Exploring the impact of phonetic pronunciation guides
on wine choice and perceived sophistication

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Abstract

This study delves into an often-overlooked aspect of wine consumer decision-making – the desire to appear knowledgeable in social settings. Focusing on Texas wines, which are often less well known and more intimidating to say aloud, an exploratory survey examined the impact of phonetic guides on respondents' choice of wine off a menu. Analysis through nominal logistic regression revealed the presence of phonetic guides as the most significant predictor, suggesting consumers feel pressure to appear knowledgeable or sophisticated. Respondents who were provided menus with phonetic spellings were more inclined to choose wines with intimidating names. The inclusion of phonetic spellings not only reduced the perceived risk in ordering the wine but also served an educational role. By recognizing the influence of social factors, such as a consumer's perceived sophistication, this study recommends establishments enhance menus with phonetic guides to empower consumers in making confident, informed choices.

INTRODUCTION

There is a need in wine consumer research to determine whether a wine consumer's fear of embarrassment from not being able to pronounce the name of a wine is affecting what wines they will order off a menu. The ability to reduce perceived risks is the goal of many wine marketing techniques (Bruwer et al., 2013; Cho et al., 2014; Johnson and Bruwer, 2004; Lacey et al., 2009; Mitchell and Greatorex, 1989). This includes tactics for increasing the knowledge of wine consumers using the wine label, restaurant menu, or knowledgeable servers (Jaeger et al., 2010). The objective of this study is to discover if there is a significant difference in the purchasing behavior of Texas wine consumers for wines with the phonetic pronunciation displayed next to them on the wine menu, compared to those without.

Practical implications for this study are especially applicable to Texas wine as the varieties becoming increasingly popular include difficult to pronounce wines such as Viognier, Blanc du Bios, Sangiovese, Tempranillo, Mourvèdre, Aglianico, Albariño, Montepulciano, and Negroamaro (Ryan, 2020). Research has shown that self-confidence can be correlated to the speaker's ability to pronounce the given term (Zielinski, 2012). Previous literature has shown that consumers are more confident when being able to pronounce a wine variety's name and this could lead to an increase in knowledge (Barber, Ismail, and Taylor, 2007; Hristov, 2017; Macintyre et al., 1998; McClung et al., 2015; Van Wyk, 2018). The hypothesis for this study was inspired by the findings that gathering information and increasing wine knowledge results in an increase in the consumer's self-confidence which could result in an increase in the likelihood of them ordering a hard-to-pronounce wine variety.

Using the phonetic pronunciation of the wine variety on the menu to increase the consumer's subjective knowledge of the wine could result in an increase in their self-confidence (Barber, Ismail, and Dodd, 2007; Dodd, 1997; Hristov, 2017). Building on this correlation that as subjective knowledge increases, self-confidence increases, this study examined whether a consumer's ability to say a variety's name is related to whether they are more or less willing to order the wine at a winery or restaurant. To explore this hypothesis, two methods were used to discern if there is a significant effect on consumer behavior due to phonetic pronunciations being present. A field experiment using four different locations for a Texas winery used a difference-in-difference method to determine if there is a change in the proportion of harder-to-pronounce wines purchased based on the menu being updated with phonetic spellings.

Additionally, a quasi-experimental survey of 500 Texas wine consumers was conducted with half the respondents receiving a wine menu with phonetic spellings incorporated and the other half receiving a regular menu without phonetic spellings. Logistic regression was used to determine if the type of wine menu had a significant effect on wine choice, while taking into consideration other variables (such as wine preference) as predictor variables. The significance of each variable was determined by using the p-value at 0.05 significance level from the nominal logistic regression model, and post-hoc tests such as Tukey HSD to compare rankings for wine pronunciation difficulty.

LITERATURE REVIEW

Wine Purchasing and Decision-Making

A 2023 study found that New World countries have had significant increases in wine consumption over the past 25 years (1995-2021) (Ohana-Levi and Netzer, 2023). With an increasing number of wines coming onto the market each year, studies indicate that consumers feel overwhelmed by the complex factors involved in choosing a wine (Rasmussen and Lockshin,

1999). These factors make it a necessity for wineries to find innovative ways to differentiate their wines, while also decreasing the anxiety and confusion consumer's experience while purchasing a wine.

The quality of wine, like many food and drink products, can only be determined after it has been tasted. Thus, it is often difficult for consumers to make their purchasing decisions, finding it necessary to consult outside sources for information (e.g., recommendations, expert evaluative rankings, reputation of the winery, etc.), as well as the information and graphics contained on bottle labels, and the information sources wine menus can provide to influence their choices (Lockshin and Cohen, 2011). Furthermore, consumers often feel a sense of anxiety or fear of social rejection from choosing the wrong wine or embarrassment from a lack of knowledge (Goffman, 1956; Olsen et al., 2003). One way to possibly reduce this anxiety is by providing consumers with information that will increase their knowledge of the wine under consideration (Mitchell and Greatorex, 1989; Thomas and Pickering, 2003).

Wine Menu Decision-Making

An example of this is the Corsi et al. (2012) study, which was primarily motivated by the need to investigate how consumers make choices when selecting wine from a menu. The researchers emphasize that wine menus provide a unique context where consumers often vocalize the names of the wines during the decision-making process. This type of on-premises trade differs from off-premise trade in many ways, and has been shown to be a significantly more stressful environment for wine purchasing, due to increased social risk and the public setting (Gultek et al., 2006; Hall et al., 2001; Ritchie, 2007). However, the social setting of restaurants or wineries has been found to enhance consumers' inclination towards risk-taking behavior. This can be attributed to the group dynamic and individuals' inclination to make a distinct or unique choice and possibly reduce potential future risks by expanding their wine knowledge (Ariely and Levav, 2000) . On the other hand, Ritchie (2007) found that one of the coping strategies participants used for choosing wine in a stressful restaurant setting was choosing a familiar variety or wine name.

Lacey et al. (2009) found that an unexpected proportion (47%) of participants were actively engaging in risk-seeking behavior, demonstrated by the significant number of orders for unfamiliar wines. However, Gulteck et al., (2006) and Ritchie (2007) suggest that the opposite might be true because ordering a wine in a public setting requires a certain level of knowledge and vocabulary that increases anxiety when ordering. The perceived risk the customer feels when choosing an unfamiliar wine has been shown to be correlated to whether they feel they impressed someone or not (Hall et al., 2001). Wine menu designers should be aware of the setting their consumers are in and tap into the potential that may already be present for wine buyers to try a variety they may never have heard of.

With on-premise wine sales totaling USD 16.47 billion in 2019 (Statista, 2019), there is a significant need for research focusing on how to better market wine in these specific environments. Studies have explored the effects of different wine menu designs and organization, (Berenguer et al., 2009; Gil Saura et al., 2008) as well as how different age segments react to wine service and price (Dodd, 1997). Corsi et al. (2012) explored how organizing a wine menu by price, compared to organizing it by region or food and wine pairings, resulted in the customers ordering lower priced wines more often. Offering wine by the glass as a purchasing option and taking into account the consumer's particular dining experience can also enhance wine sales. (Hall et al., 2001; Jaeger et al., 2010). However, there has not been a study focusing on the effect of adding phonetic pronunciation to wine menus - considering the existing knowledge on reported anxiety during ordering, phonetic pronunciation may serve as a method to reduce that anxiety and open a pathway

to sales. When it comes to buying wine, the presence of risk factors is further heightened in a public setting such as a restaurant or tasting event (Ritchie, 2007), however, the use of phonetic pronunciation might assist in reducing the perceived risk for customers. These ideas are in line with Goldfarb et al.'s (2015) study, where they investigated how social interactions affect consumer behavior. In their research, they explored shifts in retail setups and their impact on the business transactions. They found that formats with less social friction, meaning fewer interpersonal interactions, led to consumers ordering more complex items, even those with harder-to-pronounce names. This suggests that the level of social interaction in a selling format influences consumers to choose more linguistically challenging products.

Risk-reducing Strategies in Wine Purchasing

Researchers have found specific factors that aid consumers during their decision-making such as choosing a brand they are familiar with (from name brands to previously tasted brands), or recommendations from friends, family, retail personnel and/or wine-experts (Mitchell and Greatorex, 1989). These factors alleviate consumer anxiety and perceived risk (PR) associated with purchasing wine by minimizing the uncertainty involved in the purchasing process. According to Mitchell and Greatorex (1989), consumers who have limited previous experiences or inadequate knowledge about a wine tend to perceive a higher level of risk when making a purchase. Marketing strategies that aim to reduce the risk of buying a specific wine are employing risk-reducing strategies (RRS).

Types of Risks

Previous researchers have segmented risk into different categories focused on the functional, social, financial, and the physical aspects of risk and further devised six risk reduction strategies that can reduce a consumer's purchase anxiety (Johnson and Bruwer, 2003; Mitchell and Greatorex, 1989; Spawton, 1991). Spawton, (1991), found the division of the types of risk to be more succinctly summarized as psychological, functional, and economic risks. Functional risk entails anything related to the taste of the wine and can further include the use of the wine for specific occasions or as a pairing for dishes. Social risk constitutes the psychological risk wherein the buyer does not satisfy the needs of family and friends, thereby damaging their self-esteem. Financial risk is related to the extrinsic value of the product relative to the price paid.

Purchase and risk-reducing strategies (RRS)

Mitchell and Greatorex (1989) and Spawton (1991) were the first studies to specifically address the aspect of risk-reducing strategies (RRS) related to wine purchases, and the following six categories for RRS still apply to wine purchasing situations today. These strategies were developed originally by Mitchell and Greatorex (1989) to describe wine purchasing. They were further modified by Spawton (1991) as described below.
(1). Inexperienced consumers often exhibit brand loyalty by relying on a well-known brand that is recognized for producing high-quality wine, as a way to mitigate risk.
(2). Another risk reduction strategy (RRS) involves seeking external information sources, such as consulting experienced wine consumers, to inform their purchasing decisions.
(3). Alternatively, consumers may depend on the selection of wines offered by the store or seek assistance from knowledgeable retail staff, viewing both as reputable sources for identifying quality wines.
(4). Another RRS involves self-education through wine-related courses or resources, allowing consumers to enhance their knowledge and minimize risks associated with wine purchases.

(5). Furthermore, consumers may utilize the price of a wine as a proxy for its quality.
(6). Lastly, packaging and labeling play a role as indicators of both the quality and type of product purchased.

These RRS have now gained wide acceptance as the six methods consumers use during the wine purchasing process (Bruwer et al., 2013). These strategies can then be employed by the establishment selling wine in different creative ways. This study's goal is to determine if using the phonetic pronunciations on the wine menu is one possible method of implementing the sixth RRS into their wine marketing. Since adding the phonetic spelling gives the customer one additional source of external information that could enhance their knowledge, the consumer may feel less risk in ordering the wine variety that they otherwise have very little knowledge about.

Self-confidence as a risk-reducing strategy

Interestingly, which RRS a consumer uses could be related to their level of self-confidence (McClung et al., 2015). An example of this is seeking external knowledge that could increase the consumer's confidence in their choice by increasing their knowledge base (Thomas and Pickering, 2003). In recent research, self-confidence has gained attention as a significant factor in understanding wine purchasing behavior. Olsen et al. (2003) emphasize the importance of considering self-confidence as a separate aspect when examining wine purchase behavior, as it can influence a consumer's willingness to explore and try new or unfamiliar wines. A study conducted by McClung et al., (2015) used the Wine Self Confidence Scale (WSCS) as a means of predicting which RRS is most often employed during wine purchases. This study's outcome aligns with the findings of Olsen et al. (2003), highlighting that consumers who have access to information that enriches their knowledge base can effectively boost their self-confidence when it comes to selecting a wine.

Using Phonetic Pronunciation as a Risk-reducing Strategy

One of the goals in wine consumer research is to reduce the consumer's anxiety while purchasing wine. This study proposes exploring a method for increasing the consumer's knowledge and self-confidence by adding the phonetic pronunciation of the wine varieties next to the variety listed on the menu. An example would be the variety Viognier, where the pronunciation in layman's terms would be written as Vee-oh-nee-yay. This method could be reproduced for any other wine varieties (such as Tempranillo - temp-ra-nee-yoe).

In language studies, the act of giving people the ability to pronounce terms correctly has been shown to increase their confidence and willingness to communicate (Macintyre et al., 1998; Zielinski, 2012). Specifically, Macintyre et al. (1998) correlated the ability for second language learners to pronounce words correctly with an increase in their self-confidence to speak the language outside the classroom. Similarly, Gilakjani (2012) conducted a study and found a strong correlation between a foreign language learners' limited pronunciation skill and a decrease in their self-confidence. The same study showed that the lack of proper pronunciation decreased the speaker's number of social interactions and decreased people's perception of their true language speaking abilities. These different correlations could be related to the difficulty consumers have when trying to pronounce a new wine variety and why they are so hesitant to order these new wine varieties. There is a need for research focusing on the effect that pronouncing the name of a wine has on the consumers' willingness to order the wine.

Considering the existing gap in the literature, this study aims to explore whether providing pronunciation spelling on the menu has an effect on which wine a consumer chooses off a menu. Research question 1: Using winery sales, explore whether adding phonetic pronunciation information significantly increases the wine sales for hard versus easy to pronounce wines.

Research question 2: Through an exploratory survey, explore if phonetics on a menu, when given to Texas wine consumers, will affect their choice between 4 noble grape varieties and 4 Texas grape varieties.

Research question 3: Use the survey's wine knowledge, preference, and demographics data to analyze their association and effect on the consumer's wine choice.

METHODOLOGY

Exploratory Survey Design

The information gathered in the survey was meant to see if consumer characteristics, such as self-reported wine knowledge, consumption frequency or gender had an impact on whether phonetic pronunciations were preferred on wine menus. The first of the qualitative questions asked were about the respondent's wine consumption frequency. Consumption frequency for wine consumers has been shown to be linked to gender and preference for either red or white wine (Bruwer et al., 2013, 2011). This could be an important factor to take into consideration when looking at the respondents' wine choice, as high frequency wine consumption has been linked to being more involved in the wine buying process as well as a willingness to learn more about the wine (Thach and Olsen, 2015). The method for measuring consumption frequency is based on Bruwer et al., (2013) and Bruwer & Buller, (2012). The survey respondents were asked to rate their consumption frequency as either once a day, more than once a week, once a week, once every two weeks, once a month, or less than once a month.

The second question asked respondents to give their self-reported (SR) wine knowledge. SR wine knowledge has been a well-studied consumer attribute as it can be linked to consumer self-confidence, the risk reducing strategies they employ, or the sweetness level they prefer (Blackman et al., 2010; Bruwer et al., 2013; Ellis and Thompson, 2018; Ferreira et al., 2022). SR wine knowledge will be the only type of knowledge evaluated in this survey because of the subjective nature of the question. SR wine knowledge is the type of knowledge that is referring only to what the consumer believes they know subjectively, not what they objectively know (Ellis and Thompson, 2018). The subjective nature of SR wine knowledge is important to evaluate because this attribute of the consumer can affect their variety seeking behavior, with those who have high subjective knowledge wanting to try more varieties than those with less (Ellis and Thompson, 2018). This might be an important factor to take into consideration when looking at the initial wine variety the consumer chooses from the list in the survey, as higher SR knowledge consumers may choose more difficult to pronounce names and feel the pronunciations are unnecessary. The question format asked whether they have low, medium, good, or very good wine knowledge.

Age and gender are two factors that can be significantly linked to the consumer's level of self-confidence and the level of experience they have had with wine (Barber et al., 2006; Ferreira et al., 2022). The menu questions first gave respondents the instructions to imagine they would have to say the wine variety they want to order out loud, and then are asked to pick a preferred wine variety based on this situation. The wines listed are four of the easiest to grow grapes according to Texas wine grape growers (Texas A&M Agrilife Extension, 2021) as well as four noble grape varieties. The noble grape varieties were chosen because they have been designated as some of the most well-known and widely grown grape varieties in the world, therefore, should be very recognizable to the average wine consumer. The Texas varieties were Blanc Du Bois, Mourvèdre, Sangiovese, and Tempranillo. These wine varieties are the top four easiest to grow and are most likely the varieties Texas wine consumers will be seeing more of in the future. As

previously mentioned, the wine varieties that are favored in Texas are typically harder to pronounce and less well-known. By giving the consumer an equal chance to choose a well-known and non-well-known variety, any preference for one over the other could be revealed.

The final section was designed to gather socio-demographic data, which will allow for cross-tabulation to determine if there are any significant differences among the respondents when looking at consumption frequency, wine type preference, age, and gender. The results from the survey were analyzed using a Chi-Square test to statistically differentiate categories in the sample population reflecting the type of consumer that they are (Alonso et al., 2007; Szolnoki, 2018). The age groups were based on the U.S. Census Bureau age categories and broke consumers down into Baby Boomers, Generation-X, and Millennials.

It is important to consider the possible response bias that could occur within the survey such as social desirability bias, acquiescence, or moderacy bias (Forbes et al., 2009; Krosnick, 1999). By wording the questions to describe the purchasing situation, hopefully, some of these response biases were mediated. Since there are a multitude of factors that can affect wine purchasing behavior, simplifying the decision process to just a few varieties with only simple descriptors of red or white makes it easier to determine the cause of the wine choice.

Amazon's MTurk marketplace was the distributor for this survey. The survey was posted as a "human intelligence task" where the respondents, known as providers on MTurk, can find tasks such as completing a survey for a small compensation. It was possible to limit the respondents to within a certain geographical region, such as Texas, by defining this in MTurk. The monetary cost of distributing the survey through MTurk was less than most alternative options, with $1 being the average compensation for completing the survey. This was a feasible option for the study as hundreds of responses were gathered in a 7-day period with a reasonably representative sample of the Texas wine consumer population (Vigar-Ellis et al., 2015). The survey questions can be seen in Figure 1. where half the respondents randomly were assigned a menu with phonetic pronunciation guides on them and half assigned one without.

Field-Experiment Research Design

This experiment was conducted across four different winery locations in Texas, all under with the same menu. A field experiment is necessary to try and capture the real-life pressure, or "social friction" that comes with trying to order wine correctly (Goldfarb et al., 2015). The Goldfarb et al (2015) concept of "social friction" is similar to the theory from Goffman, (1956), that social interactions provide individuals with an opportunity to present a favorable image of themselves and failing to do so could result in embarrassment.

This study seeks to explore whether the desire to avoid potential embarrassment, when confronted with a challenging-to-pronounce wine, can override the inclination to try a specific type of wine. The in-person locations are in the Fredericksburg Hill Country American Viticulture Area (AVA), Brazos Valley area, Houston area, and North Texas AVA. Each test location has a setting in which their wine menu is available for customers with options to purchase either by the glass or by the bottle. The clientele sample consisted of visitors who purchased wine and are of drinking age (21 years and older). The goal of the experiment was to explore if there was a significant correlation in the number of hard-to-pronounce wine varieties sold and whether phonetic pronunciations was present. To avoid any bias, all the varieties listed on the menu had phonetic pronunciations next to them.

The study spanned a 6-week duration during which the sales data of each winery was recorded both before and after the experiment (12 weeks total). Employing a difference-in-difference methodology, this design facilitated a more robust assessment of the dependent variable. Specifically, for half of the experiment's duration, no changes were implemented at any winery

locations, serving as a control group. During the remaining half, two wineries updated their menus to include phonetic pronunciations. This approach was chosen for its ability to provide a reliable basis for measuring changes, enabling comparisons within the same time frame. This mitigated the potential confounding effects of temporal variations, commonly associated with conventional before-and-after comparisons, thereby enhancing the study's internal validity.

Analyzing the Sales Data

The sales data was analyzed using the JMP 16.0, SAS Institute Inc. Cary, NC.   The total number of wines sold during the 6-week time period were compared to the previous 6 weeks as well as between the two treatment groups during the 6-week time period. The proportion of hard-to-pronounce wines sold during the 6 weeks were compared to the proportion of hard-to-pronounce wines sold before the 6 weeks. Contingency analysis and Pearson's Chi-square were used to determine if there is a significant difference in the proportion, as well as Cochran Mantel-Haenszel (CMH) test to determine if the menu type as a third stratifying variable is significantly related to any changes seen in the proportion of hard-to-pronounce wines sold. The wine varieties on the menu were limited to the tasting room's sale by the glass and must have been sold across all four locations. Each location had the same menu with only the added phonetics as the one difference. The varieties that were determined as hard-to-pronounce were varieties that grow well in Texas but may be less well known to the general population in Texas, as they are not commonly sold across the United States. The varieties that were determined easy-to-pronounce were either blend names or a variety that made the top 10 most sold varieties in the United States (USA Wine Ratings, 2019). Total sales from the different wineries and each time period were compiled and analyzed.

RESULTS

A total of 454 valid responses were obtained from the survey distributed through Amazon's Mechanical Turk, after checking the qualification criteria. Survey questions and answers can be seen in Table 1.

Table 1. Exploratory survey questions and response frequencies.

Variables	Percent	# of Responses
What is your wine consumption frequency?		
a. Once a day	(8%)	39
b. More than once a week	(24%)	111
c. Once a week	(33%)	155
d. Once every two weeks	(12%)	56
e. Once a month	(13%)	59
f. Less than once a month	(10%)	49
Please indicate which gender you are below:		
a. male	(54%)	251
b. female	(46%)	214
c. prefer not to say	(1%)	4

What would you rate your wine knowledge?

a. limited	(23%)	110
b. medium	(35%)	163
c. good	(27%)	128
d. very good	(14%)	68

What generation are you?

a. Millennial 27-42 years	(67%)	313
b. Gen-X 43-58 years	(27%)	125
c. Baby Boomers 59 years and above	(7%)	31

Have you ever been hesitant to order a wine off a menu because the name was too intimidating to pronounce out loud?

a. no	(39%)	181
b. yes	(62%)	293

Which of these wines would you most likely want to order at a Texas winery? (please imagine you would also need to say the name out loud to choose it)

a. Blanc du Bois - dry white	(11%)	27
b. Mourvèdre - dry red	(11%)	26
c. Tempranillo - dry red	(16%)	37
d. Sangiovese - dry red	(10%)	24
e. Chardonnay - dry white	(14%)	34
f. Pinot noir - dry red	(9%)	21
g. Merlot - dry red	(18%)	42
h - Cabernet Sauvignon - dry red	(10%)	24

If the menu were to look like the following (which includes phonetic spellings) which wine would you most likely want to order at a Texas winery? (imagine you would have to say the name out loud to order it)

a. Blanc du Bois (blonk-doo-bwah) - dry white	(11%)	25
b. Mourvèdre (moor-veh-druh) - dry red	(16%)	38
c. Tempranillo (temp-rah-nee-yoe) - dry red	(17%)	40
d. Sangiovese (san-joe-vay-zee) - dry red	(14%)	32
e. Chardonnay (shar-doe-nay)- dry white	(12%)	28
f. Pinot noir (pee-ne Ne-war)- dry red	(7%)	16
g. Merlot (mer-low) - dry red	(13%)	30
h - Cabernet Sauvignon (cab-er-nay Saw-vuh-nyon)- dry red	(10%)	23

Which type of wine do you prefer?

a. red	(61%)	286
b. both, it depends on the occasion	(21%)	99
c. white	(18%)	84

Analysis of Variety Pronunciation Difficulty

      The balanced Likert rankings for the different wine varieties (on a scale from 1-8) were analyzed to determine if there was a significant difference in mean rankings between the varieties with 1 being the least intimidating to pronounce and 8 being the most intimidating. The 8 different varieties compared were 4 noble grape varieties: Cabernet Sauvignon, Merlot, Pinot Noir, Chardonnay and 4 Texas grape varieties: Tempranillo, Sangiovese, Blanc du Bois, and Mourvèdre. The means and standard deviations were calculated for each variety. Cabernet Sauvignon, Sangiovese, and Mourvèdre had the highest averages with 5.03, 5.02, and 4.80 respectively. The middle rankings consisted of Tempranillo with a mean of 4.61, Pinot Noir with 4.58 and Blanc du Bois with a mean of 4.12. The lowest means were for Merlot at 4.07 and Chardonnay at 3.72. Using these rankings, it was determined that a wine for this sample can be classified as "hard" to pronounce if the ranking was greater than 4.6 on average and "easy" to pronounce if the ranking is less than 4.6 on average. This makes Cabernet Sauvignon, Sangiovese, Mourvèdre, and Tempranillo "hard" to pronounce wines and Chardonnay, Merlot, Blanc du Bois, and Pinot Noir "easy" to pronounce wines.

      One-way ANOVA was performed in JMP to determine if there was a significant difference between the means. The analysis of variance shows that there is a significant difference between average rankings of the different wine varieties ($F = 20.4467$, $p < .0001$).

      Tukey-Kramer HSD (see Table 2.) was performed to determine which of the varieties was ranked significantly higher than the others. There were significant differences between the means Cabernet Sauvignon, Sangiovese and Mourvèdre rankings when compared to Blanc du Bois, Merlot and Chardonnay. Tempranillo was also ranked significantly higher than Blanc du Bois, Merlot, and Chardonnay.

Table 2. Tukey's Kramer HSD test for difference between ranking of wine pronunciation difficulty.

Level			Mean
Cabernet Sauvignon	A		5.0308370
Sangiovese	A		5.0242291
Mourvèdre	A		4.8061674
Tempranillo	A		4.6189427
Pinot Noir	A		4.5837004
Blanc du Bois		B	4.1233480
Merlot		B	4.0792952
Chardonnay		B	3.7224670

(significance level at p <0.05)

Analysis of menu type on variety choice using nominal logistic model

      A nominal logistic regression model was run to determine which of the categorical predictor variables would be significant predictor in determining the likelihood of a respondent ordering an easy or hard wine to pronounce.

      When looking at the nominal logistic model of the test where the responses were used as predictors in determining the log odds ratio hard/easy, a positive effect on the ratio meant that the predictor resulted in the respondent being more likely to choose a hard to pronounce wine variety instead of an easy one. The whole model test indicated that the null hypothesis can be rejected in

favor of the alternative hypothesis: that the model has significant predictive power and at least one of the predictor variables is associated with the response variable ($P = .0002$).

 Table 3 shows the only parameters predictor variables that had a significant effect were wine knowledge levels that were limited and medium, where the estimate for the limited wine knowledge is -0.5955122, showing that limited wine knowledge reduces the probability of the respondent choosing a hard-to-pronounce wine variety over an easy to pronounce wine variety. Another significant predictor variable was the wine menu type, with the phonetic menu having a positive estimate of 0.28704334 and p-value of 0.0045, indicating the phonetic menu increases the probability of the respondent choosing a hard-to-pronounce wine. A visual example of this phenomenon can be seen in Figure 1, where respondents given a menu with phonetic pronunciations appear to order the harder-to-pronounce varieties more often.

Table 3. Predictor variables and their significance level and parameter estimate for all questions asked in the exploratory survey.

Variable	Odd's Ratio	Std Error	χ^2	Significance Level
Intercept	0.34224397	0.446918	0.59	0.4438
Hesitant to order wine [a. No]	-0.1200263	0.1056859	1.29	0.2561
Which type of wine do you prefer? [a Red]	0.33752913	0.1421566	5.64	0.0176*
Which type of wine do you prefer? [b. White]	0.17744298	0.1829162	0.94	0.3320
What is your wine consumption frequency? [a. Once a day]	-0.0461217	0.3232969	0.02	0.8866
What is your wine consumption frequency? [b. More than once a week]	0.3652643	0.2090719	3.05	0.0806
What is your wine consumption frequency? [c. Once a week]	0.06110908	0.1908875	0.10	0.7489
What is your wine consumption frequency? [d. Once every two weeks]	-0.5443403	0.2635972	4.26	0.0389*
What is your wine consumption frequency? [e. Once a month]	0.03669606	0.2560587	0.02	0.8860
Please indicate which gender you are below [a. Male]	-0.4665718	0.4402816	1.12	0.2893
Please indicate which gender you are below [b. Female]	-0.6624847	0.4409961	2.26	0.1330
What would you rate your wine knowledge [a. limited]	-0.5955122	0.2127865	7.83	0.0051*
What would you rate your wine knowledge [b. Medium]	0.15396103	0.163889	0.88	0.3475
What would you rate your wine knowledge [c. Good]	-0.0232745	0.1755197	0.02	0.8945
What generation are you? [a. Millennial 27-42 years]	0.1881818	0.1705279	1.22	0.2698
What generation are you? [b. Gen-X 43-58 years]	0.14642996	0.1911844	0.59	0.4437
Menu Type [phonetic menu]	0.28704334	0.1010513	8.07	0.0045*
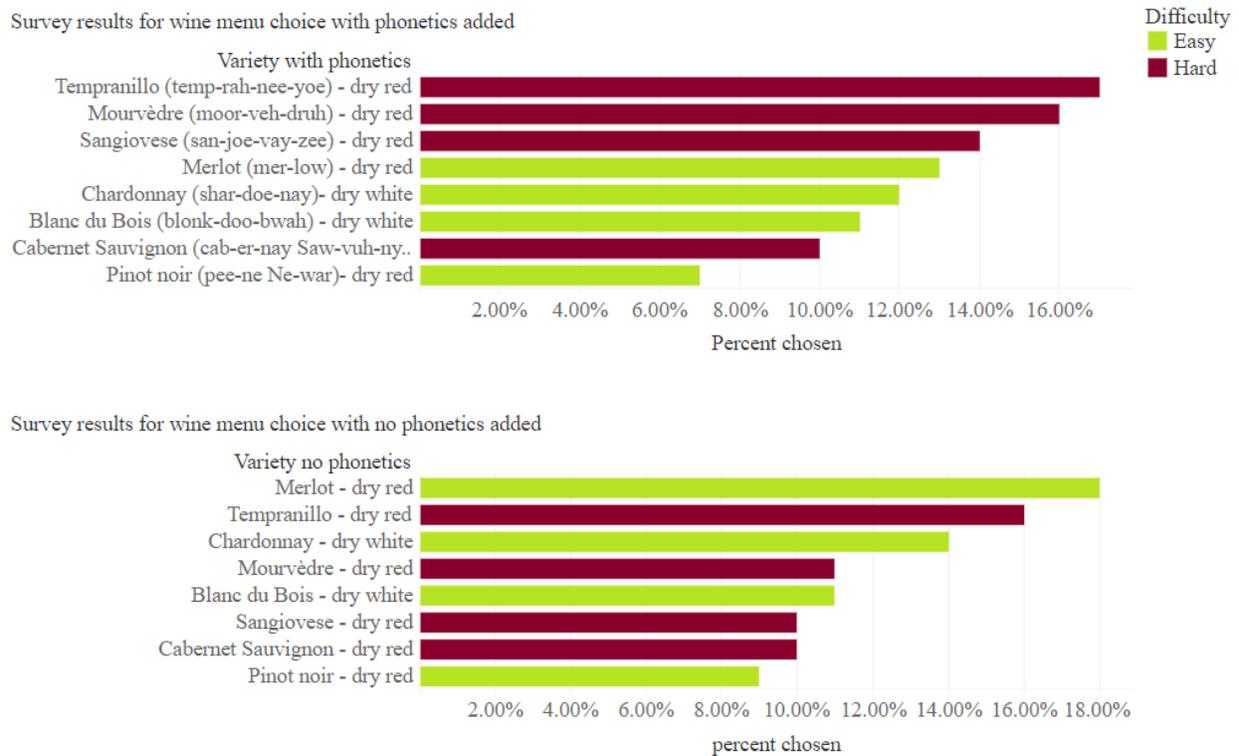
Figure 1. Survey results comparing wine choices between the menu type participant received.

Contingency analysis comparing difficulty of wine ordered to menu type

When examining the Pearson chi-square test outcomes, a bivariate analysis was conducted on two categorical variables: the menu type received and the selection of a hard or easy-to-pronounce wine variety as seen in Table 4. The statistical parameters, including the Likelihood Ratio ($\chi2 = 5.835$, $p = 0.0157*$) and Pearson ($\chi2 = 5.822$, $p = 0.0158*$), demonstrated a significant association. These results highlight a substantial relationship between the menu type and the inclination to choose a hard-to-pronounce wine variety. The consistent significance levels between the Likelihood Ratio and Pearson tests enhance the robustness of our findings, confirming the observed correlation between these categorical variables. This bivariate analysis, complementing the logistic regression results, contributes a further confirmation of the influence of menu types on wine choices within the context of pronunciation guides.

Table 4. Chi-square test results for comparing association between menu type to wine choice.

Statistical Parameter	$\chi2$	Significance Level
Likelihood Ratio	5.835	0.0157*
Pearson	5.822	0.0158*

Count Total % Col % Row %	easy	hard	Total
phonetic menu	93 20.44 43.26 41.52	131 28.79 54.58 58.48	224 49.23
regular menu	122 26.81 56.74 52.81	109 23.96 45.42 47.19	231 50.77
Total	215 47.25	240 52.75	455

Figure 2. Contingency analysis for comparing the association between menu type and wine choice.

Tests were also carried out to determine if there was equal distribution between the menu types for the different categorical variables measured during the survey. This was done for the categorical variables wine consumption frequency, previous hesitancy ordering a wine that is hard to pronounce, gender, self-rated wine knowledge, and generation. For wine consumption frequency, previous hesitancy to order a wine, gender, and generational age, there was equal distribution between menu types.

Analysis of Sales Data From 4 Texas Wineries.
The sales data from the winery underwent contingency analysis to compare the proportion of wines perceived as more intimidating versus less intimidating for customers to order. The chi-square analysis indicated that wineries with edited menus sold slightly more intimidating-to-pronounce wines than those without edited menus, but this difference did not reach statistical significance. The difference-in-difference experimental design allowed for a comparison of the proportion of wines sold before the edited menus were introduced, revealing a consistent, albeit non-significant, difference in the proportion of intimidating-to-pronounce wines sold compared to easier-to-pronounce ones. The field experiment results are challenging to interpret conclusively due to a lack of recorded confounding variables. However, the data suggests no discernible association between customers using a menu with phonetic guides versus one without in a real-world winery setting. Further exploration and detailed considerations for future experiments are discussed.

DISCUSSION

Summary of Findings
No previous studies have investigated whether phonetic spellings on a wine menu can influence a consumer's wine selection. This study aimed to fill this research gap by examining whether phonetic spellings on a wine menu can increase the likelihood of a consumer choosing a more challenging-to-pronounce wine. The study's findings, through nominal logistical analysis, suggest that the presence or absence of phonetic spellings on a wine menu is a factor in determining whether a consumer will choose a wine that is intimidating to say out loud. The analysis revealed

that participants who received a menu with phonetic spellings were significantly more inclined to select a wine that they found challenging to pronounce. The survey results also indicated that respondents rated 3 out of the 4 wine varieties that are easiest to grow in Texas as more intimidating to pronounce than the 3 noble grape varieties of Riesling, Merlot, and Pinot Noir. The third statistical analysis included a contingency analysis where the respondents' wine choice was categorized as either "hard" or "easy" to pronounce and this was compared to the menu type they were given. The analysis revealed that there was a significant difference in the proportion of hard versus easy wines to pronounce between the menu types, and that the respondents given menus with phonetics ordered a hard-to-pronounce wine more often according to the chi-square analysis.

The second part of the experiment looked at real-world sales data from a winery that has four different locations throughout Texas with the same menu offerings at each tasting room. Two of the wineries received edited wine menus during a 6-week experimental period, and two kept their normal menus. The difference in the proportion of hard or easy-to -pronounce wine sales was calculated using contingency analysis to account for the variability in sample sizes. The 6-week experiment period was also compared to the previous 6-week's sales in order to determine if the difference in wine sales proportions existed prior to the new menus being implemented at two of the winery locations.

There were slight differences in proportions between the two time periods. However, when the menu type was used as a stratifying variable between these 2-time frames, there was no significant association between the menu type and the increase in hard-to-pronounce wine sales. Therefore, the increase in purchasing could be due to several factors such as time of year, the demographics of the tourists at the time, the knowledge level of the consumer being higher, and many other factors that were not measured during this field experiment.

Effects of Demographic and Wine-related Factors on Wine Choice
The categorical questions asked in the survey included determining the respondent's age, gender, wine consumption frequency, wine preference, and self-rated wine knowledge. The results indicated that the different types of respondents were evenly distributed between the wine menu type. When using their answers as categorical predictor variables in a nominal logistic model, only wine preference and self-rated wine knowledge were significant wine-related predictors. Due to the large negative effect of having limited wine knowledge (-0.6096277) on the log odds ratio of hard/easy (wine choice) we conclude that the less wine knowledge someone has, the more likely they are to choose a less intimidating wine variety to pronounce.

These results match the findings from (Ellis and Thompson, 2018), which found that consumers who believed they had a high level of wine knowledge were more likely to engage in variety seeking behavior. This kind of behavior entails being more likely to choose unique wines that differ from their typical wine choice. Olsen et al. (2003) found that variety seeking behavior was closely correlated with wine involvement, age, and self-rated wine knowledge; where the more knowledge one considers themselves to have, the more likely they are to be variety seeking in their behavior. The wine consumption frequency and gender did not show significant predictive power in this study's nominal logistic model. However, the self-rated wine knowledge level being a significant predictor was confirmed by these studies which were able to identify groups of consumers with different approaches to choosing a wine based on subjective wine knowledge levels.

A chi-square test was also used to determine if there was any association between what wine variety the consumer chose compared to their self-rated wine knowledge. The test revealed that there is a significant difference in which wine variety someone chose depending on their self-rated wine knowledge. Those with "very good" self-rated knowledge chose Pinot Noir the least

often and Blanc du Bois the most often. This was unlike any other group and this behavior could be linked to the variety seeking behavior previously mentioned because Blanc du Bois was a newer, less established variety when compared to Pinot Noir which is grown worldwide and is one of the noble grape varieties.

Effects of Wine Variety Pronunciation Difficulty on Wine Choice

Cabernet Sauvignon, Sangiovese, Mourvèdre and Tempranillo were ranked the most intimidating to pronounce by the respondents. These results indicate that on average the respondents felt significantly more intimidated saying these names than Chardonnay and Merlot. This could be due to several factors including familiarity with the wine variety, the spelling and length of the name, or the foreign nature of the wine variety. The respondents were all Texas residents, and therefore may not be as familiar with the Italian variety of Sangiovese, or the French variety Mourvèdre. The lack of familiarity can be tied to its foreign nature and the possibility that many Texans may not have heard of any of these varieties before.

Since the previous survey conducted by Texas A&M Agrilife Extension (2021) showed Tempranillo, Sangiovese, Mourvèdre, and Blanc du Bois as the easiest varieties to grow in Texas, it is important consumers begin to feel comfortable saying these names as they will likely only increase in production. As mentioned earlier, the consumer's perception of their knowledge level does play a role in their selection of challenging-to-pronounce wine varieties. However, their choice may also be influenced by their familiarity and understanding of the lesser-known variety. They might now feel more comfortable ordering it as they have gained some understanding of how to pronounce it.

Effects of phonetics on wine choice

Since respondents wished to avoid appearing less knowledgeable about wine in front of their peers, phonetic spellings helped them feel more comfortable ordering a difficult-to-pronounce wine, thus reducing the possibility of negative perceptions of their wine knowledge. This supports the previous findings from Goldfarb et al. (2015) that consumers aim to avoid negative social judgment during purchasing situations. It also adds to the findings from Ritchie (2007), who concluded wine purchasing behavior depended on the situation, and that restaurants were far more stressful for consumers purchasing wine than a grocery store type environment. Consumers in these studies may be feeling a type of social pressure to impress their peers and avoid embarrassment at the same time.

The field experiment revealed that adding phonetics to wine menus did not increase sales for hard-to-pronounce wine varieties. The results are ambiguous due to some external factors not being measured such as the weather that day, holidays, as well as the demographics of the customer purchasing the wine. The feasibility of measuring these variables was difficult during the 6-week time period and therefore no conclusions can be drawn from the data that could significantly associate the use of phonetics on this particular winery's menus and an increase in hard-to-pronounce wine variety sales.

Implications and Recommendations

The analysis of the phonetics survey data revealed intriguing connections between the type of menu provided to respondents and their ultimate wine selection. By controlling for external factors such as price, an extensive wine menu, and detailed wine descriptions, any shifts in the choice of wine—whether difficult or easy to pronounce—can be attributed to the sole variable that differed between the menus: the inclusion of phonetic pronunciations.

Also, by being able to directly correlate the respondent's demographic data, self-rated wine knowledge, and wine preferences, as predictor variables for their wine choice, any differences that are significant predictors can be compared to the menu type as a predictor. Based on the menu type being a significant predictor in the survey, the findings of this research suggest potential implications for wineries and restaurants that offer a diverse selection of wine varieties. Implementing phonetic pronunciations on menus could prove advantageous for such establishments. By providing phonetic guidance, these venues can create a more welcoming atmosphere for their target audience, enabling customers to feel more comfortable exploring unfamiliar wines. This, in turn, can contribute to an expansion of their wine knowledge and promote a willingness to try new and diverse wine options.

The implications are particularly relevant for wineries in Texas, where the cultivation of certain wine varieties is still being popularized. By facilitating the pronunciation and understanding of these lesser-known varieties, wineries can potentially experience economic benefits. Specifically, Texas wineries could witness an increase in sales of varieties that are well-suited to the region's climate, such as Blanc du Bois and Mourvèdre. Since these varieties require fewer resources to grow while maintaining high quality, they offer cost-effective options for winemakers and growers. Moreover, the production of wines from these favorable varieties implies an inherent quality, which can positively influence consumer perceptions. As individuals sample these high-quality Texas wines alongside more familiar options like Riesling and Pinot Noir, their overall perception of Texas wines may improve. Consequently, this could generate increased word-of-mouth recommendations for Texas wine varieties and contribute to the growth of the Texas wine industry.

Limitations and Future Research

The survey through M-Turk was able to gather specific demographic and wine preference data from Texas wine consumers. Since the survey was limited to Texas residents, the results may not be applicable to other wine regions where the consumer base has different knowledge levels and preferences. The wine varieties that were deemed hard-to-pronounce through the survey's ranking system are also limited to this sample of respondents. There is a need to conduct a broader survey throughout the state of Texas focusing on what wine varieties consumers feel are intimidating to pronounce from a more expansive list. It would also be beneficial to measure their familiarity with these wine varieties in order to ascertain if a correlation exists between intimidation and unfamiliarity.

A more extensive and carefully executed field experiment would provide valuable insights into the perceived usefulness of a phonetic pronunciation guide and its influence on customers' wine purchasing decisions. To address potential biases, a unique experimental design is required, considering the need to avoid direct questioning of customers regarding menu changes, which may reveal the experimental nature of the study. Despite these challenges, conducting an experiment that explores how customers are influenced in a real-world purchasing situation holds significant benefits.

A longer duration for the field experiment would allow for a more comprehensive understanding of customer behavior and preferences. The proposed future approach involves using the phonetic pronunciation guide in the existing menu of a winery, wine bar, or restaurant, giving the customers a chance to encounter and engage with the guide without explicit awareness of its purpose. This covert strategy aims to ensure that customers' decisions remain authentic and uninfluenced by their knowledge of being observed. Throughout the experiment, careful observation would be conducted to capture instances where customers consult the phonetic pronunciation guide while selecting wines. The objective would be to examine whether customers

who have the guide show a preference for ordering specific wines compared to those who do not have the guide. It would be difficult to assess co-variables such as wine preferences, knowledge levels and experience in wine without surveying each customer in a direct method that would then need to be tracked with their wine order.

To reduce potential biases, a randomization technique could be employed. Different versions of the menu, with and without the phonetic guide, would be presented to customers in a randomized manner. This random allocation ensures that customers encounter both scenarios, enabling a robust comparison of their purchasing decisions and perceptions. Additionally, a sizable sample size and consideration of diverse demographic factors would enhance the reliability and generalizability of the study's findings. Undoubtedly, this field experiment presents its own set of challenges. However, its potential to yield valuable real-world results on the influence of a phonetic pronunciation guide on customers' wine purchasing decisions could be worth the large undertaking in the future.

CONCLUSION

The existing literature on wine consumers is substantial; however, no prior research has explored the impact of difficult or intimidating-to-pronounce wine names on consumer purchase behavior. Few studies have specifically investigated the unique preferences and behaviors of Texas consumers, necessitating targeted marketing efforts for this demographic. The present study aimed to explore whether the inclusion of phonetic spellings on wine menus could influence customers' wine choices in Texas.

The exploratory survey and field data analyses were employed to determine whether phonetic spelling could alleviate consumer anxiety when ordering wine varieties commonly found in Texas. The survey exclusively targeted Texas consumers and examined associations between their knowledge levels, preferences, gender, and final wine choice. The results indicated that respondents were significantly more inclined to choose wines with difficult-to-pronounce names when presented with menus containing phonetic spellings, which could mean that consumers have a strong desire to appear sophisticated or highly knowledgeable in winery/restaurant settings. Future studies could expand on this research by analyzing other menu factors that influence consumers' decision-making processes, as well as the role perceived sophistication has in this process.

Interpreting the field experiment was challenging due to various untraceable confounding factors during the study. Although there was a difference in the sales of hard-to-pronounce wines between venues with edited menus and those without, this difference was evident even before the change in menu. Therefore, it raises the question of whether the variance was attributed to the menus or factors such as location, customer demographics, the winery's staff, and their level of training/attitudes towards the consumer regarding the menus. Factors like different regional demographics and tourism levels may have influenced wine sales levels, warranting further research to ascertain the actual impact of phonetics on menus in real-world purchasing situations.

Given the significant differences observed in the survey analysis, it is essential for winery and restaurant marketing teams to consider implementing phonetic spellings in their menu design. The potential benefits of making customers feel more at ease when ordering specific wines could have broader positive effects that were not fully captured in this study. The consensus is that the survey respondents were notably affected by this change and considering the current focus on less popular wine varieties in Texas, wineries would be forward-thinking in adopting this alteration in their menus.

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