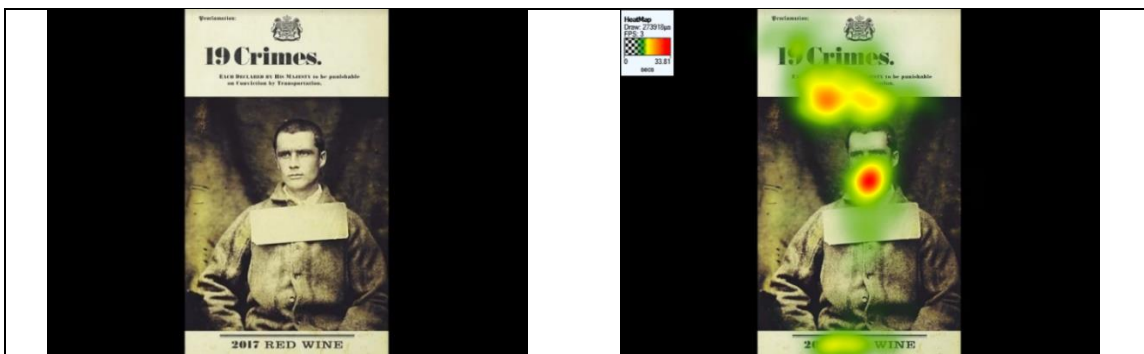


Figure 31. The unaltered 19 Crimes label is presented alongside the label with the fixation duration heat map.

When participants viewed the Joel Gott wine label, the logo was the element with the greatest average fixation duration ($M = 325.52$, $SD = 234.75$). Following the logo, the location was the element with the second greatest average fixation duration ($M = 252.65$, $SD = 210.71$). The element with the least average fixation duration was the name ($M = 202.34$, $SD = 110.56$). The results are displayed in Table 38 and a visual representation of absolute fixation duration is included in the heat map in Figure 27.

Table 38.

Average Fixation Duration of Wine Label Elements in Milliseconds – Joel Gott

Element	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	3,661	67	767	202.34	110.56
Subname	2,008	67	850	233.17	149.66
Logo	532	67	1,033	325.52	234.75
Type	5,148	67	917	210.05	118.15
Description	7,732	67	967	215.47	118.39
Vintage Year	1,444	66	883	206.20	114.33
Location	2,218	67	1,817	252.65	210.71

Note. n = the total number of unique fixations that occurred in each AOI for the Joel Gott Label.

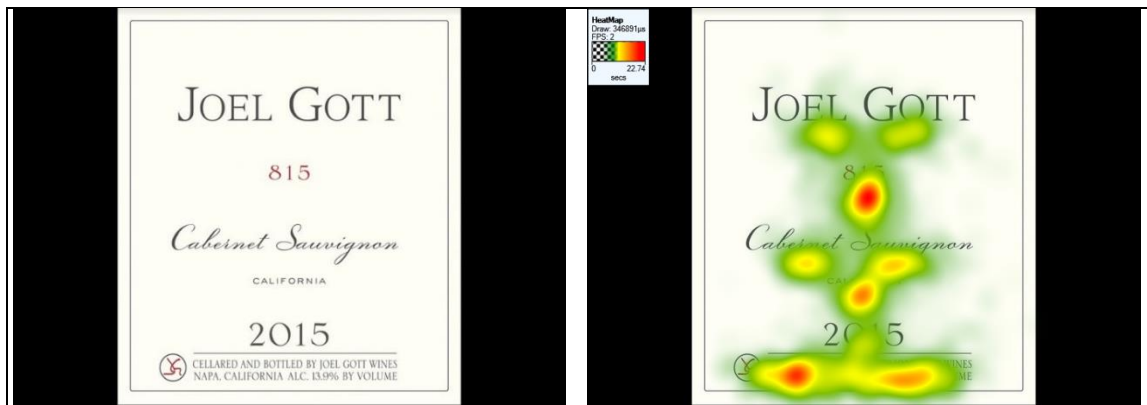


Figure 32. The unaltered Joel Gott label is presented alongside the label with the fixation duration heat map.

When participants viewed the Alverdi wine label, the location was the element with the greatest average fixation duration ($M = 271.83$, $SD = 177.47$). Following the location, the logo was the element with the second greatest average fixation duration ($M = 261.17$, $SD = 184.76$). The element with the least average fixation duration was the name ($M = 242.29$, $SD = 206.42$). The results are displayed in Table 39 and a visual representation of absolute fixation duration is included in the heat map in Figure 28.

Table 39.

Average Fixation Duration of Wine Label Elements in Milliseconds – Alverdi

Element	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	3,778	67	2,083	242.29	206.42
Logo	4,685	66	1,367	261.17	184.76
Type	6,144	67	1,550	257.91	191.48
Location	6,586	67	1,517	271.83	177.47

Note. *n* = the total number of unique fixations that occurred in each AOI for the Alverdi Label

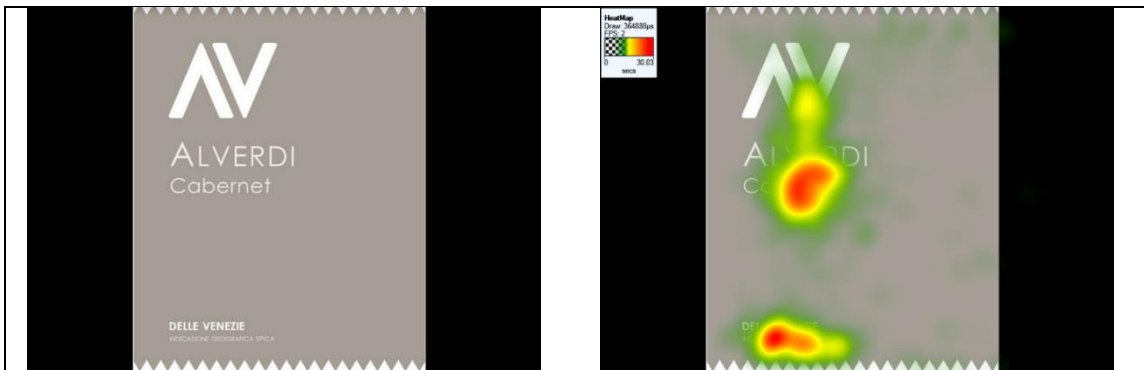


Figure 33. The unaltered Alverdi label is presented alongside the label with the fixation duration heat map.

When participants viewed the Chloe wine label, the location was the element with the greatest average fixation duration ($M = 264.61$, $SD = 173.60$). Following the location, the vintage year was the element with the second greatest average fixation duration ($M = 264.15$, $SD = 205.36$). The element with the least average fixation duration was the name ($M = 236.33$, $SD = 171.72$). The results are displayed in Table 40 and a visual representation of absolute fixation duration is included in the heat map in Figure .

Table 40.

Average Fixation Duration of Wine Label Elements in Milliseconds – Chloe

Element	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	987	67	1,116	236.33	171.72
Type	4,852	67	1,168	244.81	153.50
Vintage Year	1,714	67	1,033	264.15	205.36
Image	6,448	67	3,433	263.78	280.47
Location	6,689	67	1,100	264.61	173.60

Note. *n* = the total number of unique fixations that occurred in each AOI for the Chloe Label.

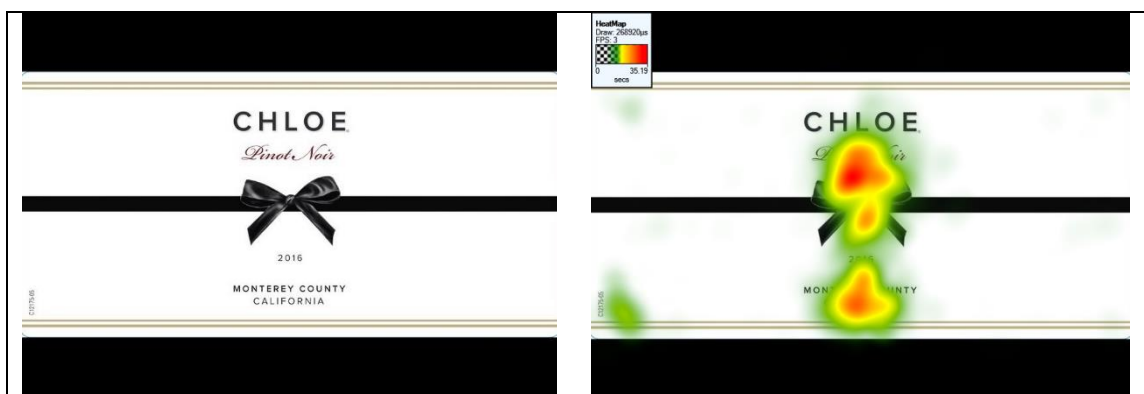


Figure 34. The unaltered Chloe label is presented alongside the label with the fixation duration heat map.

When participants viewed the Freakshow wine label, the vintage year was the element with the greatest average fixation duration ($M = 275.89$, $SD = 135.29$). Following the vintage year, the image was the element with the second greatest average fixation duration ($M = 240.87$, $SD = 191.19$). The element with the least average fixation duration was the name ($M = 188.32$, $SD = 96.44$). The results are displayed in Table 41 and a visual representation of absolute fixation duration is included in the heat map in Figure .

Table 41.

Average Fixation Duration of Wine Label Elements in Milliseconds – Freakshow

Element	<i>n</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	889	67	484	188.32	96.44
Type	1,404	67	550	203.58	95.39
Description	2,643	66	550	211.67	96.77
Vintage Year	149	150	517	275.89	135.29
Image	7,595	67	1,667	240.87	191.19
Subimage 1	2,728	67	917	222.47	120.60
Subimage 2	3,335	67	967	204.80	124.66
Location	1,159	67	484	193.95	88.80
Winery	786	67	583	204.70	97.04

Note. *n* = the total number of unique fixations that occurred in each AOI for the Freakshow Label.



Figure 35. The unaltered Freakshow label is presented alongside the label with the fixation duration heat map.

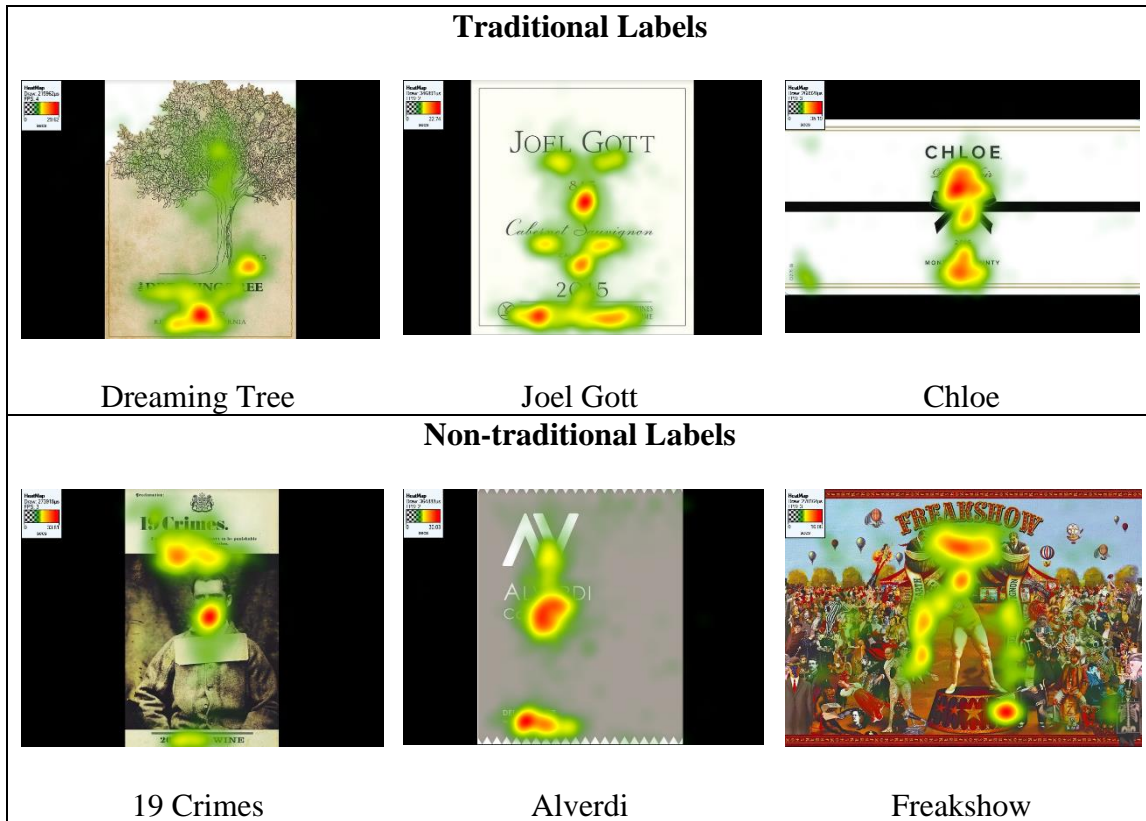


Figure 36. The traditional and non-traditional wine labels are presented separately, providing a visual demonstration of the fixation duration heat maps.

RO2.4.3: Describe Millennials' order of fixations, by AOI, for each wine label.

On average, the name was the AOI participants fixated on first ($M = 15.18$, $SD = 10.67$), followed by the subname ($M = 16.77$, $SD = 10.48$) and image ($M = 17.86$, $SD = 9.28$) when viewing the Dreaming Tree label (see Table 42). On average, the type ($M = 19.46$, $SD = 9.02$) was the last AOI that participants fixated on. The range of rankings was large among the AOI ($Min = 1$, $Max = 43$). The type ($Min = 2$), location ($Min = 2$) and vintage year ($Min = 3$) were never the AOI fixated on first when viewing the label.

Table 42.

Average Order of Fixations of Wine Label Elements – Dreaming Tree

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	1.00	43.00	15.18	10.67
Subname	1.00	40.00	16.77	10.48
Image	1.00	42.00	17.86	9.28
Vintage Year	3.00	34.00	18.82	8.58
Location	2.00	44.00	19.26	9.20
Type	2.00	43.00	19.46	9.02

On average, the description 2 was the AOI participants fixated on first ($M = 14.59$, $SD = 9.65$), followed by the name ($M = 16.79$, $SD = 10.84$) and description 1 ($M = 17.92$, $SD = 11.02$) when viewing the 19 Crimes label (see Table 43). On average, the vintage year ($M = 21.44$, $SD = 7.10$) was the last AOI that participants fixated on. The range of rankings was large among the AOI ($Min = 1$, $Max = 43$). Description 1 ($Min =$

2), logo ($Min = 2$), type ($Min = 3$), and vintage year ($Min = 5$) were never fixated on first when viewing the label.

Table 43.

Average Order of Fixations of Wine Label Elements – 19 Crimes

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Description 2	1.00	38.00	14.59	9.65
Name	1.00	43.00	16.79	10.84
Description 1	2.00	30.00	17.92	11.02
Image	1.00	43.00	18.08	10.15
Logo	2.00	29.00	19.90	9.26
Type	3.00	37.00	20.65	8.80
Vintage Year	5.00	36.00	21.44	7.10

On average, the name was the AOI participants fixated on first ($M = 14.07$, $SD = 13.28$), followed by the subname ($M = 15.59$, $SD = 11.52$) and location ($M = 16.84$, $SD = 8.57$) when viewing the Joel Gott label (see Table 44). On average, the logo ($M = 23.92$, $SD = 7.03$) was the last AOI that participants fixated on. The range of rankings was large among the AOI ($Min = 1$, $Max = 43$). The type ($Min = 2$), location ($Min = 3$), vintage year ($Min = 6$), and logo ($Min = 7$) were never fixated on first when viewing the label.

Table 44.

Average Order of Fixations of Wine Label Elements – Joel Gott

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	1.00	40.00	14.07	13.28
Subname	1.00	41.00	15.59	11.52
Location	3.00	41.00	16.84	8.57
Type	2.00	42.00	17.31	10.48

Table 44. Continued

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Vintage Year	6.00	43.00	17.96	7.18
Description	6.00	42.00	20.73	7.23
Logo	7.00	34.00	23.92	7.03

On average, the type was the AOI participants fixated on first ($M = 15.18$, $SD = 9.71$), followed by the name ($M = 15.32$, $SD = 10.32$) and location ($M = 16.45$, $SD = 6.88$) when viewing the Alverdi label (see Table 45). On average, the logo ($M = 17.08$, $SD = 10.68$) was the last AOI that participants fixated on. The range of rankings was large among the AOI ($Min = 1$, $Max = 40$). The location ($Min = 4$) was never fixated on first when viewing the label.

Table 45.

Average Order of Fixations of Wine Label Elements – Alverdi

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Type	1.00	36.00	15.18	9.71
Name	1.00	39.00	15.32	10.32
Location	4.00	37.00	16.45	6.88
Logo	1.00	40.00	17.08	10.68

On average, the type was the AOI participants fixated on first ($M = 14.22$, $SD = 10.10$), followed by the image ($M = 15.90$, $SD = 9.15$) and vintage year ($M = 15.93$, $SD = 8.56$) when viewing the Chloe label (see Table 46). On average, the location ($M = 16.20$, $SD = 7.10$) was the last AOI that participants fixated on. The range of rankings

was large among the AOI ($Min = 1$, $Max = 40$). The location ($Min = 2$) and vintage year ($Min = 3$) were never fixated on first when viewing the label.

Table 46.

Average Order of Fixations of Wine Label Elements – Chloe

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Type	1.00	40.00	14.22	10.10
Image	1.00	36.00	15.90	9.15
Vintage Year	3.00	37.00	15.93	8.56
Name	1.00	32.00	16.08	10.34
Location	2.00	37.00	16.20	7.10

On average, the name was the AOI participants fixated on first ($M = 10.62$, $SD = 9.36$), followed by the winery ($M = 10.96$, $SD = 10.34$) and location ($M = 13.46$, $SD = 10.23$) when viewing the Freakshow label (see Table 47). On average, the vintage year ($M = 25.22$, $SD = 8.02$) was the last AOI that participants fixated on. The range of rankings was large among the AOI ($Min = 1$, $Max = 47$). The name ($Min = 2$), winery ($Min = 2$), description ($Min = 2$), the subimage $Min = 2$), the type ($Min = 5$), and vintage year ($Min = 15$) were never fixated on first when viewing the label.

Table 47.

Average Order of Fixations of Wine Label Elements – Freakshow

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Name	2.00	37.00	10.62	9.36
Winery	2.00	40.00	10.96	10.34
Location	1.00	38.00	13.46	10.23

Table 47. Continued

Element	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Image	1.00	43.00	18.19	10.08
Description	2.00	37.00	18.96	7.46
Type	5.00	41.00	19.94	6.91
Subimage 1	1.00	46.00	24.14	9.27
Subimage 2	2.00	47.00	25.12	8.45
Vintage Year	15.00	39.00	25.22	8.02

RO2.4.4: Describe Millennials differences in gaze behavior by group order.

The participants were randomly assigned a group by order of observation. One-half of the participants experienced the 19 Crimes version of the virtual reality app before viewing the labels (Group 1), and the other half of the participants viewed the series of six labels first, then experienced the virtual reality experience (Group 2). The purpose of RO2.4.4 was to determine if Millennials observe the 19 Crimes wine label different, depending on the order of their virtual reality experience. A visual demonstration of the average frequency of fixation on AOI between the two groups is presented in Figure .

Frequency of fixations within AOIs were reported for each group in Table 48, by label element. Chi-square tests were used to test for significant associations between groups for each label element. Chi-square tests were adjusted for all pairwise comparisons using the Bonferroni correction. There were significant associations between the group (IV) and whether or not an AOI included unique fixations within the elements (DV) of description 1 ($\chi^2 = 30.25$, $df = 1$, $p \leq .001$), description 2 ($\chi^2 = 371.06$, $df = 1$, $p \leq .001$), and Image ($\chi^2 = 110.77$, $df = 1$, $p \leq .001$).

The element with the greatest number of fixations from participants in Group 1 was the image ($f = 5,097$, 24.9%), followed by description 2 ($f = 1,632$, 8.0%), and the name ($f = 1,393$, 6.8%). The element, on average, with the lowest number of fixations from participants in Group 1 was the logo ($f = 74$, 0.4%).

The element with the greatest number of fixations from participants in Group 2 was the image ($f = 3,943$, 20.5%), followed by description 2 ($f = 2,696$, 14%), and the name ($f = 1,213$, 6.3%). The element with the lowest number of fixations from participants in Group 2 was description 1 ($f = 52$, 0.3%).

Participants from Group 1, who experienced the virtual reality experience first, had a greater amount of fixations on the image ($f = 5,097$, 24.9%) than participants from Group 2 ($f = 3,943$, 20.5%).

Table 48.

Comparison of the Frequency of Fixation between the Groups

Element	Group 1		Group 2		χ^2	df	p^b
	f	% ^a	f	% ^a			
Name	1,393	6.8	1,213	6.3	4.17	1	.041
Logo	74	0.4	78	0.4	0.49	1	.483
Type	921	4.5	850	4.4	0.17	1	.677
Description 1	132	0.6	52	0.3	30.25	1	≤.001*
Description 2	1,632	8.0	2,696	14.0	371.06	1	≤.001*
Vintage Year	529	2.6	466	2.4	1.11	1	.293
Image	5,097	24.9	3,943	20.5	110.77	1	≤.001*

Note. ^a = percent reported were for respective group; i.e., percent of Group 1 fixations occurring within each element. ^b = Tests were adjusted for all pairwise comparisons using the Bonferroni correction

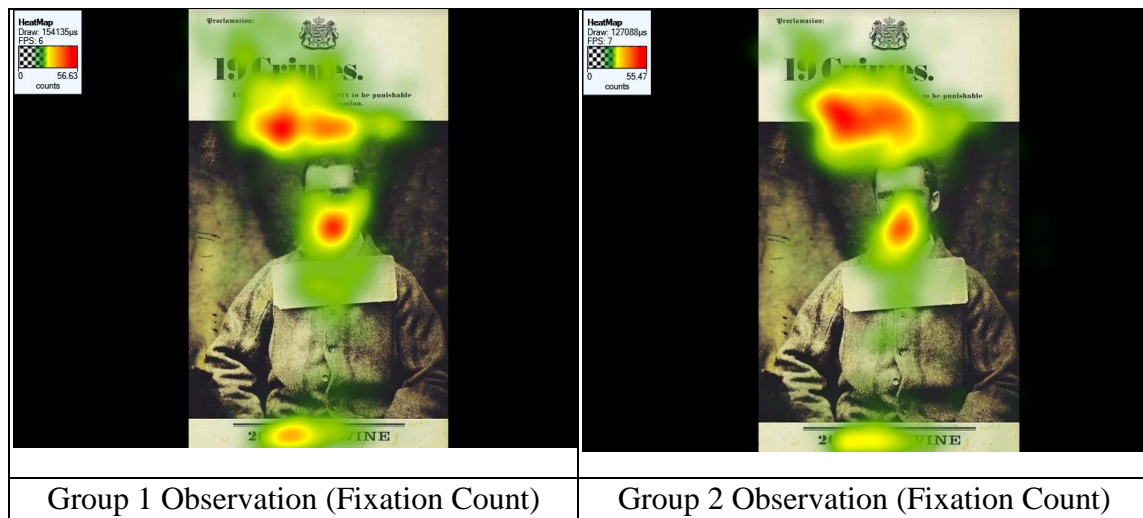


Figure 37. Differences in fixations in AOI between groups. Group 1 experienced the 19 Crimes virtual reality experience before viewing the labels, and Group 2 viewed the labels first, and then experienced the 19 Crimes virtual reality experience.

The average fixation duration for each AOI in the 19 Crimes wine label are reported by order of observation groups in Table 49. Group 1 experienced the 19 Crimes version of the virtual reality app first, and then viewed the series of wine labels, and Group 2 viewed the series of wine labels first, and then experienced the 19 Crimes version of the virtual reality app. There are notable differences between the average duration of fixation on AOI between the two groups.

Group 1, on average, fixated on the name ($GM_1 = 270.80$, $SD = 215.48$; $GM_2 = 242.17$, $SD = 170.61$), type ($GM_1 = 170.61$, $SD = 134.28$; $GM_2 = 225.69$, $SD = 237.12$) vintage year ($GM_1 = 255.44$, $SD = 121.73$; $GM_2 = 231.32$, $SD = 142.60$), and image ($GM_1 = 285.65$, $SD = 227.70$; $GM_2 = 244.78$, $SD = 225.18$) for a longer duration than Group 2.

Group 1 and Group 2 did not differ largely in the fixation duration on the logo ($GM_1 = 216.60$, $SD = 67.94$; $GM_2 = 216.83$, $SD = 84.19$) or the description 1 ($GM_1 = 203.50$, $SD = 170.55$; $GM_2 = 200.33$, $SD = 57.73$).

The only AOI that Group 2, on average, fixated on for a longer period of time was description 2 ($GM_1 = 223.39$, $SD = 134.04$; $GM_2 = 236.16$, $SD = 129.09$).

Table 49.
Average Fixation Duration Between Groups – 19 Crimes

Element	Group 1			Group 2		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Name	82	270.80	215.48	83	242.17	170.61
Logo	5	216.60	67.94	6	216.83	84.19
Type	64	240.30	134.28	58	225.69	237.12
Description 1	10	203.50	170.55	3	200.33	57.73
Description 2	118	223.39	134.04	184	236.16	129.09
Vintage Year	34	255.44	121.73	34	231.32	142.60
Image	288	285.65	227.70	253	244.78	225.18

I used an ANOVA to compare the mean scores of dependent variable (duration of fixation) across conditions (traditional vs. nontraditional labels) and test interactions among dependent variables, presented in *Table 50*. Results of the ANOVA provided an indication of the effect of the virtual reality experience (before vs. after) on the average duration of unique fixations in an AOI was significant ($p \leq .05$, $\omega^2 = .004$). Also, the ANOVA results exceeded the threshold for power of analysis ($\geq .80$). Therefore, significant results were not due to chance or error. A visual demonstration of the

differences in fixation duration between the two observation groups is presented in Figure .

Table 50.

Comparison of the Duration of Fixation between the Groups

Element	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>	ω^2	1 - β
Contrast	1	318,566.38	318,566.38	8.419	.004	.004	.826
Error	2038	77,117,338.08	37,839.71				
Total	164	77,435,904.46	356,406.09				

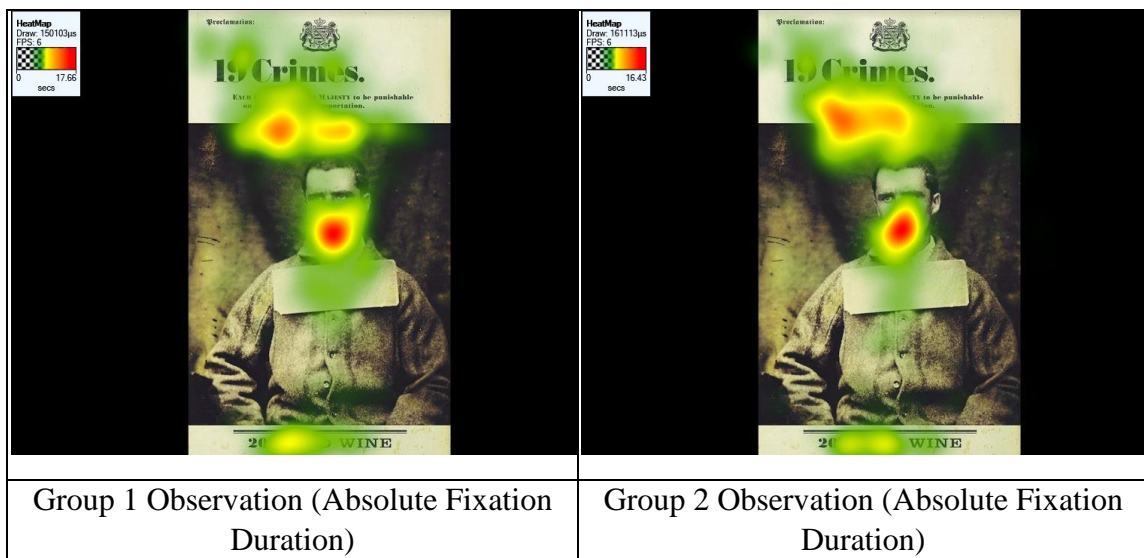


Figure 38. Differences in fixation duration in AOI between groups. Group 1 experienced the 19 Crimes virtual reality experience before viewing the labels, and Group 2 viewed the labels first, and then experienced the 19 Crimes virtual reality experience.

Aim 2: Describe Millennials' wine consumption habits

RQ.3: What are Millennials' wine consumption and purchasing habits?

RO3.1: Describe Millennials' wine consumption habits

The purpose of RQ.3 was to describe Millennials' wine consumption and purchasing habits (see Table 51). The majority of Millennials, 30.9%, indicated they drink wine multiple times per week, but not daily, followed by 25% consuming wine multiple times per month, but not weekly. In contrast, only 1.5% of the participants drink wine daily.

Table 51.
Frequency of Wine Consumption

	<i>f</i>	%
Daily	1	1.5
Multiple times per week, but not daily	21	30.9
Once per week	7	10.3
Multiple times per month, but not weekly	17	25.0
Once per month	7	10.3
Multiple times per year, but not monthly	10	14.7
Never	5	7.4

The majority of Millennials indicated that they drink Rosé ($f = 31$, 45.6%), and Champagne the most ($f = 31$, 45.6%), followed by Cabernet ($f=27$, 39.7%), Merlot ($f = 25$, 36.8%) and Pinot Noir ($f = 25$, 36.8%). The wine that is consumed the least is Malbec ($f = 8$, 11.8%), as presented in Table 52.

Table 52.

Types of Wine Consumed by Millennials

Type	No		Yes	
	<i>f</i>	%	<i>f</i>	%
Cabernet	41	60.3	27	39.7
Champagne and/or sparkling wine	37	54.4	31	45.6
Chardonnay	48	70.6	20	29.4
Malbec	60	88.2	8	11.8
Merlot	43	63.2	25	36.8
Pinot Noir	43	63.2	25	36.8
Rosé	37	54.4	31	45.6
Sauvignon Blanc	54	79.4	14	20.6
Zinfandel	52	76.5	16	23.5

RO3.2: Describe Millennials' wine spending habits.

Millennials most commonly purchase wine multiple times per month (see Table 53), but not weekly ($f = 25$, 39.7%). Two (3.2%) participants indicated that they purchase wine multiple times per week, but not daily. There were not any participants that reported purchasing wine daily.

Table 53.

Frequency of Wine Purchase

	<i>f</i>	%
Multiple times per week, but not daily	2	3.2
Once per week	9	14.3
Multiple times per month, but not weekly	25	39.7
Once per month	10	15.9
Multiple times per year, but not monthly	17	27.0

Note. 1 = Daily; 2 = Multiple times per week, but not daily; 3 = Once per week; 4 = Multiple times per month, but not weekly; 5 = Once per month; 6 = Multiple times per year, but not monthly.

Of the 68 participants (see Table 54), 57 reported purchasing wine at the grocery store (83.8%), followed by the liquor store ($f = 26$, 38.2%). Millennials reported purchasing wine from a gas station the least ($f = 4$, 5.9%).

Table 54.

Location of Wine Purchase

	<i>f</i>	%
Grocery store	57	83.8
Liquor store	26	38.2
Convenience store	7	10.3
Gas station	4	5.9
Wine store	6	8.0

Note. 1 = Grocery store, 2 = Liquor store, 3 = Convenience store, 4 = Gas station, 5 = Wine store.

When purchasing a bottle of wine (see Table 55), more than half of the participants reported spending between \$10.00 and \$14.99 ($f = 36$, 57.1%), followed by \$5.00 - \$9.99 ($f = 17$, 27%). Only one participant reported spending more than \$20.00 on a bottle of wine (1.6%).

Table 55.

Price per Bottle of Wine Spent

	<i>f</i>	%
\$5.00 - \$9.99	17	27.0
\$10.00 - \$14.99	36	57.1
\$15.00 - \$19.99	9	14.3
\$20.00 or more	1	1.6

Note. 1 = Less than \$5.00, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more.

Aim 3: Test the influence of the Living Labels app on Millennials perceptions of the price of wine

RQ.4: Did using the Living Labels app change Millennials perceptions of the price of wine

RO4.1: Did Millennials believe using the Living Labels app added value to 19 Crimes wine?

Participants were asked the perceived price of the 19 Crime wine twice, once after viewing the label in the eye tracking portion, and once after experiencing the virtual reality experience. The differences between the two group's price perceptions of the 19 Crimes wine is included in Table 56.

Group 1 experienced the virtual reality experience with the 19 Crimes bottle of wine and were asked their perceived price of the wine, with the majority indicating a perceived price of between \$10.00 - \$14.99 ($f = 15$, 42.9%) and \$15.00 - \$19.00 ($f = 16$, 45.7%) with a mean rank of 3.60 (\$10.00 - \$14.99). After Group 1 experienced the virtual reality app, they viewed the series of labels, including the 19 Crimes bottle of wine, and were asked the perceived price of the wine again. The mean rank was 3.46 (\$10.00 - \$14.99) and the price perception declined from 45.7% ($f = 16$) believing the wine cost \$15.00 - \$19.99, to 31.4%, ($f = 11$) indicating a perceived price of \$10.00 - \$14.99.

Group 2 experienced the series of wine labels presented in the eye tracking portion of the study first. They viewed the 19 Crimes wine with the other five labels, unaware of the virtual reality experience the wine label contained. They were asked their perceived price of the bottle of wine, and the average response was \$5.00 – \$9.99 ($MR =$

2.97). After experiencing the virtual reality experience with the 19 Crimes version of the Living Label app, participants mean rank increased to 3.73, a perceived price of \$10.00 - \$14.99. Of the participants in Group 2, 39.4% indicated a perceived price of \$10.00 - \$14.99 ($f = 13$), and on their second encounter with the wine label (after VR), 36.4% of participants indicated a perceived price of \$15.00 - \$19.99.

Table 56.
Differences in Perceived Price for 19 Crimes Between Groups

Table 1. Comparison of the observed and expected frequencies between groups												
	MR	1		2		3			4		5	
		f	%	f	%	f	%	f	%	f	%	
Group 1												
PM1	3.60	0	0.0	1	2.9	15	42.9	16	45.7	3	8.6	
PM2	3.46	0	0.0	3	8.6	17	48.6	11	31.4	4	11.4	
Group 2												
PM1	2.97	1	3.0	10	30.3	13	39.4	7	21.2	2	6.1	
PM2	3.73	0	0.0	2	6.1	12	36.4	12	36.4	7	21.2	

Note. 1 = Less than \$5.00, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more; *MR* = Mean Rank; PM1 = Price Measure 1; PM2 = Price Measure 2.

RO4.2: Did using the Living Labels app change Millennials' perception of the cost of the 19 Crimes wine?

HO: The order of use of AR (before or after seeing a wine label) does not affect subjects' perceptions of the price of wines

HA: The order of use of AR (before or after seeing a wine label) affected subjects' perceptions of the price of wines

The order of use of AR (before or after seeing a wine label) had a significant effect on the participants' perception of price, as presented in Table 57.

Table 57.

Comparison of the Effect of Virtual Reality Experience on the Perception of Price

Comparison	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>	ω^2
Measure 1						
Between Groups	1	6.74	6.74	9.816	.003	.129
Within Groups	66	45.37	0.68			
Total	67	52.11				
Measure 2						
Between Groups	1	1.23	1.23	1.73	.193	.025
Within Groups	66	47.23	0.71			
Total	67	48.47				

CHAPTER VI

CONCLUSIONS

This study contributes to the knowledge base of Millennials as wine consumers and offers insight to what label elements positively influence purchasing decisions. The youngest of Millennials are legally of age to consume alcohol, and a rise in Millennial wine consumption has occurred in recent years (Thompson & Barrett, 2016). The present study is intended to provide information regarding Millennials' consumer behavior, and help wine marketers create products that are aesthetically pleasing and engaging for Millennials, therefore promoting purchasing behaviors. The study also examines the effects of virtual reality with wine labels in relation to Millennials intent to purchase a wine, recommend it to others, and the perceived value of the wine, which is addressed later in the chapter. Before addressing conclusions related to RO.1-4, an overview of Millennials is provided.

Understanding Millennials and how they receive information and news is essential to marketer's success in captivating their attention and promoting a product to them. Direct mail has been used as a marketing tactic for over one hundred years (O'Guinn, 2008). This study shows that the majority of Millennials are checking their mail weekly, and some are checking it daily. If a marketer has information, coupons, etc. that are time sensitive, Millennials may not receive this promotional information as promptly as if they received the mail electronically. Marketers may benefit from knowing that Millennials are using their smartphones to check their email, and their messages should be compatible for these devices.

Millennials are known for being the “tech savvy” generation, and their media usage and frequency is a direct reflection of this (Lategan & Pentz, 2017). Millennials are using Facebook, Snapchat, and Instagram on a daily basis. Promoting a product on these platforms could make the product highly visible and memorable. Marketers should not use Twitter to promote a message, because the majority of Millennials are not using this platform, and those that do are not using Twitter very frequently. When consumers are satisfied with a product or brand, they often turn to social media to express their feelings and provide a review to their peers (Sashi, 2012 & Smith, 2010). Online reviews or posts to these platforms are free of cost for the organization and can be monitored by marketers to receive feedback about their products.

As media consumers, Millennials enjoy listening to music, mostly on AM or FM radio and the Spotify app at least one time per day. Millennials are also watching Netflix and TV once per day. Traditional methods of promotion like TV commercials could reach Millennials on these mediums. Additionally, Millennials do use YouTube, as often as one or more times a day. In contrast, Marketers should not try to promote their product or brand to Millennials through magazines. The majority of Millennials are not reading them, and those that do, only read magazines a couple of times a month.

Research Question One

To address RQ.1 and describe how Millennials respond to virtual environments, participants experienced virtual reality with the 19 Crimes wine, using the Living Labels app. There is no previous research related to VR and wine labels, therefore this study

will be a contribution to literature, explaining Millennials' responses and perceptions of VR with wine labels.

Their responses to the virtual experience and environment were recorded and overall their experience was very positive. Millennials found the virtual reality app easy to use and exciting. They agreed that their experience felt natural and realistic, to the extent that they felt involved in the experience. This sense of immersion was not overwhelming, as they were still aware of the events occurring around them. Millennials reacted positively to their experience and enjoyed using the Living Labels app. The majority of the participants had not previously used virtual reality with wine labels and enjoyed this new marketing tactic.

The introduction to virtual reality with the 19 Crimes wine label had a positive impact on Millennials intention to purchase the wine. The virtual reality element was captivating and Millennials will consider purchasing your product after engaging in the experience. Additionally, Millennials would download the app to show others, along with recommending the app and product to their friends. Lilley, an employee of 19 Crimes, expressed that the app has been downloaded over 1.2 million times, and this number has continued to rise (Szentpeteri, 2018). Word of mouth marketing is also important for products that do not differentiate substantially in packaging appearance, like wine. Adding virtual reality to the products label could promote WOM marketing.

As previously mentioned, Millennials are susceptible to traditional promotional and marketing methods that are available on TV, radio, social media, YouTube, etc., but they are also open to new tactics like virtual reality. Because virtual reality is a new

concept incorporated into wine labels design, marketers should take advantage of Millennials naiveté. Lilley said, “Today’s Millennials are digitally empowered, they think and communicate via images and videos...” and “We wanted to be able to speak their language and create a wine label unlike any other that not only allows our consumers to engage with 19 Crimes wines, but also explore some of the stories of Australia’s convict past” (Szentpeteri, 2018, p. 84).

When the study began, the virtual reality app, now called Living Labels, was originally called the 19 Crimes app. 19 Crimes was the first and only wine label to incorporate virtual reality into the label, and since then, five other wine labels have added VR. This new and exciting marketing tactic has had a fast rate of adoption and an increase in future use of VR with labels can be expected.

Research Question Two

To address RQ.2 and describe how Millennials respond to physical environments (wine labels), participants viewed six wine labels: three were traditional, and three non-traditional. Participants were asked to indicate the attractiveness of each AOI (name, logo, label color, image or picture, and the layout) for each label. Participants were also asked to indicate the level of influence each AOI had on their decision to purchase a bottle of wine.

Kelley and Hyde (2015) suggested further research was needed to understand specifically which label elements are influential in the decision-making process when consumers view and select wine in a retail environment. Understanding consumers’

preferences can help marketers and designers target specific audiences, and then design labels that are attractive and maximize the value of the product. Elliot and Barth (2012) reported that Millennials' prefer non-traditional wine label designs, which was investigated in this study.

In this study, I found that wine label elements influence Millennials' decision-making process, as presented in RO2.4. The element that participants found very important was the type of wine, followed by the description of taste. These findings do not support those of Elliot and Barth (2012) that reported the extrinsic factors (label color, name, logo, and picture) were the most influential elements in purchasing decisions. Instead, in the present study, layout and design, the image/picture of the label, the logo, label color, and name were moderately important, but not the most influential. The country of origin and the vintage year were the least influential elements of the wine label in Millennials decision making process, supporting Elliot and Barth (2012) findings. Findings from the current study suggest Millennials find the type of wine much more important and influential in choosing a bottle of wine, contradicting the findings of Elliot and Barth (2012), who suggested the name was the most influential element.

In addition to the influence of each label element, participants were asked to respond to six particular wine labels and rate the level of attractiveness for each element. Three of the labels were traditional (Dreaming Tree, Joel Gott, and Chloe) and three were non-traditional (19 Crimes, Alverdi, and Freakshow). Participants were shown labels in a random order and they were not aware of the classifications (i.e., traditional vs. non-traditional). Contrary to the results reported by Elliot and Barth (2012),

Millennial consumers who participated in this study preferred the traditional labels to the non-traditional labels

Millennial consumers also indicated layouts were the most attractive element of traditional labels. Layouts of traditional labels consisted of solid backgrounds with traditional colors and standard typefaces, as classified by Elliot and Barth (2012). Names and logos were the second most attractive elements of traditional labels. The names associated with wineries, vineyards, and family names (traditional elements) were preferred to those of non-traditional labels. The least attractive element of traditional labels was the image or picture and the label color.

When evaluating non-traditional labels, Millennials found the name and the logo the most attractive elements of the label. The names were non-winery related (Freakshow and 19 Crimes) portraying more of a story-like feel. The logos were also preferred. Alverdi had a simple logo that contained two letters from the name of the wine (AV). The 19 Crimes logo contained dragon-like creatures, a crown, and a badge. Freakshow did not have a logo, and participants thought the circus performer was the logo.

The least preferred elements of the non-traditional labels were the label colors and images and pictures. The colors ranged from a simple gray and white label (Alverdi), a mixture of contrasting dark and warm tones (19 Crimes), to a vibrant and overwhelming mixture of colors (Freakshow). This finding is contradictory to Elliot and Barth (2013), who reported Millennials' "overwhelming preference" for images and colors of non-traditional labels (p.187).

Laeng et al. (2016) suggested surveys and questionnaires asking consumers about their preferences on packaging and purchase intent reflects conscious assessment, but it is not confirmed that this can be a prediction of actual purchases or future decisions. They recommend using eye tracking as an additional mean to understand what elements are fixated on the most (frequency), the longest (duration), and use the results in congruency with questionnaires. The current study resembles the design of Laeng et al. (2016) and eye tracking was used to understand Millennials' gaze behavior when viewing the selected wine labels.

After accounting for the size and area of each AOI, and generating weighted frequencies for the average occurrences, several generalizations can be made. The backgrounds of each wine label, after accounting for size, contained the greatest number of fixations for 5 of the 6 wine labels. When designing a wine label, marketers should be aware that consumers are fixating on the backgrounds of labels as much, and sometimes more than the other elements of the label. Reber et al. (1988) found that in relation to background colors and images, people like high contrast object more than low contrast objects, finding the image/stimuli more attractive. Reber et al. (1988) reported individuals perceived white backgrounds with high contrasting images "prettier" than low contrast images.

The label with the highest level of attractiveness was Chloe, which contained four different colors (gold, burgundy, black, and white). The black bow and type on the white background is considered high contrast. Alverdi was the label that participants

found the least attractive, this could also be related to the low contrast and variation in colors.

Laeng et al. (2016) reported a strong positive relationship between eye fixations and the degree to which a bottle of wine is preferred, suggesting that gaze alone can be a predictor for a margin of success in selection and preference of wine bottles. The results from the current study are not congruent with those of Laeng et al. (2016). However, the six wine labels differed in design remarkably between very traditional (Joel Gott) and very non-traditional (Freakshow), the total of fixations for each wine label did not vary greatly, yet the traditional wine labels were reported significantly more attractive by participants. Future research may shorten or extend the view time for each label and evaluate if this change in duration would affect the perceived level of attractiveness for each label. In addition, would extending the view time for each label change the weighted percent of the total duration for AOI?

There is a massive variability in fixation duration between label elements, as the shortest fixation duration was 66 milliseconds and the longest fixation duration was 3,433 milliseconds. When participants viewed the Joel Gott label, the average fixation duration for the logo was longer than other elements on the label, aside from location, but the logo also had the fewest number of fixations. When viewing a smaller element, participants took longer to process the information, due to gaining a deeper understanding of the element, also known as cognitive load (Poole & Ball, 2006). The logo is small in comparison to other elements on the wine label, attributing to a longer duration of fixation on the logo. The intertwined letters “J” and “G” in the logo may

have been difficult to identify. A recommendation to marketers of wine label companies is to design a logo that is easy to depict, if other elements are more important for the consumer to focus attention on.

Also, on average, the name was reported the most attractive element of the wine labels, yet the name was fixated on for the shortest amount of time, coinciding with the findings of Laeng et al. (2016). The majority of the participants viewed the name as their first or second fixation, and then shifted their gaze to another element. For example, on average, the name was the first element fixated on in the Dreaming Tree wine label, but the average fixation duration was significantly lower compared to other AOI. This may be because the name was very clear and easy to read, also known as perceptual fluency (Laeng et al., 2016) or visual clarity (Reber et al. 1988). Future research may consider asking participants if they had previously seen/purchased the bottles of wine presented in the study and assess if participants vary in fixations or durations with wine labels they are familiar with or have not previously been exposed to.

As Sashi (2012) reported, satisfaction with a product can lead to retention. Group 1 experienced the VR app first, becoming acquainted with the wine label, before viewing it within the series of labels presented in the eye tracking portion. Being introduced to the app first resulted in significant differences in the way participants viewed the wine label. In comparison to Group 2, participants from Group 1 viewed the elements of the wine label, on average, for a longer duration.

The most noteworthy change in average fixation duration between the two groups was on the image. Participants might have been aware that other elements of the

wine label did not contain VR, and were stagnant, therefore, their focus was primarily on the image. The name was also fixated on for a longer duration with Group 1 than Group 2. Participants may have fixated on the name, on average, for a longer period of time, as a means of retention. Over half of the weighted fixations on the 19 Crimes wine label occurred in the background, followed by the image. Participants were visually engaged with the areas of the wine label that contained the VR. Future research may consider briefly interviewing participants after the VR experience to gain a better understanding of their thoughts and emotions related to experiencing VR with wine labels for the first time. Future research could also follow up with the participants to see if they purchased the wine after experiencing VR in the study.

This study provides marketers with information that could help tailor the design of their labels to be appealing to Millennials. When creating a label with Millennials as the target consumer, it is important to provide the type of wine and the description of taste on the label, these elements are the most influential in aiding purchasing decisions. Millennials find traditional labels more attractive when compared to non-traditional labels, favoring the layouts, names, and logos.

The greatest number of fixations occurs in the background of wine labels. Smaller elements on a wine label are viewed for longer durations, and elements that do not require deep cognitive processing, such as the name, are viewed for less time. Also, experiencing virtual reality changes the elements participants fixate on the most, and the duration of those fixations.

Research Question Three

The purpose of RQ.3 was to describe Millennials' wine consumption and purchasing habits. This is beneficial to marketers, targeting Millennials, in understanding and potentially predicting their behaviors. Also, previous research by Elliot and Barth (2012), Laeng et al. (2016), and Wolf and Thomas (2007) have addressed the need to further investigate Millennials consumption habits and preferences, as they may change throughout the years. The youngest of the Millennial generation are legally of age to consume alcohol, and previous research has not capture the generation as a whole. The purpose of the current study is to report Millennials wine purchasing and consumption behaviors and compares those to previous research's findings.

The results indicate that there is a variation in terms of wine consumption behavior in Millennials. Previous research suggested Millennials are a large demographic in the wine market, and this study's findings are congruent. More than one fourth of the participants indicated that they drink wine multiple times per week, but not daily. The next highest frequency of wine consumption reported was multiple times per month, but not weekly. Very few Millennials indicated never drinking wine. There are very few Millennials that consume wine daily. These findings support those of Elliot and Barth (2012). Although six years have passed between the previous study, and the current study, Millennials have remained consistent in their frequency of wine consumption. Because this study focuses on the Millennials that *do* consume wine, the remaining conclusions relate to those that indicated they drink wine.

When evaluating the frequency of wine purchase, the findings are adversely different than those regarding consumption. The majority of participants purchase their wine multiple times per month, but not weekly, followed by multiple times per year, but not monthly. Meaning, Millennials are not purchasing wine as often as they are consuming it.

Millennials are mostly purchasing wine at the grocery store, followed by the liquor store. More than half of the respondents spend between \$10.00 and \$14.99 on a bottle of wine, coinciding with Higgins and Wolf's (2016) claim that Millennials typically spend less than \$14.00 on a bottle of wine. This finding is different than Wolf and Thomas (2007), who reported Millennials prefer to spend between \$5.00 and \$9.00 on a bottle of wine. Very few Millennials will spend more than \$20.00 on a bottle of wine, reiterating that Millennials are very price sensitive.

Millennials' preferred types of wine are Rosé and Champagne, closely followed by Cabernet, Merlot, and Pinot Noir. Millennials are not affixed to one type of wine, and commonly enjoy multiple types.

The results of the study suggest that Millennials purchase and consume wine weekly or multiple times per month. Marketers that are targeting Millennials should focus on a price range of \$10.00 - \$14.99 to satisfy the majority of Millennials, and they should primarily sell their wine at grocery stores and liquor stores. There is not one type of wine that is dominating the Millennial generation. Millennials are open to change and enjoy multiple types of wine.

Research Question Four

The purpose of RQ.4 was to test the influence of the Living Labels app on Millennials perception of the price of wine. The participants were asked if they had any previous experience using virtual reality with wine labels. Participants were evenly divided into two groups.

Group one experienced the virtual reality app with the 19 Crimes first, was provided a questionnaire regarding the perceived price, then viewed the series of labels and was asked the level of attractiveness and perceived price for those as well.

Group two viewed the series of labels and was asked the level of attractiveness and perceived price for each, and then experienced the virtual reality app with the 19 Crimes wine and was provided a questionnaire regarding the perceived price.

Participants were asked the perceived price of the 19 Crime wine twice, once after viewing the label in the eye tracking portion, and once after experiencing the virtual reality experience. The differences between the two group's price perceptions was significant. When participants viewed the label first, the average price assumption was in the range of \$5.00 and \$9.99. After viewing the wine label through the virtual reality app, participants perceived price of the 19 crimes wine increased to the \$14.99 - \$20.00 range.

The addition of virtual reality did add value to the product. There is no previous research related to virtual reality and wine labels, so future researchers may want to replicate the current study to see if findings are congruent.

Limitations and Recommendations

The study is contributing to understanding Millennials' as wine consumers, and further presents the influence of wine label design in their decision process when selecting wine. A limitation to this study is that the sample consisted of primarily students and the findings may not be generalizable to the Millennial population as a whole. Another limitation to the study is that the behaviors and preferences reported are from a self-selected sample. The generalization cannot be made for specific segments of wine consumers like novices or connoisseurs.

Additionally, participants were asked about their preferences in package design, perception of price, and level of attractiveness. Their responses reflect conscious assessment, but their responses cannot be a confirmed prediction of actual purchase or future decisions, as mentioned by Laeng et al. (2016). Future research may follow up with the participants to ask if they purchased any of the wines they viewed in the study.

Millennials responded positively to the virtual reality aspect of the 19 Crimes wine. Participants should be asked if they purchased the wine, downloaded the app, or recommended it to a friend. Further, researchers should investigate the frequency of sharing their experiences, purchasing the wine, using the virtual reality app, to evaluate if participants continued to perceive the experience as exciting, or if they lost interest in the product after exposure.

The present study presented which elements of label design are of importance when Millennials chose a bottle of wine, but those elements were not explored in further detail. Future research should study each element more in depth. For example, it is

known that the label color is important in purchasing decisions, but future research can assess what colors Millennials find attractive. Do Millennials prefer traditional colors like white, tan, black, etc., or do they want bright, bold and playful colors?

Logos of the traditional labels, Joel Gott, had a logo that contained “JG” in small letters, encompassed by a circle. The traditional label, Dreaming Tree, did not contain a logo, but the assumption is made that participants viewed the tree (image) as the logo. The same inference can be made for the final traditional label, Chloe, which also did not contain a logo. It is not clear whether participants could accurately associate each label element with the question being asked. For example, when some participants viewed the Chloe label, they may have mistaken the bow (image) as the logo. Therefore, researchers should consider adding visual cues to images as indicators of the AOI each participant is being asked about (see Figure). If identifying the AOI becomes obstructive, researchers might consider having participants view one image with an AOI indicator and one without—side by side or on subsequent pages.

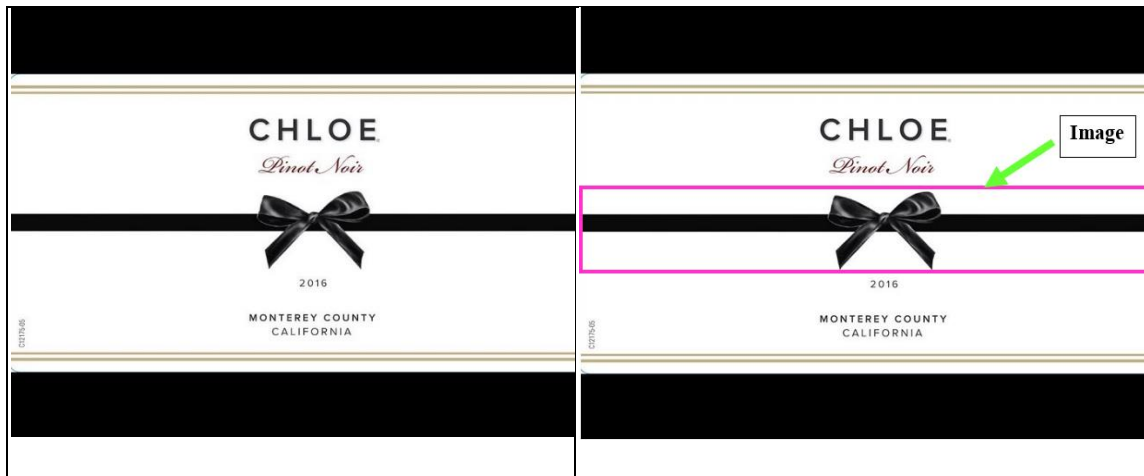


Figure 39. Suggested way to present and clarify AOI to participants.

In the future, researchers may want to explore why Millennials drink wine, how drinking wine makes them feel, and where they drink wine the most (e.g., restaurants, bars, home). In the present study, I assessed basic wine consumption psychographics of Millennials, but more detailed information may be beneficial to wine marketers when creating, promoting, and marketing a product.

Link to Theory

Marketing researchers have used SCT in their studies to evaluate the relationship between personal, behavioral, and environmental determinants and how they affect consumer's thoughts and emotions toward a product or brand and further their purchasing decisions. Bandura (1986) provided a framework that demonstrated three determinant factors interacting with each other to help analyze human motivation, thoughts, and action. Personal determinants are often considered to be people's beliefs,

attitudes, and thoughts. Behavioral determinants refer to what people do, actions taken, and a level of involvement. Environmental determinants affect how a person feels and behaves in an environment; the environment can affect how people function and exist in a setting. Bandura (1986) explained that these determinants form a triadic reciprocal relationship. This study can be used to understand the relationship between each determinant, in regards to Millennials as consumers and their wine purchasing and consumption habits.

Personal determinants in this study were related to Millennials thoughts, feelings, beliefs, and attitudes. Millennials were asked their perception of six wine labels level of attractiveness, and their responses were recorded. They preferred the design of the traditional wine labels over the non-traditional, also believing that they were more expensive. This is a relationship between the environmental determinants (wine label design) and the personal determinants (feelings towards label attractiveness, price perception).

Environmental determinants in this study were related to a physical environment (wine bottle) and a virtual environment (Living Labels app and media platforms). In reference to the physical environment, different layouts and designs of wine labels evoke different behaviors from Millennials. When viewing the wine labels, elements that were easy to read and process, like the name and type of wine, were looked at first and for a short amount of time, and not fixated on for as long as other elements that were more detailed and required more cognition, like the logo or image.

In addition, virtual environments also interact with personal and behavioral determinants. Millennials that experienced the 19 Crimes version of the Living Labels app experienced a virtual environment. Their experience with the app was engaging and overall, they reported positive thoughts and emotions towards the brand, also affecting their potential behavior to purchase the product or recommend it to a friend.

In regards to behavioral determinants, Millennials were described as media consumers and wine consumers. Millennials are drinking wine multiple times a week, and their preferred type of wine is Cabernet. They are purchasing wine multiple times per month, most commonly at the grocery store. They tend to spend between \$10.00 and \$14.99 on a bottle of wine. To promote a message or advertisement to Millennials, the most effective way to communicate is via smartphone. This is the device they are using most often to receive their messages and news. Millennials are also very active on social media. Promoting a product or brand to Millennials through a virtual environment, like social media, may affect their personal determinants, as they view a message, form an opinion, and then affect their behavior to purchase the product.

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APPENDIX A

DATA COLLECTION MATERIALS: EXPERIMENT SIGN UP SHEET

Course Name:

Date Visited:

	First Name	Last Name	Email Address
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			

17			
18			
19			
20			
21			
22			
23			
24			
25			

APPENDIX B

DATA COLLECTION MATERIALS: CONSENT FORM

Title of Research Study: Measuring visual literacy and visual messaging consumption

Investigator: Tobin Redwine

Why are you being invited to take part in a research study?

You are being asked to participate because you are between the ages of 21 and 37.

What should you know about a research study?

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

Who can I talk to?

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the research team at redwine@tamu.edu or (979) 845-3001

This research has been reviewed and approved by the Texas A&M Institutional Review Board (IRB). You may talk to them at 1-979-458-4067, toll free at 1-855-795-8636, or by email at irb@tamu.edu, if

- You cannot reach the research team.

Your questions, concerns, or complaints are not being answered by the research team.

- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.

- You want to get information or provide input about this research.

Why is this research being done?

To investigate visual consumption of images and potential development of visual literacy.

How long will the research last?

We expect that you will be in this research study for one to fifteen weeks. Your session will last approximately 30 minutes.

How many people will be studied?

We expect to enroll about 100 people in this research study at this site. Approximately 100 people in the entire study nationally ***will be enrolled.***

What happens if I say “Yes, I want to be in this research”?

Once a student volunteers to participate, they will schedule their session. At the first session, they will be shown a selected sample of 6 images. They will look at the image and once they are done viewing the image, they will respond to two questions on the computer screen. Videos of each session will be recorded. Recordings are necessary for participation in the study.

What happens if I do not want to be in this research?

You can leave the research at any time and it will not be held against you.

What happens if I say “Yes”, but I change my mind later?

You can leave the research at any time and it will not be held against you. If you decide to leave the research, any data collected will be destroyed.

Is there any way being in this study could be bad for me?

There are no anticipated negative effects to participating in this study.

Will being in this study help me in any way?

There are no other individual benefits. Society will benefit from enhanced understanding of visual message and visual literacy.

What happens to the information collected for the research?

Efforts will be made to limit the use and disclosure of your personal information, including research study and other records, to people who have a need to review this information. We cannot promise complete privacy. Organizations that may inspect and copy your information include the TAMU HRPP/IRB and other representatives of this institution.

Signature Block for Capable Adult

Your signature documents your permission to take part in this research.

Signature of subject

Date

Printed name of subject

Signature of person obtaining consent

Date

Printed name of person obtaining consent

[Add the following if a witness is required to observe the consent process].

My signature below documents that the information in the consent document and any other written and information was accurately explained to, and apparently understood by, the participant, and that consent was freely given by the participant.

Signature of witness to consent process

Date

Printed name of person witnessing consent process

APPENDIX C

SUBJECT CHARACTERISTICS: CODING SHEET

Quantitative Data Coding Sheet Subject Characteristics
Kaylan Millis – Thesis

Variable	Description (Label)	Type	Coding	Source
D0001_RC1	Recode - Age (Current Year - D0001)	Interval	Numeric value	
D0002	What is your gender?	Nominal	1 = Male; 2 = Female; 3 = Non-binary / third gender; 4 = Prefer to self describe (text entry - D0002_Text); 5 = Prefer not to say	
D0010_01	Race - Select one or more - White		1 = Selected (Blank or missing data if not selected)	
D0010_02	Race - Select one or more - Black or African American		1 = Selected (Blank or missing data if not selected)	
D0010_03	Race - Select one or more - American Indian or Alaska native		1 = Selected (Blank or missing data if not selected)	
D0010_04	Race - Select one or more - Asian		1 = Selected (Blank or missing data if not selected)	
D0010_05	Race - Select one or more - Native Hawaiian or Pacific Islander		1 = Selected (Blank or missing data if not selected)	
D0010_06	Race - Select one or more - Other		1 = Selected (Blank or missing data if not selected)	
D0012	Are you Spanish, Hispanic, or Latino or none of these?		1 = Yes, 2 = None of these	
D0009	Are you Spanish, Hispanic, or Latino?		1 = Spanish, 2 = Hispanic, 3 = Latino	
D0011	Please indicate the answer that includes your entire household income last year.		1 = Less than \$10,000, 2 = \$10,000 to \$19,999, 3 = \$20,000 to \$29,999, 4 = \$30,000 to \$39,999, 5 = \$40,000 to \$49,999, 6 = \$50,000 to \$59,999, 7 = \$60,000 to \$69,999, 8 = \$70,000 to \$79,999, 9 = \$80,000 to \$89,999, 10 = \$90,000 to \$99,999, 11 = \$100,000 to \$149,999, 12 = \$150,000 or more	
D0004	Are you currently a student?	Nominal	1 = Yes; 2 = No	
D0007	Which of the items, noted below, best describes the degree program you are currently enrolled in ?	Nominal	2 = Bachelor's degree (D0005 - completed high school); 4 = Graduate degree (master's or doctorate; D0005 - completed bachelor's degree); 6 = Other	
D0005	Which of the items, noted below, best describes your highest completed level of education?	Ordinal	1 = Did not complete high school; 2 = Completed high school diploma or equivalent (GED); 3 = Completed a 2-year college degree (associate's) and/or technical certification; 4 = Completed a 4-year college degree (bachelor's); 5 = Completed a graduate degree (master's or doctorate)	
M0001_01	Facebook	Nominal	1 = Selected	
M0001_02	Twitter	Nominal	1 = Selected	
M0001_03	Instagram	Nominal	1 = Selected	
M0001_04	Pinterest	Nominal	1 = Selected	

M0001_05	Snapchat	Nominal	1 = Selected
M0001_06	LinkedIn	Nominal	1 = Selected
M0003_01	Television	Nominal	1 = Selected
M0003_02	Radio AM or FM	Nominal	1 = Selected
M0003_03	Sirius - XM Satellite Radio	Nominal	1 = Selected
M0003_04	Magazine	Nominal	1 = Selected
M0003_05	YouTube	Nominal	1 = Selected
M0003_06	Spotify	Nominal	1 = Selected
M0003_07	Pandora	Nominal	1 = Selected
M0003_08	Netflix	Nominal	1 = Selected
M0003_09	Hulu	Nominal	1 = Selected
M0003_10	iTunes	Nominal	1 = Selected
M0003_11	iHeart Radio app	Nominal	1 = Selected
M0003_12	Podcasts	Nominal	1 = Selected
M0002_01	Facebook	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0002_02	Twitter	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0002_03	Instagram	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0002_04	Pinterest	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0002_05	Snapchat	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0002_06	LinkedIn	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_01	Television	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_02	Radio - AM or FM	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_03	Sirius - XM Satellite Radio	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_04	Magazines	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_05	YouTube	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month

M0004_06	Spotify	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_07	Pandora	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_08	Netflix	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_09	Hulu	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_10	iTunes	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_11	iHeart Radio app	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month
M0004_12	Podcasts	Ordinal	1 = Once per day (or more); 2 = 2-3 times per week; 3 = Once per week; 4 = 2-3 Times per month; 5 = Once per month

APPENDIX D

SUBJECT CHARACTERISTICS: WINE STUDY INTAKE

What are the last 4 digits of your UIN?



What year were you born? (YYYY)



What is your gender?

Male

Female

Non-binary / third gender

Prefer to self-describe

Prefer not to say



Are you currently a student?

Yes

No



Are you Spanish, Hispanic, or Latino or none of these?

Yes

None of these



Are you Spanish, Hispanic, or Latino?

Spanish

Hispanic

Latino

Choose one or more races that you consider yourself to be:

White

Asian

Black or African American

Native Hawaiian or Pacific Islander

American Indian or Alaska Native

Other

Information about income is very important to understand. Would you please give your best guess?

Please indicate the answer that includes your **entire household income** last year.

Less than \$10,000

\$10,000 to \$19,999

\$20,000 to \$29,999

\$30,000 to \$39,999

\$40,000 to \$49,999

\$50,000 to \$59,999

\$60,000 to \$69,999

\$70,000 to \$79,999

\$80,000 to \$89,999

\$90,000 to \$99,999

\$100,000 to \$149,999

\$150,000 or more



Please select the forms of social media you use at least once per month:

Facebook
Twitter
Instagram
Pinterest
Snapchat
LinkedIn



How often do you use each of the following forms of social media?

	Once Per Day (or more)	2-3 Times a Week	Once Per Week	2-3 Times a Month	Once Per Month
Facebook	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Twitter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instagram	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pinterest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Snapchat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LinkedIn	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please select the forms of media you use at least once per month:

Television

Radio - AM or FM

Sirius - XM Satellite Radio

Magazines

YouTube



How often do you use each of the following forms of media?

	Once Per Day (or more)	Once Per Week	2-3 Times a Month	Once Per Month
Television	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Radio - AM or FM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sirius - XM Satellite Radio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Magazines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
YouTube	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please select the forms of media you use **at least once per month**:

Spotify
Pandora
Netflix
Hulu
iTunes
iHeart Radio app
Podcasts



How often do you use each of the following forms of media?

	Once Per Day (or more)	Once Per Week	2-3 Times a Month	Once Per Month
Spotify	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pandora	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Netflix	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hulu	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iTunes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
iHeart Radio app	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Podcasts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



I listen to music...

(Please select all that apply)

While I am driving

While I am working

While I am getting ready for the day

During free time

While I am working out (at the gym)

While I am studying

Other



How often do you check your mail (United States Postal Service)?

Daily

Weekly

Monthly

Seldom or Never

Other



What device do you use to check your email **most often**?

Smartphone

Tablet

Laptop

Desktop

Other



APPENDIX E

RESEARCH QUESTION ONE: CODING SHEET

Quantitative Data Coding Sheet – Research Question One Kaylan Millis – Thesis

Variable	Description (Label)	Type	Coding	Source
P0031_01	I believe my interaction with the virtual reality app felt natural	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_02	While I was using the virtual reality app, I was aware of events occurring in the real world around me	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_03	The virtual reality app experience seemed realistic	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_04	I felt involved in the virtual reality experience	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_05	I found the virtual reality app easy to use	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_06	I found the virtual reality experience exciting	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_09	I would purchase this product because of the virtual reality element	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_11	I am considering purchasing this product because of my experience today	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_RC1	Grand Mean of Millennials intent to purchase (MEAN(P0031_09, P0031_11))	Scale	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_07	I would recommend this virtual reality app to others	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_10	I would download this app to show others the virtual experience	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0031_RC2	Grand Mean of Millennials intent to recommend (MEAN(P0031_07, P0031_10))	Scale	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	

APPENDIX F

RESEARCH QUESTION ONE: VIRTUAL REALITY QUESTIONNAIRE

What are the last 4 digits of your UIN?



Have you previously experienced augmented reality with wine labels?

Yes

No



Please select your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I believe my interaction with the virtual reality app felt natural	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
While I was using the virtual reality app, I was aware of events occurring in the real world around me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The virtual reality app experience seemed realistic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt involved in the virtual reality experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please select your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I found the virtual reality app easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the virtual reality experience exciting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend this virtual reality app to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The virtual reality app added value to the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Please select your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I would purchase this product because of the virtual reality element	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would download this app to show others the virtual experience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am considering purchasing this product because of my experience today	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



.

What price range do you believe the 19 Crimes wine belongs to?

Under \$4.99
\$5.00 - \$9.99
\$10.00 - \$14.99
\$15.00 - \$19.99
\$20.00 or more



APPENDIX G

RESEARCH QUESTION TWO: CODING SHEET

Quantitative Data Coding Sheet – Research Question Two
Kaylan Millis – Thesis

Variable	Description (Label)	Type	Coding	Source
P0034_01	Please select the level of attractiveness for each wine label element - Dreaming Tree - Name	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0034_02	Please select the level of attractiveness for each wine label element - Dreaming Tree - Wine logo	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0034_03	Please select the level of attractiveness for each wine label element - Dreaming Tree - Wine label colors	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0034_04	Please select the level of attractiveness for each wine label element - Dreaming Tree - Image or picture	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0034_05	Please select the level of attractiveness for each wine label element - Dreaming Tree - Layout	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0034_RC	Recode: Dreaming Tree grand mean - MEAN(P0034_1 to P0034_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0036_01	Please select the level of attractiveness for each wine label element - 19 Crimes - Name	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0036_02	Please select the level of attractiveness for each wine label element - 19 Crimes - Wine logo	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0036_03	Please select the level of attractiveness for each wine label element - 19 Crimes - Wine label colors	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0036_04	Please select the level of attractiveness for each wine label element - 19 Crimes - Image or picture	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0036_05	Please select the level of attractiveness for each wine label element - 19 Crimes - Layout	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0036_RC	Recode: 19 Crimes grand mean - MEAN(P0036_1 to P0036_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0038_01	Please select the level of attractiveness for each wine label element - Joel Gott - Name	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0038_02	Please select the level of attractiveness for each wine label element - Joel Gott - Wine logo	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	
P0038_03	Please select the level of attractiveness for each wine label element - Joel Gott - Wine label colors	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive	

P0038_04	Please select the level of attractiveness for each wine label element - Joel Gott - Image or picture	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0038_05	Please select the level of attractiveness for each wine label element - Joel Gott - Layout	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0038_RC	Recode: Joel Gott grand mean - MEAN(P0038_1 to P0038_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0040_01	Please select the level of attractiveness for each wine label element - Alverdi - Name	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0040_02	Please select the level of attractiveness for each wine label element - Alverdi - Wine logo	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0040_03	Please select the level of attractiveness for each wine label element - Alverdi - Wine label colors	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0040_04	Please select the level of attractiveness for each wine label element - Alverdi - Image or picture	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0040_05	Please select the level of attractiveness for each wine label element - Alverdi - Layout	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0040_RC	Recode: Alverdi grand mean - MEAN(P0040_1 to P0040_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0042_01	Please select the level of attractiveness for each wine label element - Chloe - Name	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0042_02	Please select the level of attractiveness for each wine label element - Chloe - Wine logo	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0042_03	Please select the level of attractiveness for each wine label element - Chloe - Wine label colors	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0042_04	Please select the level of attractiveness for each wine label element - Chloe - Image or picture	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0042_05	Please select the level of attractiveness for each wine label element - Chloe - Layout	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0042_RC	Recode: Chloe grand mean - MEAN(P0042_1 to P0042_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0044_01	Please select the level of attractiveness for each wine label element - Freakshow - Name	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0044_02	Please select the level of attractiveness for each wine label element - Freakshow - Wine logo	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0044_03	Please select the level of attractiveness for each wine label element - Freakshow - Wine label colors	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0044_04	Please select the level of attractiveness for each wine label element - Freakshow - Image or picture	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0044_05	Please select the level of attractiveness for each wine label element - Freakshow - Layout	Ordinal	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive

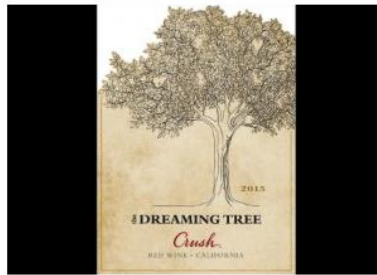
P0044_RC	Recode: Freakshow grand mean - MEAN(P0044_1 to P0044_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0051_C	Computed - Grand mean of traditional labels label element Name MEAN(P0034_1, P0038_1, P0042_1)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0052_C	Computed - Grand mean of traditional labels label element Wine Logo MEAN(P0034_2, P0038_2, P0042_2)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0053_C	Computed - Grand mean of traditional labels label element Wine Label Color MEAN(P0034_3, P0038_3, P0042_3)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0054_C	Computed - Grand mean of traditional labels label element Image or picture MEAN(P0034_4, P0038_4, P0042_4)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0055_C	Computed - Grand mean of traditional labels label element Layout MEAN(P0034_5, P0038_5, P0042_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0056_C	Computed - Grand mean of non-traditional labels label element Name MEAN(P0036_1, P0040_1, P0044_1)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0057_C	Computed - Grand mean of non-traditional labels label element Wine Logo MEAN(P0036_2, P0040_2, P0044_2)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0058_C	Computed - Grand mean of non-traditional labels label element Wine Label Color MEAN(P0036_3, P0040_3, P0044_3)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0059_C	Computed - Grand mean of non-traditional labels label element Image or picture MEAN(P0036_4, P0040_4, P0044_4)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0060_C	Computed - Grand mean of non-traditional labels label element Layout MEAN(P0036_5, P0040_5, P0044_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0046_C	Computed - Grand mean of all wine label element Name MEAN(P0034_1, P0036_1, P0038_1, P0040_1, P0042_1, P0044_1)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0047_C	Computed - Grand mean of all wine label element Wine Logo MEAN(P0034_2, P0036_2, P0038_2, P0040_2, P0042_2, P0044_2)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0048_C	Computed - Grand mean of all wine label element Wine Label Color MEAN(P0034_3, P0036_3, P0038_3, P0040_3, P0042_3, P0044_3)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive

P0049_C	Computed - Grand mean of all wine label element Image or picture MEAN(P0034_4, P0036_4, P0038_4, P0040_4, P0042_4, P0044_4)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0050_C	Computed - Grand mean of all wine label element Layout MEAN(P0034_5, P0036_5, P0038_5, P0040_5, P0042_5, P0044_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0051_C	Computed - Grand mean of traditional labels label element Name MEAN(P0034_1, P0038_1, P0042_1)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0052_C	Computed - Grand mean of traditional labels label element Wine Logo MEAN(P0034_2, P0038_2, P0042_2)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0053_C	Computed - Grand mean of traditional labels label element Wine Label Color MEAN(P0034_3, P0038_3, P0042_3)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0054_C	Computed - Grand mean of traditional labels label element Image or picture MEAN(P0034_4, P0038_4, P0042_4)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0055_C	Computed - Grand mean of traditional labels label element Layout MEAN(P0034_5, P0038_5, P0042_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0056_C	Computed - Grand mean of non-traditional labels label element Name MEAN(P0036_1, P0040_1, P0044_1)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0057_C	Computed - Grand mean of non-traditional labels label element Wine Logo MEAN(P0036_2, P0040_2, P0044_2)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0058_C	Computed - Grand mean of non-traditional labels label element Wine Label Color MEAN(P0036_3, P0040_3, P0044_3)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0059_C	Computed - Grand mean of non-traditional labels label element Image or picture MEAN(P0036_4, P0040_4, P0044_4)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0060_C	Computed - Grand mean of non-traditional labels label element Layout MEAN(P0036_5, P0040_5, P0044_5)	Scale	1 = Very unattractive, 2 = Unattractive, 3 = Neutral, 4 = Attractive, 5 = Very attractive
P0030_01	How influential are each of the following wine label components in your decision making process? (Name)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_02	How influential are each of the following wine label components in your decision making process? (Logo)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important

P0030_03	How influential are each of the following wine label components in your decision making process? (Label Colors)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_04	How influential are each of the following wine label components in your decision making process? (Image or Picture)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_05	How influential are each of the following wine label components in your decision making process? (Wine Label Layout and/or Design)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_06	How influential are each of the following wine label components in your decision making process? (Vintage Year - The year the wine was produced)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_07	How influential are each of the following wine label components in your decision making process? (Country of Origin)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_08	How influential are each of the following wine label components in your decision making process? (Type of Wine)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important
P0030_09	How influential are each of the following wine label components in your decision making process? (Description of Taste)	Ordinal	1 = Not at all important, 2 = 2, 3 = 3, 4 = 4, 5 = Extremely important

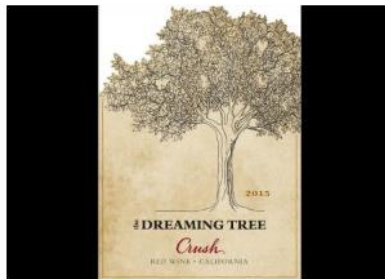
APPENDIX H

RESEARCH QUESTION TWO: LABEL QUESTIONNAIRE



Please select the level of attractiveness for each wine label element :

	Very Unattractive	Unattractive	Neutral	Attractive	Very Attractive
Wine Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Logo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Label Colors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Image or Picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How much do you think a bottle of wine with this label would cost?

Less than \$5.00

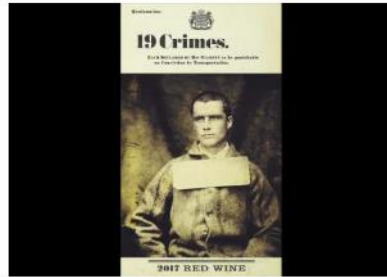
\$5.00 - \$9.99

\$10.00 - \$14.99

\$15.00 - \$19.99

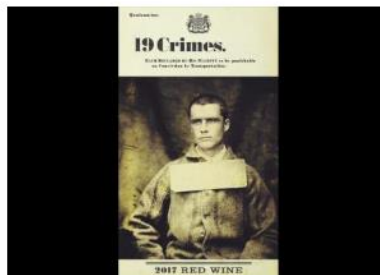
\$20.00 or more





Please select the level of attractiveness for each wine label element :

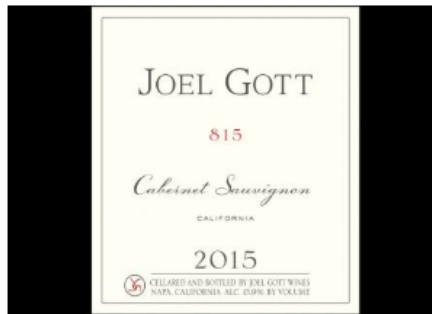
	Very Unattractive	Unattractive	Neutral	Attractive	Very Attractive
Wine Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Logo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Label Colors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Image or Picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How much do you think a bottle of wine with this label would cost?

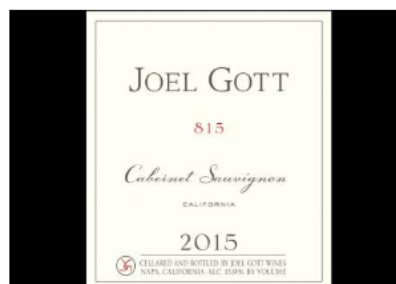
Under \$4.99
\$5.00 - \$9.99
\$10.00 - \$14.99
\$15.00 - \$19.99
\$20.00 or higher





Please select the **level of attractiveness** for each wine label element :

	Very Unattractive	Unattractive	Neutral	Attractive	Very Attractive
Wine Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Logo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Label Colors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Image or Picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How much do you think a bottle of wine with this label would cost?

- ☐ Under \$4.99
- ☐ \$5.00 - \$9.99
- ☐ \$10.00 - \$14.99
- ☐ \$15.00 - \$19.99
- ☐ \$20.00 or higher





How much do you think a bottle of wine with this label would cost?

Under \$4.99

\$5.00 - \$9.99

\$10.00 - \$14.99

\$15.00 - \$19.99

\$20.00 or higher



Please select the **level of attractiveness** for each wine label element :

	Very Unattractive	Unattractive	Neutral	Attractive	Very Attractive
Wine Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Logo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Label Colors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Image or Picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





Please select the **level of attractiveness** for each wine label element :

	Very Unattractive	Unattractive	Neutral	Attractive	Very Attractive
Wine Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Logo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Label Colors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Image or Picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How much do you think a bottle of wine with this label would cost?

Under \$4.99

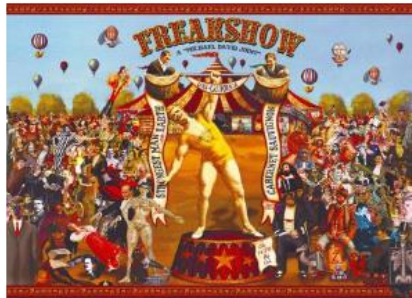
\$5.00 - \$9.99

\$10.00 - \$14.99

\$15.00 - \$19.99

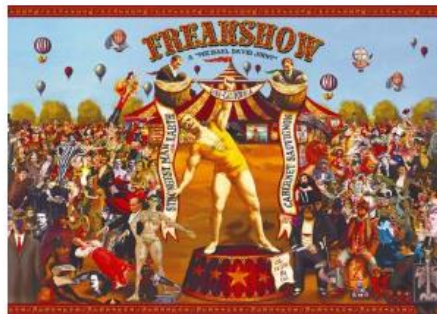
\$20.00 or higher





Please select the level of attractiveness for each wine label element :

	Very Unattractive	Unattractive	Neutral	Attractive	Very Attractive
Wine Name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Logo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wine Label Colors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Image or Picture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Layout	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How much do you think a bottle of wine with this label would cost?

Under \$4.99

\$5.00 - \$9.99

\$10.00 - \$14.99

\$15.00 - \$19.99

\$20.00 or higher



APPENDIX I

RESEARCH QUESTION THREE: CODING SHEET

Quantitative Data Coding Sheet – Research Question Three

Kaylan Millis – Thesis

Variable	Description (Label)	Type	Coding	Source
H0030	How often do you drink wine?	Ordinal	1 = Daily; 2 = Multiple times per week, but not daily; 3 = Once per week; 4 = Multiple times per month, but not weekly; 5 = Once per month; 6 = Multiple times per year, but not monthly	
H0033_01	Cabernet	Nominal	1 = Selected	
H0033_02	Champagne and/or sparkling wine	Nominal	1 = Selected	
H0033_03	Chardonnay	Nominal	1 = Selected	
H0033_04	Malbec	Nominal	1 = Selected	
H0033_05	Merlot	Nominal	1 = Selected	
H0033_06	Pinot Noir	Nominal	1 = Selected	
H0033_07	Rosé	Nominal	1 = Selected	
H0033_08	Sauvignon Blanc	Nominal	1 = Selected	
H0033_09	Zinfandel	Nominal	1 = Selected	
H0031	How often do you purchase wine?	Ordinal	1 = Daily; 2 = Multiple times per week, but not daily; 3 = Once per week; 4 = Multiple times per month, but not weekly; 5 = Once per month; 6 = Multiple times per year, but not monthly	
H0032	Where do you typically purchase wine? (select all that apply)	Nominal	1 = Grocery store, 2 = Liquor store, 3 = Convenience store, 4 = Gas station, 5 = Wine store	
H0034	How much do you typically spend on a bottle of wine?	Ordinal	1 = Less than \$5.00, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more	

APPENDIX J

RESEARCH QUESTION THREE: WINE INTAKE

How often do you **drink** wine?

Daily

Multiple times per week, but not daily

Once per week

Multiple times per month, but not weekly

Once per month

Multiple times per year, but not monthly

Never



How often do you **purchase** wine?

Daily

Multiple times per week, but not daily

Once per week

Multiple times per month, but not weekly

Once per month

Multiple times per year, but not monthly



Where do you typically purchase wine? (select all that apply)

Grocery store

Liquor store

Convenience store

Gas station

Wine store



How would you describe the level of enjoyment you experience from drinking wine?

	Not at all enjoyable 1				Very enjoyable 5
level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



How much do you typically spend on a bottle of wine?

Less than \$5.00

\$5.00-\$9.99

\$10.00-\$14.99

\$15.00-\$19.99

\$20.00 or more



Which of the following types of wine do you drink at least once in a while? (select all that apply)

Cabernet

Champagne and/or sparkling wine

Chardonnay

Malbec

Merlot

Pinot Noir

Rosé

Sauvignon Blanc

Zinfandale



APPENDIX K

RESEARCH QUESTION FOUR: CODING SHEET

Quantitative Data Coding Sheet – Research Question Four

Kaylan Millis – Thesis

Variable	Description (Label)	Type	Coding	Source
P0031_08	The virtual reality app added value to the product	Ordinal	1 = Strongly agree, 2 = somewhat agree, 3 = Neither agree nor disagree, 4 = Somewhat agree, 5 = Strongly agree	
P0037	How much do you think a bottle of wine with this label would cost? 19 Crimes	Ordinal	1 = Under \$4.99, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more	
P0032	What price range do you believe the 19 Crimes wine belongs to?	Ordinal	1 = Under \$4.99, 2 = \$5.00 - \$9.99, 3 = \$10.00 - \$14.99, 4 = \$15.00 - \$19.99, 5 = \$20.00 or more	

APPENDIX L

RESEARCH QUESTION FOUR: VIRTUAL REALITY QUESTIONNAIRE

Please select your level of agreement with the following statements:

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I found the virtual reality app easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the virtual reality experience exciting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would recommend this virtual reality app to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The virtual reality app added value to the product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

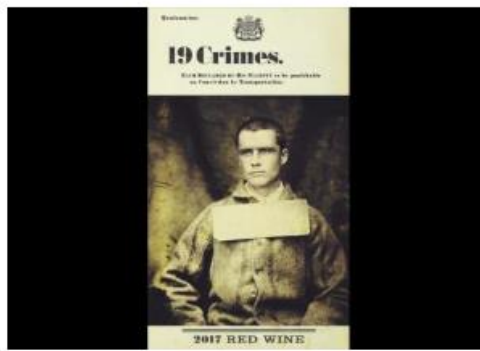


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What price range do you believe the 19 Crimes wine belongs to?

Under \$4.99
\$5.00 - \$9.99
\$10.00 - \$14.99
\$15.00 - \$19.99
\$20.00 or more





How much do you think a bottle of wine with this label would cost?

Under \$4.99

\$5.00 - \$9.99

\$10.00 - \$14.99

\$15.00 - \$19.99

\$20.00 or higher



APPENDIX M

EYE TRACKING AREAS OF INTEREST

