

WHY WHICH WINE

**AN EXPLORATIVE STUDY ON WINE CUES AND SWEDISH
WINE CONSUMERS' DECISION-MAKING**

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Why Which Wine: An Explorative Study on Wine Cues and Swedish Wine Consumers' Decision-making

Abstract:

The thesis studies Swedish consumers' decision-making when they select a bottle of wine. We use literature on decision-making as responses to cues as framework investigate the impact of four wine-related cues, namely country of origin, price, organic and grape variety. We collect data through an online survey, administered in two Facebook communities of Swedish wine consumers. The survey contains wine profiles that consist of different combinations of the four cues. Respondents select which wine profiles they would buy in such a hypothetical purchase scenario. We further test respondents' wine knowledge in a quiz and subsequently divide them into three knowledge groups based on their scores. We use the responses and knowledge groups in a conjoint analysis, to establish the relative importance of the different cues in consumers' wine selection and the differences between groups. We find that country of origin is the most relevant cue to consumers' selection, followed by organic, and that price has a concave utility function in the aggregate of consumers. Contrasting the different knowledge groups, we find that organic is more relevant to less knowledgeable consumers' selection than to that of knowledgeable ones. We also see differences in consumers' responses to prices, where less knowledgeable consumers respond more favorably to lower prices, whereas the opposite is true for knowledgeable ones. Our results generally compare with previous studies on non-Swedish wine consumers, but the knowledge distinction between consumers gives rise to slightly novel perspectives on responses to wine cues.

Keywords:

Wine, Cues, Conjoint Analysis, Consumer Decision-making, Knowledge

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1. Introduction

1.1. Alcohol in Sweden

Sweden has a complicated relationship with alcoholic beverages. Sweden's state monopoly on alcohol, Systembolaget, was established in 1955, after more than a century of opposition toward the extensive consumption of hard liquor among the Swedes (Systembolaget, 2020). Systembolaget has since been the only retail store in Sweden to sell beverages above 3.5% alcohol, conducting its business with consideration for people's health, without making profits (Ibid.). Still, only 67% of Swedes' alcohol consumption is bought at Systembolaget (Ibid.). Swedes import alcohol when visiting neighboring countries where it is more liberally available, and they drink at bars and restaurants. Lately, Swedish wine clubs have begun importing and delivering wines home to consumers after the 2007 "Rosengren sentence" ruled that such imports would be legal (Högsta domstolen court case C-170/04 sentencing 2007-06-05). This is a growing wine market (Lindberg, 2020), where sellers can adjust their businesses to consumer preferences to make profits. The market is almost entirely digital, with consumers ordering wine from the websites of such wine clubs. There also exists a marginal black market and some moonshine production. Systembolaget nonetheless maintains extensive control over the alcohol that Swedes consume.

Systembolaget procures beverages with the intention of delivering to customers what they demand, while also offering breadth in its supply (Systembolaget, 2020). Procurement is conducted through blind tasting by experts to identify which products match Systembolaget's orders. No producer, brand or supplier receives preferential treatment. Consumer-facing prices are set by Systembolaget's suppliers, and Systembolaget has a fixed add-on price on all items (Ibid.). Since Systembolaget carefully selects its supply with its customers in mind, it is relevant to establish what consumers in fact want.

1.2. Wine and the Problem Area

1.2.1. The Market for Wine

Systembolaget reports that among alcoholic beverages, Swedes today consume wine the most, totaling at 42.7% of consumption. Simultaneously, young Swedes drink less than ever before (Systembolaget, 2020), which could mean that the overall alcohol market will shrink as the youth grows up. As mentioned, the little competition that Systembolaget faces primarily relates to wine, from online wine clubs. Hence, wine is, and will likely remain, Sweden's primary alcoholic beverage, in an overall market with limited growth potential. It is therefore important to understand what motivates Swedish consumers in their wine purchases, especially to wine clubs, to Systembolaget's

suppliers as well as to international alcohol producers, who run small profit-seeking businesses; but also to Systembolaget, who seeks to offer customers what they want and whose existence is a political question that depends on public support. Should Swedes be displeased with or circumvent Systembolaget, its mission to consider people's health could be undermined. By better understanding its consumers, Systembolaget can improve their experiences, which would strengthen its reputation.

1.2.2. The History and Nature of Wine

To understand wine retail, one must realize that it is a complex field. Wine is a complex good, with a rich history that goes back for millennia. The ancient Hellenistic culture famously worshiped Dionysus as the god of wine. The Romans embraced that tradition and spread viticulture to the imperial provinces in France, which many consider the cradle of wine today (Systembolaget, 2020). From the *Old World* – France and other European countries – wine production spread during the ages of exploration and colonialism to the *New World* – the Americas, Australia and South Africa. To this day, wine is typically categorized as *Old World* or *New World*.

French viticulture is based on the concept of *terroir*, i.e. “land” or “terrain”, which represents certain environmental characteristics – climate, soil etc. – specific to a geographical area. Thus, wine produced in a given *terroir* cannot be replicated elsewhere. This idea has given rise to the French system of appellations (*appellation d'origine contrôlée*) that now exists in most wine-producing nations. For instance, Champagne can thus only be produced in that region, whose *terroir* is unique (Tanzer, 2010).

Adding to the various geographies of wine, it is also made from a plethora of different grape varieties, described in renowned wine critic Janice Robinson's *Complete Guide to 1,368 Vine Varieties, including their Origins and Flavours* (2012). Grapes are also a parameter by which Systembolaget and online retailers sort their wines. Grape varieties have different biological properties that give rise to different sensations. They are typically used for either white or red wine. Some, like German Riesling, are intimately linked to certain regions; and others, like Cabernet Sauvignon, are grown and used all over the world.

The rich tradition in viticulture enables immense variation in the supply offered to consumers, so it is difficult for them to know which product best matches their preferences (Bruwer et al., 2013). While social elements or prestige can be sought in a wine, what consumers often desire is the sensual experience (Bruwer & Alant, 2009), i.e. taste, which can be hard to infer from overwhelming product information. In Sweden, consumers cannot taste a wine at Systembolaget prior to buying it, which adds to the complication. Therefore, consumers must often rely on cues, i.e. certain bits of

information, to make their product selections; cues are thus interpreted as signals of quality and taste (Jover et al., 2004).

With the extensive variation in wine, there are likely great differences in consumers' levels of wine knowledge. One can suspect that consumers behave differently depending on how knowledgeable they are about wine. One who is aware of the properties of different grape varieties could in theory rely on grapes as cues about the quality of a wine, whereas another who cannot tell a Riesling wine from a Cabernet Blanc wine could not tell the two bottles apart based on grape variety alone, and would therefore look for other cues.

The complexity of wine is summarized by McCutcheon et al. (2009) in four points that are applicable in the Swedish context too:

- 1) There are many producers competing for shelf space (at Systembolaget and online).
- 2) Wine is a product of agricultural nature which causes a lack of dependable and consistent high-quality supply.
- 3) There are complicated brand hierarchies and many different cues on the label that can influence decisions.
- 4) There exists unique consumer behavior in the wine category.

1.3. Research Questions

These complex preconditions for consumer purchases combined with the complex nature of wine, which consumers are aware of to varying degrees, lead us to pose the following research questions:

- *Which types of information influence Swedish consumers' wine selection?*
- *How do information influences vary depending on how knowledgeable about wine consumers are?*

1.4. Scope and Ethical Considerations

Limited time and the formal requirements of a bachelor thesis forced us to restrict the study in some practical ways. We chose to only explore red wine in 750 milliliter glass bottles. While other types of packaging are common, glass bottles are the traditional way that wine is packaged. We limited ourselves to one color because red and white wine are two closely related yet distinct products (Section 3.1), sold in different sections at Systembolaget or on different pages of a website. Wine drinkers will know that specific types of food should be matched with a certain color of wine. Most wine that Swedes consume is red (Systembolaget, 2020), hence consumers are more likely to be knowledgeable of and susceptible to this product. We also limited our research to only

include four cues. The reason was mainly statistical (Section 3.3) but allowed for extensive data collection. We were not able to explore interactions, that is the joint effect of multiple cues, although cues potentially influence consumers in tandem.

Furthermore, our research questions stipulate a focus on Swedish consumers in general, which allowed us to rely on robust data from Systembolaget about Swedes' wine consumption. However, the thesis specifically studies members of two of Sweden's largest non-exclusive Facebook communities for wine consumers that we joined. Combined they had approximately 4,000 members in March 2020. The groups consisted of wine consumers with varying degrees of involvement and knowledge, although presumably very few disinterested occasional buyers of wine. While Facebook tends to exclude the older generations of society, it ensures access to many people from different places in Sweden and of different backgrounds. This target group allowed us to gather data that we consider rather reliable, since we asked them to actively reflect on their wine selections, which is something they would regularly and happily do.

Throughout the process, we considered that, in Sweden, alcohol generally has somewhat of an ethical connotation (IQ, 2019). Some people may regard questions about drinking habits as sensitive and personal, and one could argue that an alcoholic would be triggered if exposed to our study. We therefore approached this exploration with discretion, studying existing members of wine communities, who would be prepared to receive wine-related information, and wholly anonymously. We did not emphasize alcohol per se, but other cues, throughout the entire process. All gathered data were handled confidentially.

1.5. Research Gap and Contribution

Wine production and consumption are respectable fields of research internationally. For instance, there is the *American Association of Wine Economics* and France has its *Institute of Vine and Wine Science* at the University of Bordeaux. Research has, however, paid limited attention to Swedish consumers, which we believe partly stems from the regulated nature of the Swedish market and the relatively small number of consumers. Some scholars have explored the nature of wine reviews (Ansgariusson & Bui, 2013); and their impact on Swedish demand (Friberg & Grönqvist, 2012); whereas others have investigated attitudes towards Systembolaget's monopoly (Bernström & Lindholm, 1995). Systembolaget does conduct some research – mainly on health and climate issues related to its products. This study will fill in the gap of research into Swedish consumers' wine preferences, which is interesting, seeing as wine is cementing its position as Swedes' favorite (alcoholic) beverage and as Systembolaget only quite recently was exposed to some competition from online wine retail.

1.6. Disposition

In the subsequent sections of our thesis, we begin by establishing a theoretical framework for our study, including wine cues as information and consumer decision-making. We then present our method in Section 3, including interviews with professionals in the wine industry and design of our quantitative study. The empirical results are presented in Section 4, followed by a discussion and conclusions in Section 5.

2. Theoretical Framework

2.1. Cues in Wine Consumption

We begin exploring which cues impact consumers' wine choices by reviewing previous studies on consumer decision-making and wine. We intend to identify relevant cues and apply a psychological framework to theorize how those cues impact consumers.

According to Berger and Fitzsimons (2008), the modern consumer is “exposed to a seemingly infinite number of cues”. The retail environment is certainly no exception, particularly among homogenous goods, which wine can appear to be in retail settings. So, “to choose a wine, consumers examine the products' attributes as part of a risk-reduction strategy” (Lacey et al., 2009). Consumers will then turn to risk-reducing cues to make their choices. Among the many wine-related cues, Olson and Jacoby (1972) distinguish between intrinsic and extrinsic cues. Intrinsic cues are inherent to the product itself and cannot be changed without altering the very composition of the product. Extrinsic cues are those that consumers perceive as related to the product but are separate from its physical composition. Table 1 features some typical wine-related cues:

Table 1. Intrinsic and extrinsic cues of wine (Jover et al., 2004)

Intrinsic cues:	Extrinsic cues:
<ul style="list-style-type: none">▪ Age▪ Harvest▪ Alcohol content▪ Varieties (of grape)▪ Taste▪ Aroma▪ Color	<ul style="list-style-type: none">▪ Region (of origin)▪ Reputation▪ Appellation▪ Advertising▪ Distribution channels▪ Bottling and labeling▪ Brand▪ Price▪ Organic certification¹

Olson and Jacoby (1972) suggest that consumers generally ascribe more salience to intrinsic cues when it comes to quality evaluation, but as stated, taste can be evaluated only after the purchase. Not surprisingly, Bruwer et al. (2017) found in their study of Canadian wine consumers that they emphasize extrinsic factors more during purchase.

¹ We have added organic to the original list.

2.2. Cues in Previous Research

Previous research on non-Swedish consumers has investigated the impact of different cues on consumer wine preferences quite extensively. Lookshin and Corsi (2012) examined and compiled all major research on the topic between 2003 and 2012. They identified repeated findings on the effect of several major cues. The most relevant cues for consumers' decision-making were geographic origin, price, grape variety and brand. They also showed that consumers tend to be willing to pay more for eco-friendly products. Another interesting finding was the distinction in consumer behavior between experienced wine drinkers and more novel consumers.

2.2.1. Region and Country of Origin

Seeing as consumers tend to rely more on extrinsic cues when evaluating products, origin often acts as a guiding cue. Studies have identified country of origin as influencing consumers' evaluation of quality, performance, style, appearance and price estimates, which also makes them willing to pay more for wines from their preferred countries (D'Alessandro & Pecotich, 2013; Mtimet et al., 2006; Skuras & Vakrou, 2002). Region, and country of origin by extension, are important driving cues, providing perception of location reputation and quality. A region's importance to consumer choices has been found enhanced when appropriately combined with other cues such as grape variety, price, or brand (Felzensztein & Dinnie, 2006). It has also been determined that consumers with higher purchase involvement put more weight on the region than low-involvement consumers, who emphasize price more (Hollebeek et al., 2007).

2.2.2. Brand

Brand is an interesting concept, as one wine may have several brands – the label, the origin and the grape variety can all be described as separate brands (Gluckman, 1990). Having a well-known label has been found to improve the likelihood of consumers' purchases, mainly at lower price levels (Lookshin et al., 2006). In an analysis of price data from the US market, Schamel (2006) found label brands to be especially relevant to New World wines, in order to charge similar prices as Old World equivalents. Overall, label brand seems to be particularly relevant in the champagne context (Lange et al., 2002).

2.2.3. Price

Price has been found to be one of the driving factors when consumers purchase wine (Keown & Casey, 1995). McCutcheon et al. (2009) found price to be the second-most salient cue for Australian consumers' choices after quality (which again cannot be evaluated directly) in a questionnaire. Previous research has found that price has a

concave utility function, that is, mid-range prices increase the likelihood of a purchase relative to the lower and higher prices (Mtimet et al., 2006). Furthermore, price has been found to be more important for decision-making among low-involvement consumers than high-involvement ones (Lookshin et al., 2006).

2.2.4. Grape Variety

Grape variety was found to be a slightly significant cue in a purchase simulation survey, behind several other cues (Mtimet et al., 2006). The authors related this finding to the emergence of the “New World marketing strategy” based on well-known varietal wines, such as Argentinian Malbec wines. Furthermore, consumers tend to infer the same status to grape variety as they do brand name (Gluckman, 1990). They have also shown to develop knowledge, to a varying degree, of brand repertoire, which is a collection of attributes such as grape varieties and regions of origin (Ibid.). This is understandable, as individual grapes are often associated with certain regions and make up a part of a total product from that region, e.g. the Portuguese Alvarinho.

2.2.5. Eco-friendly and Organic

Mann et al. (2012) found that organic certifications were a moderately significant attribute, but less so than e.g. price and origin. Also, those consumers who perceive organic wine as being healthier and are more likely to consume it were found to be urban female consumers. Consequently, producing and marketing wine with eco-friendly attributes can be effective to signal quality to consumers, where being both local and organic was found to be the most effective (Ibid.). Schäufele and Hamm (2017) established in a literature review that marketers, retailers and producers benefit from focusing on environmental aspects in campaigns, as it increases consumers’ knowledge of eco-friendly wine production and thus leads to influencing purchase behavior. Climate change has risen on the political agenda everywhere recently. Since the head of the global climate movement, Greta Thunberg, is Swedish, eco-friendly should be as, if not more, relevant in the Swedish context.

2.2.6. Other Cues

In a web survey with 527 participants reviewing different conceptual wine labels, Sherman and Tuten (2011) found that consumers prefer traditional labels and names to less conventional ones. When it comes to wine reviews, positive to neutral reviews seem to have a positive impact; Friberg and Grönqvist (2012) found that simply being reviewed was itself seen as a quality indicator. Negative reviews had no significant negative impact on demand in that study, while positive reviews impacted more expensive wines more positively. However, a complicated aspect of reviews is that in order to influence consumers’ purchases, they must be exposed to a review before purchasing the product, which cannot always be ensured (Ibid.).

2.3. Consumer Knowledge

In D'Alessandro and Pecotich's (2013) study, they noted that the response to cues seems not to be uniform among all consumer segments; experts were more capable than novices of describing and evaluating the complex qualities of wine. In a Hong Kong study on the effects of cues, including taste, on consumers' willingness to pay, Lee et al. (2018) grouped consumers into expert and novice categories based on the frequency of wine consumption and the subjects' prior wine experiences. They found that novice consumers had a strong response to extrinsic cues when evaluating wine that experienced wine consumers did not base their evaluations on. We therefore expect to discover a discrepancy in consumers' responses to the same intrinsic or extrinsic cues.

2.4. Judgement and Decision-making

To understand how the relevant cues impact consumers, we need a theoretical framework for judgment and decision-making (JDM). Goldstein and Hogarth (1997) have described the development of JDM research as stemming from “two foci of early research”. One focus was put on people's course of action and rationality, whereas another focus was put on people's ability to integrate multiple cues to form a probabilistic judgment. For the purposes of this thesis, we will apply the latter JDM focus to our framework of wine cues, which leads us to Brunswik's lens model. For a comprehensive understanding of JDM research, we recommend Goldstein and Hogarth (1997).

2.5. Brunswik's Lens Model

Egon Brunswik was one of the most influential psychologists of the 20th century, whose *lens model* describes people's decision-making as reliance on cues in specific environments (Dhami et al., 2004). He suggested that objects “stimulate a person's sensory organs to produce multiple cues to the object's identity and properties” (Goldstein & Hogarth, 1997). The cues are, therefore, created and construed by the person, depending on the object in question and its surrounding environment. The cues are fallible representations of the object itself, but they provide guidance to the person in environments of uncertainty (Ibid.). Simplified, the cues represent probabilities of the object's identity and properties – the higher the probability that a cue signals a desirable identity, the likelier the person is to use the cue for decision-making. The *lens model* is depicted in Appendix 1. We recommend Goldstein and Hogarth (1997), Wolf (2005) and Dhami et al. (2004) for more detailed readings.

Applying the *lens model* to wine purchases, we suggest that the cues identified above serve as probabilistic indicators of quality or taste. Because the purchase situation is highly uncertain, consumers may interpret different cues (country of origin, price etc.)

as more or less trustworthy. This allows them to discern which product has the highest probability of meeting their demands based on several cues. Consumers with different levels of knowledge about wine will likely interpret cues differently, since the same purchase situation is less uncertain to a more knowledgeable consumer.

2.6. Gigerenzer's Fast-and-frugal Heuristics

Gert Gigerenzer (2018) has an alternative theory of decision-making, namely fast-and-frugal heuristics, i.e. rules of thumb, in situations of uncertainty. It requires that a person classifies objects into categories based on the differences in which cues they possess, and then makes a judgment based on that distinction (Raab & Gigerenzer, 2015). The person may always revert to such heuristics whenever the situation is uncertain.

So instead of forming probabilistic judgments about the quality of different wines, consumers may look for specific cues and use them as heuristics for their decisions. Imagine a consumer using country of origin to decide; it is by categorizing wines by their origin that the consumer distinguishes between the otherwise similar products, and then decides by opting for say Italy and ignoring Spain. Wine knowledge will likely mediate which cues consumers use as heuristics, since more knowledgeable consumers will have a better understanding of which cues are more reliable.

2.7. The Context of Wine Consumption

Both the *lens model* and Gigerenzer's heuristics depend on the consumer's context. Wine is primarily a hedonic product for sensual pleasure (Bruwer & Alant, 2009). Therefore, consumers will typically interpret cues as indications of quality in terms of taste. Wine is also a social product (Ibid.), in the sense that it is often enjoyed in the company of others. The company in which one anticipates consuming a bottle of wine is relevant to the purchase decision. If a consumer is meeting a Spanish friend, they may be more likely to buy Spanish than Italian wine. Hence, the context in which the wine is consumed will affect how consumers respond to cues.

2.8. Studying Wine Cues

Studies related to consumer decision-making and wine cues follow different methodologies. There are sensory experiments (Lee et al, 2018), as well as quantitative analyses of sales data (Schamel, 2006). We found several simulations, where subjects were asked to review conceptual wines with various cues, typically by selecting the preferred one from several different wines (Mtimet et al., 2006; Gil & Sánchez, 1997; Appleby et al., 2012; Sherman & Tuten, 2011; Lookshin et al., 2006). This method is called *conjoint analysis* and estimates respondents' utilities of all featured cues. This

method only allows for testing a few cues, but it captures consumers' trade-off assessment of products with similar attributes.

2.9. Application of Theory

Thus, we present our theoretical model in Figure 1 below. We propose that a wine signals intrinsic and extrinsic cues that consumers interpret (probabilistically) to form a response by selecting or ignoring the wine. Consumers' wine knowledge mediates that response. Table 2 presents the studies discussed in Section 2.2 and the cues they suggest positively influence consumers' wine purchases. Because of the large number of wine cues, studied in non-Swedish contexts, we interviewed three professionals in the Swedish wine market (Section 3.1) before specifying which cues and subsequent influence on Swedish consumers' wine selection to study.

Table 2. Studies suggesting positive influence of cues on consumers

Influential cues:	Studies:
Origin (country or region)	D'Alessandro & Pecotich (2013); (Hollebeek et al. (2007); Felzensztein & Dinnie (2006); Mtimet et al. (2006); Skuras & Vakrou (2002)
Brand	Lookshin et al. (2006); Schamel (2006); Lange et al. (2002)
Price	McCutcheon et al. (2009); Lookshin et al. (2006); Mtimet et al. (2006); Keown & Casey (1995)
Grape Variety	Mtimet et al. (2006); Gluckman (1990)
Organic	Schäufele & Hamm (2017); Mann et al. (2012)
Label	Sherman & Tuten (2011)
Reviews	Friberg & Grönqvist (2012)

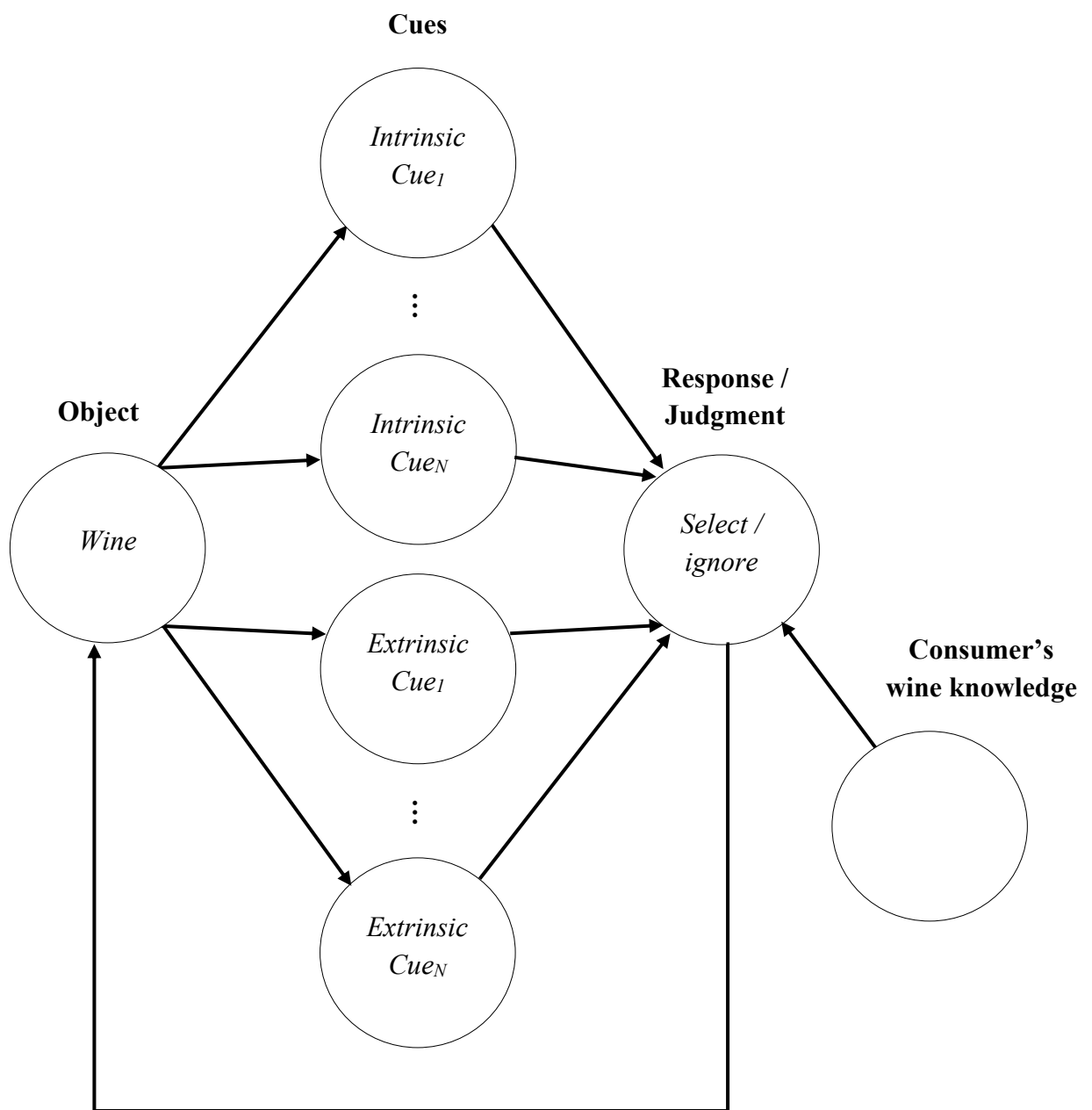


Figure 1: Model of consumer selection of wine based on responses to cues

3. Method

The main study consisted of an online Qualtrics survey, inspired by the quantitative conjoint analysis by Mtimet et al. (2006). This can be considered a deductive approach, based on our theoretical framework (Bryman & Bell, 2011). The survey was administered in two Facebook communities of Swedish wine consumers. It asked respondents to select wines in a hypothetical purchase scenario, followed by a quiz designed to establish how knowledgeable the individual respondents were about wine. Before conducting the main study, we had to select which cues to include.

3.1. Interviews

Our theoretical framework begs the question which cues most influence Swedish consumers' wine selection. To gain a better understanding of the Swedish consumer market for wine, we interviewed three knowledgeable professionals in the wine industry (Appendix 2).

Interviewee 1 is a marketer, working at a wine club that imports wines from smaller vineyards all over the world. The wines are quite pricey, and the customers consist mainly of middle-aged people with large incomes and a notable interest in wines.

Interviewee 2 is a sommelier by training and works as a buyer at Systembolaget since approximately ten years. He procures wine as well as many other products.

Interviewee 3 runs a wine import firm, which imports mid-range to high-end wine labels mainly from the Old World and sells to Systembolaget as a certified *upplagshavare* ("store of excise goods").

These interviews gave us some interesting perspectives on which cues seem relevant to Swedish consumers, most notably country of origin and price. We were told that the major wine countries (Italy, France etc.) were quality indicators, if consumers knew little else about a product. Price was said to indicate quality too, while Swedish consumers were also described as price sensitive. Interviewee 2 told us what Systembolaget does in terms of promoting organic and eco-friendly consumption (though not promoting specific organic beverages), which suggested to us that consumers would respond favorably to organic wines. The interviewees differed on grapes; the average consumers were thought not to care significantly about specific varieties, but Interviewee 1 suggested that wine enthusiasts tended to be interested in different grape properties. Other potentially influential cues were vintage, district and prior familiarity.

All interviewees suggested that consumers with different levels of wine knowledge may base their decisions on different cues – grape variety being one such difference. All three also confirmed that red and white wine are typically distinct, and that Sweden is primarily a red wine-drinking nation.

3.2. Selection of Cues to Study

The wine-related cues we chose to explore were country of origin, organic, price and grape variety, the latter being an intrinsic cue and the remaining three extrinsic ones. From our interviews and previous research (Section 2), we could conclude that all four cues had the potential to influence consumer decision-making. Moreover, Systembolaget and other wine actors sort wines by country of origin and price. Systembolaget also marks organic wines with a green label, which makes them stand out. These three cues are thus an inherent part of the framing that Swedish consumers are exposed to, and therefore interesting to explore. Grape variety was not as obvious to feature in our exploration, since our interviews indicated that most wine consumers have limited knowledge of grapes. However, the fact that consumers' wine knowledge seemed to mediate their responses to grape variety made us interested to explore its influence on wine selection. Indeed, the two Facebook wine communities we joined showed a tendency to discuss certain types of grapes as desirable attributes.

We had to limit ourselves to four cues, since we would perform a conjoint analysis (Section 3.3). We therefore chose not to include vintage, district and brand etc. From our interviews we found wine districts to be very specific, corresponding to personal experiences. Districts are often associated with a certain type of wine, whereas the variation within an entire country may be great. Someone might adore Amarone wines and another love Rioja, although neither would necessarily distinguish between Italian and Spanish wines at large. Vintage is also specific and varies over time. 2016 could be a fine year for one wine today and not indicate quality for another wine today or the same one in a year. This would make it difficult to test. While brands very well could have an impact on consumer choice, Systembolaget gives no preferential treatment to brands (Section 1.1), and Swedish jurisdiction restricts marketing of alcoholic beverages (Konsumentverket, 2019), ergo brands are downplayed to Swedish consumers.

After having settled on the four cues, we selected internal variations of those cues. When it came to organic, the choice was easy as a wine would be either organic (receiving Systembolaget's green label) or non-organic. Concerning the three remaining cues, the situation was different. We sought countries of origin that could be compared in a purchase scenario – most consumers would for instance hardly compare obscure Swedish wines with Italian wines. Similarly, not all price ranges would be comparable, whereas grape varieties are often specific to specific types of wine and regions. We sought a setup that could be considered *ecologically valid*, meaning realistic cue

variations, given a typical purchase situation (Bryman & Bell, 2011; Dhami et al., 2004). We therefore used Systembolaget's own sales data, published by country and price on a quarterly basis, to select the variations in country of origin and price. Despite seasonal variation, we could discern certain patterns. We used recent years' data (Systembolaget, 2020) and found that Italian wines tended by far to be sold the most, followed by French, Spanish and South African. Among the top fifteen countries, those around the number ten spot would also be consistent, such as Argentina, Portugal, Chile and Bulgaria. We sought to attain variation in our cue setup, while maintaining *ecological validity*. We therefore featured two countries that would always sell among the highest, and two that would consistently sell a lot of wine, but not quite as much as e.g. Italy. We also considered the distinction between the Old and New Worlds. Hence, we opted for Italy and South Africa, as two major wine-selling countries – from the Old and New World respectively – and Bulgaria and Argentina, as two consistent, but more modest wine-selling countries, also from the Old and New World.

When considering prices, we could not necessarily compare with similar, foreign studies. For instance, Spain (Mtimet et al., 2006) has much local wine production, no state monopoly and a different alcohol VAT system than Sweden. We therefore looked at Systembolaget's price ranges and found that two were sold to a roughly equal extent – the 70-79 SEK and 90-99 SEK brackets (Systembolaget, 2020). Seeing as consumers with different levels of involvement would likely differ in their willingness to pay for wine *ceteris paribus*, we wanted to test one of those ranges and then add price variation upwards. Interviewee 1 expressed a concern that his consumers would have – namely that they would scarcely acquire a wine of anticipated quality at prices below 120 SEK. He told us that wines have high quality between roughly 120 and 160 SEK. Still, prices can indeed exceed 160 SEK substantially, which led us to select one bracket below 160 SEK as one price level to test, and as well as one above. We wanted to have prices differ by the same amount, to avoid any perceptual distortion. The final prices were: 99 SEK, 149 SEK and 199 SEK.²

Our final cue, grape variety, was rather easy to settle on, once countries of origin had been selected. We needed common varieties (meaning they are not associated with only one kind of wine) and grown in all four countries. A knowledgeable consumer would notice if we paired a grape with a country where it is not grown, which would affect their answers. Three suitable grape varieties were identified: Cabernet Sauvignon, Merlot and Syrah.

We wanted to display the selected cues in different combinations to respondents in a hypothetical purchase scenario, where they would react to the cues by selecting or ignoring the corresponding cue combinations. We therefore constructed a conjoint setup. We tested the setup on ten people before the main study (Appendix 3).

² US\$1 and €1 equaling 9.88 and 10.70 SEK respectively, May 5, 2020.

3.3. Main Method: Conjoint Analysis

Drawing on inspiration from previous studies by Mtimet et al. (2006), Gil and Sánchez (1997) and Appleby et al. (2012), we conducted a conjoint analysis to study how different wine cues affect consumers' wine selection. Conjoint analysis is a multivariate method, often used in new product development (Hair et al., 2014). It is a useful method because it allows testing of different product attributes simultaneously. Several wine cues may influence consumers concurrently and conjoint analysis allows us to include multiple cues in our study and test them all through one survey. We can then hope to identify the most impactful one(s). Since our study is similar to Mtimet et al. (2006), we rely heavily on their methodology. We analyze the same number of four cues; however, they did not study consumers' wine knowledge.

A conjoint analysis consists of a set of profiles that are made up by different variations of a set of cues. The variations are the alternative versions of each cue (e.g. country of origin: Italy, South Africa etc.). A conjoint setup asks that respondents select (or rate, or rank) one of the profiles in a hypothetical purchase scenario. The dependent variable of a conjoint analysis is the outcome, i.e. selection of a profile (wine), and the cues (variations) make up the independent variables. Hence, the conjoint analysis estimates the *utilities* of the different cues. This relates to the *lens model* (Section 2.5), which suggests that consumers probabilistically weight different cues. The conjoint utilities represent such weights.

Like Mtimet et al. (2006), we designed a conjoint setup that asked respondents to select one of three wine profiles, each signaling variations of our four cues. Conjoint tasks are often analyzed as a multinomial logistic regression (Hair et al., 2014), e.g. when respondents rank the profiles. Our discrete design meant that a profile was either selected or not. We therefore chose a binomial logistic regression.

We chose to analyze four cues with four, three, three and two variations respectively, that is a total of $4 \times 3 \times 3 \times 2 = 72$ possible combinations. This is an impracticable number that was reduced substantially. Response fatigue, i.e. when respondents are overwhelmed by the number of questions, is crucial to avoid, since it risks distorting the response data (Ibid.). To ensure that each cue variation would appear the same number of times, we had to design a number of profiles that was divisible by 2, 3 and 4. We designed 36 profiles, corresponding to twelve sets of three profiles, which should be manageable for respondents to handle and still provide us with substantial data.

Our model estimates the probability that a wine be selected, given that it has certain cues. It follows that from Mtimet et al. (2006). The overall utility U_{ij} is expressed as:

$$U_{ij} = V_{ij} + \varepsilon_{ij} \quad (1)$$

consisting of the sum of a systematic component V_{ij} and a random component ε_{ij} . Individual i chooses alternative j rather than alternative k if: $U_{ij} > U_{ik}$. This gives us the probabilistic expression:

$$P_{ij} = \Pr (V_{ij} + \varepsilon_{ij} \geq V_{ik} + \varepsilon_{ik} \forall j \neq k \in C_{ij}) \quad (2)$$

where C_i is the choice set for individual i . The logistic expression for the probability that alternative j is selected is:

$$Pr(j) = \frac{e^{V_{ij}}}{\sum_{k \in C_n} e^{V_{ik}}} \quad (3)$$

and there are $k=3$ alternatives within each choice set. We assume that the random components are identically and independently distributed across the j alternatives and N individuals. This leads us to the linear additive form for the conjoint analysis model:

$$V_{ij} = \beta_0 + \beta_{1.1}x_{ij1} + \beta_{1.2}x_{ij2} + \dots + \beta_{1.n}x_{ijn} + \beta_2x_{is} \quad (4)$$

where x_{ijn} is the n th attribute value for alternative j for consumer i , $\beta_{1.n}$ represents the estimated cue coefficients, and β_0 represents the intercept. We also controlled for the quiz score in the equation, since knowledge level was included in our research question. The coefficient and score s for individual i are captured by β_2x_{is} .

More information about our conjoint analysis is found in Appendix 4; more on conjoint analysis can be found in Hair et al. (2014).

3.4. Design: The Survey

The 36 profiles were matched in sets of three. Variation within each set was crucial, since, if all wines in one set were Argentinian, for example, it would mean fewer occasions for respondents to select Argentina than e.g. Italy, which could skew the data. We created two versions of sets from the same 36 profiles, to ensure that the set compositions were not constant for all respondents, which would make the data more robust. Say that wine A is preferable to wine B, but that wine B is preferable to wine C, which is preferable to wine D.³ If B were only compared with A, and C only with D, then the respondent would choose A and C, although B was preferable to C, which could distort our findings.

Each of the twelve sets corresponded to a hypothetical purchase situation, in which respondents selected one wine to purchase. The situation was the same throughout:

³ A>B; B>C; C>D.

Suppose that you are visiting a good friend who has asked you to bring some wine for the two of you. Your friend likes wine, but is no expert and therefore trusts you to make an adequate selection. Which of the three red wines below do you select for yourself and your friend?

Country: Bulgaria	Country: Italy	Country: South Africa
Non-organic	Organic	Organic
Grape: Merlot	Grape: Cabernet Sauvignon	Grape: Syrah
Price: 149 SEK	Price: 99 SEK	Price: 149 SEK
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

This situation captures both the hedonic and social context of wine (Section 2.7). If we asked respondents to suppose it was for e.g. a certain event, it might evoke certain associations, as to which wine would be appropriate. The hypothetical friend was not hard to please, so respondents would make their decision independently, while still hoping to make the friend contented. Thus, we expected respondents to mainly consider which wine would taste better than the others.

In order to estimate respondents' wine knowledge, we featured a wine trivia quiz in our survey (Appendix 5), which consisted of nine multiple-choice questions. Some questions demanded multiple answers for a full score and others only one. The total score was a maximum 33 points. Correct answers were awarded points based on difficulty and incorrect answers were sometimes penalized to minimize lucky points that would not manifest actual knowledge. Each respondent's answers were marked, and based on score ranges, respondents were grouped into three *knowledge groups* representing their wine knowledge. These were named *Low*, *Middle* and *High* and were *ex-ante* set at <12 points, 12-21 points and >21 points respectively, each group corresponding to one-third intervals of the maximum 33 score.

We also asked certain questions in the survey pertaining to the respondents' general wine interest and habits, and their demographic background. Like Mtimet et al. (2006), we did not use this information in the equation for our conjoint analysis, but to get a sense of who was taking our survey. We also asked them to evaluate the most important cues in their last real wine purchase to get a sense of how appropriate our four cues were. Finally, we included a control question to assess the reliability of responses. The survey is found in Appendix 6.

3.5. Data Collection

The survey was distributed on March 28, 2020. It was active for four weeks. A substantial number of 43 responses were incomplete or otherwise invalid, i.e. they either answered the control question incorrectly or gave unrealistic answers to their wine-drinking habits. The number of valid responses collected were 163. We sought to obtain answers from at least 50 respondents from each knowledge group, which is considered the sample standard (Simmons et al., 2011).

3.6. Research Reliability

The research reliability intends to explain the replicability of the study. A thorough procedure is required to ensure reliability (Bryman & Bell, 2011). Since interviews laid the foundation for our research, there is a risk that subjectivity in the answers and our interpretation of them should decrease reliability. However, because the three interviewees could all be considered experts in their field and represented different areas of the wine industry, the risk of impacting the reliability negatively is lower. Conducting more interviews could improve reliability, but in relation to the bachelor thesis format and the relatively low impact of the interviews on our empirical findings, they are an adequate foundation for understanding the Swedish wine market.

The quantitative, conjoint analysis was inspired by several peer-reviewed studies, to ensure that our data analysis would be replicable. A *Google Scholar* search gave over 7,000 hits since 2019,⁴ so conjoint appears to be established in academic contexts.

Our quiz was inspired by Frøst and Noble (2002), but we adjusted ours to a European setting, since the original quiz primarily tested knowledge of American viticulture, which would not accurately reflect who could be considered knowledgeable among Swedish consumers. Our quiz emphasized European trivia more yet maintained a global perspective. The adjusted quiz was sent to the Swedish online wine forum Vinbanken.se for confirmation that the questions reliably tested consumers' different levels of knowledge.

3.7. Research Validity

The study's internal validity can be defined as its ability to answer our research questions (Bryman & Bell, 2011). The study aims to identify which cues influence Swedish consumers' wine selection and how consumers' wine knowledge mediates selection. We took several measures to ensure the validity of the results. The survey was sent to two large online wine communities, which improves the internal validity, since they represent Swedish wine consumers.

The survey was sent out as two separate links – one designated for persons born on an even day and another for persons born on an odd day of the month. This determinant could be considered random and would not (systematically) skew the response data, which strengthens the study's internal validity. The first page of the survey contained information on the importance of concentration and submitting truthful answers. To encourage participation, we stated that we would donate 2 SEK per participant to the United Nations Foundation's work against COVID-19. Since we were interested in Swedish consumers, all questions in the survey were in Swedish. Finally, we asked the respondents to evaluate the survey itself, and answer a control question to ascertain that

⁴ keywords: "conjoint analysis AND consumer"; May 1, 2020

their responses could be considered valid, also strengthening the internal validity. The evaluations were positive and are found in Appendix 7.

The study's external validity defines the extent to which its findings can be generalized beyond the specific context (Bryman & Bell, 2011). The study investigates specific questions arriving at specific conclusions, which weakens the generalizability. However, the theoretical framework applied to the research, i.e. the lens model, heuristics and cues, is relevant to anyone studying consumer decision-making. Therefore, external validity is enhanced.

4. Empirical Results

The empirical results from our survey are presented in three parts. We begin by presenting some descriptive statistics in Section 4.1, including respondents' demographics and quiz scores. We also present the respondents' self-estimated cue weighting at the point of their last wine purchase. The results in Section 4.2 come from the performed conjoint analysis. Here we estimate the cue utilities and their impact on consumers' wine selection. Section 4.3 presents the number of times each cue belonged to the wines that the respondents selected in the survey.

4.1. Descriptive Statistics

It is important to ascertain which customer segment the respondents represent, since wine preferences likely differ across segments. We therefore compiled data on the respondents' demographics and their wine habits and interest as presented below.

Table 3 presents the distribution of the respondents' age and quiz scores as well as the number of times they estimated that they would purchase wine every month and the average number of bottles bought each time. We found no statistical correlation between these four variables; older respondents did not systematically get higher scores and did not necessarily consume more wine. Rather, our respondents and knowledge groups seem to have varied in their consumption internally. The mean age at 48 reveals that we primarily had middle-aged respondents. None were younger than the legal 20-year limit to buy alcohol. We managed to get responses from 13 retired folks (Table 4), the oldest being 86 years old.

The distribution of the scores moderately followed a normal distribution (distributions of age and scores: Appendix 8) and the score mean, 15.9 points, was very close to half the full score, 16.5 points. Furthermore, we failed in obtaining 50 respondents in each knowledge group. Rather, groups *Low* and *High* undershot the 50 mark, while *Middle* was by far the largest group.

When it comes to the consumption habits among our respondents, the average person buys roughly 10 bottles a month,⁵ which sounds like quite a lot but considering that they were members of a wine community, it is realistic that they would be frequent wine consumers.

Gender was fairly evenly distributed between males and females and a majority of respondents had attained tertiary education and were employed.

⁵ (Monthly wine purchases)*(Average no. bottles per purchase): $2.6 \times 3.9 = 10.14$

Table 3. Distributions of respondents' age, score and wine habits

	Age	Score	Monthly wine purchases	Average no. bottles
Mean	48.3	15.9	2.6	3.9
Std. deviation	13.2	6.6	1.8	2.7
Min.	20	-1	0	0
Max.	86	30	10	20

Table 4. Descriptive statistics: frequencies and percentages

	N	%
Respondents	163	100
Knowledge groups:		
Low	40	24.5
Middle	89	54.6
High	34	20.9
Gender:		
Male	89	54.6
Female	73	44.8
Other	1	0.6
Educational attainment:		
Primary	1	0.6
Secondary	32	19.6
Tertiary	97	59.5
Cooperative	9	5.5
Postgraduate	24	14.7
Current employment:		
Student	5	3.1
Employed	139	85.3
Parental leave	3	1.8
Unemployed	2	1.2
Retired	13	8.0
Sick leave	1	0.6

We asked respondents about their wine interest. Answers are presented in Table 5. The respondents seem to generally have been quite interested in wine. A majority had for instance taken courses on wine, and a majority had either visited a vineyard many or a few times. Another majority owned either many or a few books about wine. The avid enthusiasts could be those who owned either a wine refrigerator or a wine cellar – roughly a third of respondents each.

Table 5. Descriptive statistics: respondents' wine interest

	N	%
Subscription to a wine magazine:		
Yes	48	29.4
No	102	62.6
Previously	13	8.0
Ownership of wine books:		
Yes, of many	43	26.4
Yes, of a few	64	39.3
No	56	34.3
Membership of a wine club:		
Yes	54	33.1
No	102	62.6
Previously	7	4.3
Having taken courses on wine:		
Yes	100	61.3
No	63	38.7
Having visited vineyards:		
Yes, many times	54	33.1
Yes, a few times	69	42.3
Never	40	24.5
Ownership of a wine refrigerator:		
Yes	49	30.1
No	114	69.9
Ownership of a wine cellar:		
Yes	53	32.5
No	110	67.5

We also asked our respondents to reflect on their last wine purchase and evaluate their decision-making. We asked them to estimate how they weighted seven cues to make their decision. The respondents would estimate how large a percentage each cue was weighted, all seven totaling at 100%. The aggregated means and standard deviations are presented in Table 6, where the highest means are **bold**. We featured the four cues that made up the bulk of our study, as well as bottle label, production district and prior recommendation or review. We analyzed the aggregate of all respondents as well as by knowledge group.

At a glance, we can see that our pre-selected research cues were all estimated as important determinants of the last purchase, except organic. Country of origin was generally the most important one. We also see quite a small variation between groups

Low and *Middle*, whereas *High* stands out. Notably, the most important cue in the latter group was district, while organic was very lowly estimated. Organic was estimated much higher among *Low* and *Middle*. We rejected the null hypothesis that means for organic and district were equal between knowledge groups at $p < 0.05$, based on a one-way ANOVA, found in Appendix 9.

Table 6. Respondents' self-estimated weight of cues (%) at last wine purchase

At the point of your last real-life wine purchase, how much weight (%) did you allocate to the cues below?	Subgroups:							
					A: Aggregate responses			
					B: Knowledge group: <i>Low</i>			
					C: Knowledge group: <i>Middle</i>			
					D: Knowledge group: <i>High</i>			
	A		B		C		D	
	N=163		n=40		n=89		n=34	
Wine cues	M	SD	M	SD	M	SD	M	SD
Country of Origin	23.1	19.5	25.2	22.2	22.9	17.5	21.9	18.2
Organic ^a	7.8	15.1	10.6	14.1	8.4	17.2	3.1	8.2
Grape Variety	22.6	17.7	21.4	21.2	22.6	18.8	23.3	13.9
Price	15.5	14.6	18.2	13.9	15.3	14.9	12.9	14.5
Label	1.5	4.3	2.2	5.6	1.2	3.6	1.6	4.0
District ^a	15.4	19.2	8.4	16.5	14.7	16.5	25.8	24.1
Recommendation or review	14.0	10.2	14.0	20.4	15.0	21.5	11.3	16.7
(Total)	(100)		(100)		(100)		(100)	

Note: Due to rounding, the means do not add up to exactly 100%.

^a One-way ANOVA rejects equality of means across the knowledge groups at $p < 0.05$.

4.2. Regression Analysis

The conjoint analysis of respondents' cue utilities was performed in SPSS Version 26 as a binomial logistic regression, presented in Table 7. There was one dependent variable, namely each respondent's selected and ignored wines. Of the 36 wine profiles presented to each, 12 would be selected and 24 ignored. Selected wines were coded as 1 and ignored ones as 0. The regression expresses the probability that the dependent variable would equal 1, i.e. that a wine would be selected, given the variation in the independent variables, i.e. the wine's particular cues.

We investigated 12 variations from four cue groups, which were the independent variables of the function, coded as dummy variables. One variation from each group (Bulgaria, non-organic, Syrah and 99 SEK) was left out as the baseline function. We ran the analysis four times in total – once for all respondents, and one time per knowledge group. We featured individual scores as a running variable in the regression but did not analyze it further. The beta coefficients associated with the respective cue variations denote the logistic odds that a wine would be selected. These are the utilities of the different cues; a positive coefficient suggests that the corresponding cue variation improves selection probability. Hence, we can also obtain combined utilities of several

cues. Coefficients are expressed relative to the baseline. Most coefficients were significant at the 1% level, and those that were not were quite small in magnitude. We also present the odds-ratios ($Exp \beta$).

Thus, four regressions were run. We can see in Table 7 that the countries of origin had fairly large positive and significant coefficients throughout the three variations and across knowledge groups, relative to Bulgaria. There are differences, however, in magnitude and order thereof between knowledge groups, notably Argentina had a much higher utility in group *High* than *Low*. Organic also had quite large positive coefficients relative to non-organic, but they vary heavily across knowledge groups. Organic has the largest impact in group *Low* and smallest in *High*. Regarding grape varieties, Cabernet Sauvignon had positive coefficients among *Low* and *Middle*, but was irrelevant to selection in *High*. Merlot had insignificant coefficients in the aggregate and among *Low* and *Middle*, but among *High* it was negatively associated with selection. The coefficients of both varieties decline stepwise as respondents' knowledge increases from *Low* to *High*, suggesting that the relevance of Syrah increases. Finally, price is found to have a concave utility function in the aggregate, i.e. the middle price has the highest utility, whereas the one below and above are nearly equal (Appendix 10). This is also found among *Middle*, whereas *Low* and *High* show opposite trends. Among *Low* the lowest and middle price utilities are indistinguishable and the highest price has the lowest utility. Among *High* the middle and highest price utilities are the same, positive relative to the baseline price. Combining the different cues, the favored wine in the aggregate was an Italian, organic, Cabernet Sauvignon wine at 149 SEK, which more or less persisted across knowledge groups.

Although most coefficients had high significance, the reported Nagelkerke R^2 values were quite low, which does not indicate that the model is poor per se, but does indicate that its capacity for prediction of wine selections is limited. The R^2 values were, however, similar in magnitude to those reported by Mtimet et al. (2006) and Gil and Sánchez (1997), at 0.13 and 0.12 respectively. We identify improved R^2 in knowledge groups *Low* and *High*. Below R^2 , we report the percentage of wines correctly classified by the model. Group *Low* and *High* were both classified correctly more often than *Middle*.

Table 7. Conjoint analysis of cue utilities

Dependent variable: 1 = Selected 0 = Ignored	Regressions:							
	A: Aggregate responses B: Knowledge group: <i>Low</i> C: Knowledge group: <i>Middle</i> D: Knowledge group: <i>High</i>							
	A N=163		B n=40		C n=89		D n=34	
Independent variables: Wine cues	β	<i>Exp</i> β	β	<i>Exp</i> β	β	<i>Exp</i> β	β	<i>Exp</i> β
Country of Origin:								
Italy	1.48*	4.37	1.65*	5.22	1.34*	3.80	1.82*	6.15
South Africa	0.98*	2.67	1.10*	3.01	0.92*	2.50	1.14*	3.12
Argentina	1.02*	2.77	0.66*	1.93	1.02*	2.78	1.57*	4.81
Bulgaria	-	-	-	-	-	-	-	-
Organic:								
Yes	0.75*	2.11	1.09*	2.98	0.68*	1.95	0.56*	1.74
No	-	-	-	-	-	-	-	-
Grape variety:								
Cabernet Sauvignon	0.37*	1.44	0.61*	1.84	0.42*	1.52	0.00	1.00
Merlot	-0.16	0.86	0.05	1.05	-0.01	0.99	-0.79*	0.45
Syrah	-	-	-	-	-	-	-	-
Price:								
99 kronor	-	-	-	-	-	-	-	-
149 kronor	0.38*	1.46	0.03	1.03	0.37*	1.45	0.88*	2.42
199 kronor	0.04	1.04	-0.62*	0.54	0.03	1.03	0.88*	2.41
Nagelkerke R ²	0.13		0.20		0.11		0.19	
% correctly classified	69.1		73.8		66.7		69.6	

* β significant at the 1% level

4.3. Frequencies

We further investigated the number of times each cue belonged to the wines that respondents selected (Table 8). This analysis follows the regression in Section 4.2, such that the cues belonging to the most selected wines also had the highest utilities and vice versa. The patterns across the knowledge groups are the same. Our 163 respondents selected 12 wines each, totaling at 163*12=1,956 selected wines.

The reason we compiled these data was that they make the notion of consumers' cue reliance more palpable. All cue variations had the same *rate of exposure*, or the number of times they appeared. Each country corresponded to 25% of wines, 50% of wines were organic and non-organic respectively, etc. We can then investigate how often respondents from different knowledge groups selected a wine with a certain cue. Where that number exceeds the number of times respondents were exposed to the cue, it suggests that they indeed relied on that cue to make their selection. In the regression, a positive coefficient simply tells us that a cue variation was selected more often than the baseline, but that variation might only be selected as often as it would randomly be expected to be (for instance, 25% of times for each country of origin). This approach

relates to Gigerenzer's heuristics (Section 2.6). Heuristics are single cues that are relied on for decision-making. These data allow us to consider the possibility that our respondents selected wines with only one cue in mind, rather than weighting all four cues displayed.

All respondent groups selected Italian wines much more than the rate of exposure and the opposite is true for Bulgarian wines. South Africa and Argentina were generally close to their rate of exposure. We can see that Bulgaria was the variation of all cue variations that was chosen the fewest number of times, which contributed to the large conjoint coefficients of the three remaining countries. There was less variation among the other groups of cues, although Merlot and Syrah were both selected slightly below the rate of exposure, except for Syrah among *High*. With only two variations of the organic cue, organic was obviously consistently selected above its 50% rate of exposure. The 149 SEK price was consistently selected above its rate of exposure, whereas the selection rate of the other two prices varied across knowledge groups.

Table 8. Frequencies of cues among selected wines

Of all the selected wines, how many signaled these respective cues?	Subgroups:		A: Aggregate responses B: Knowledge group: <i>Low</i> C: Knowledge group: <i>Middle</i> D: Knowledge group: <i>High</i>			
			A N=163	B n=40	C n=89	D n=34
Wine cues	Freq.	%	Freq.	%	Freq.	%
Country of Origin:	(1,956)	(100)	(480)	(100)	(1068)	(100)
Italy	691	35.3	185	38.5	362	33.9
South Africa	501	25.6	127	26.5	272	25.5
Argentina	506	25.9	95	19.8	287	26.9
Bulgaria	258	13.2	73	15.2	147	13.8
Organic:	(1,956)	(100)	(480)	(100)	(1068)	(100)
Yes	1199	61.3	324	67.5	644	60.3
No	757	38.7	156	32.5	424	39.7
Grape Variety:	(1,956)	(100)	(480)	(100)	(1068)	(100)
Cabernet Sauvignon	769	39.3	200	41.7	418	39.1
Merlot	560	28.6	143	29.8	322	30.1
Syrah	627	32.1	137	28.5	328	30.7
Price:	(1,956)	(100)	(480)	(100)	(1068)	(100)
99 SEK	597	30.5	181	37.7	328	30.7
149 SEK	759	38.8	189	38.8	414	38.8
199 SEK	600	30.7	113	23.5	326	30.5

5. Discussion and Conclusion

This thesis has sought answers to these questions:

- *Which types of information influence Swedish consumers' wine selection?*
- *How do information influences vary depending on how knowledgeable about wine consumers are?*

Drawing on inspiration from mainly Mtimet et al. (2006), but similar studies too, we have relied on a survey and subsequent conjoint analysis to establish the influence of one intrinsic and three extrinsic cues. Our knowledge quiz has served as a proxy for consumers' wine knowledge to establish differences in cue influence on consumers with different levels of wine knowledge. In this section we dissect the empirical results by investigating the relationship between the cues and respondents' wine selections in the survey, comparing responses between the knowledge groups. We compare our results to previous literature and finally reflect on the implications for practitioners.

5.1. Analysis of Results

The analysis is based chiefly on the conjoint analysis, but also accounts for the frequency of each cue among the selected wines and the respondents' own evaluation of the cues they relied on to make their last purchase. Thus, we complement the conjoint analysis with data that it cannot take into account, being naturally restricted in its statistical construction. The conjoint analysis suggests that country of origin is the most important cue for selection, followed by organic. Grape variety and price are not as relevant but vary across knowledge groups.

5.1.1. Country of Origin

Italy is clearly the most popular country, with Argentina and South Africa being virtually tied and Bulgaria clearly being the least popular. Because of this extensive variation among the different countries, which is consistent in the aggregate and across knowledge groups, alongside the fact that respondents put the most weight on country of origin at the point of the last wine purchase, we conclude that there is evidence that country of origin influences Swedish consumers' wine selection. Seeing as Italy was also selected many more times than its rate of exposure in the survey, there is evidence to say that it positively influences Swedish consumers' wine selection, while there is evidence for the opposite in Bulgaria's case – regardless of wine knowledge. Conversely, South Africa and Argentina were in the aggregate only selected about the same number of times as they appeared in the profiles, which begs the question whether they were actually attractive, or whether they were only attractive relative to Bulgaria. Among *High*, Argentina was preferred to South Africa, and selected more often than it

appeared, unlike *Low*'s slight opposite tendency. This is evidence that knowledgeable consumers are more positively influenced by Argentina than less knowledgeable ones, while the absolute attractiveness of South Africa remains unclear. Since more South African wine is sold than Argentinian in Sweden (Section 3.2), perhaps knowledgeable consumers will have tried the latter more than less knowledgeable ones, which could allow them to be more positively influenced by it.

The results compare with previous studies that have indicated the importance of country of origin in wine selection (D'Alessandro & Pecotich, 2013; Felzensztein & Dinnie, 2006; Skuras & Vakrou, 2002). This cue is, however, sensitive to the internal variation, i.e. which different countries are juxtaposed. Mtimet et al. (2006) compared wines originating from different regions of Spain and found that cue to be highly relevant. Swedish consumers would probably not attach the same salience specifically to those regions, but the general rule that origin matters is the same.

5.1.2. Organic

Our results suggest that an organic wine generally has a higher probability of being selected than a non-organic one. It seems that organic is generally viewed positively, such that consumers perceive that they can only benefit from choosing an organic wine over a non-organic alternative *ceteris paribus*. However, the evaluation of cue weighting at the last purchase suggests that consumers on average based 7.84% of their decision on the wine being organic, which suggests that organic generally may not be a deciding cue. The effects of organic, however, vary significantly across the knowledge groups. *Low* were more likely to than *Middle*, who in turn were more likely than *High* to select organic, and that pattern is reflected in the groups' significantly different cue weighting. In all, there is evidence that organic positively influences all consumers' selection, but that less knowledgeable consumers are influenced more than knowledgeable consumers. The discrepancy between our conjoint analysis and the self-estimated weighting casts some doubt over the magnitude of that influence.

Previous studies have indicated that consumers prefer organic over non-organic wines, but that the cue as such is subordinate to many other cues (Schäufele & Hamm, 2017; Mann et al., 2012). We find organic to be less relevant than country of origin, and also price among knowledgeable consumers, but generally quite relevant. We have found no previous distinction in the effect of organic by consumers' knowledge. It should be mentioned that in the wine industry, organic is not without controversy (Vinbanken, 2016). Organic production still permits copper sulfate as pesticide, which may be toxic to the surrounding environment. It is possible that knowledgeable consumers are aware that the organic label is not unequivocally positive, which would make them more hesitant to rely on organic as a cue. Among less knowledgeable Swedish consumers, the national discourse tainted by environmental issues – the country being home to Greta

Thunberg – could make them instinctively positive towards all green labels, including organic wine.

5.1.3. Grape Variety

Just as in previous research, we find that grape variety slightly influences consumers' choices, but it is dwarfed by other cues (Mtimet et al., 2006). Grape showed more modest results in our conjoint analysis, generally a smaller influence than origin and organic, comparable to price, but the respondents consistently evaluated that grape variety played quite a large role when they purchased their last wine, especially *High*. Cabernet Sauvignon was selected more often than it appeared in the survey among all groups so there is evidence that it generally has a slightly positive impact on consumers' wine selection. We have no clear evidence that the other two varieties impact selection either positively or negatively in the aggregate. Among *Low* and *Middle* both were selected just below the rate of exposure, whereas among *High* Syrah was selected above its rate of exposure and Merlot clearly below its. This is evidence that Syrah influences knowledgeable consumers' selection positively and that Merlot has the opposite effect. Cabernet is the most common variety at Systembolaget, which could explain why less knowledgeable consumers are most influenced by it – it is familiar. Since there are innumerable grape varieties with unique characteristics, it may take a knowledgeable consumer to be positively influence by several grapes, alternatively very negatively influenced by one.

Previous studies have shown that grapes are often part of a brand repertoire, which means that they are relevant mainly as part of a product totality and not on its own (Gluckman, 1990). We purposefully selected grapes that would be grown in all parts of the world, so they would hardly evoke any brand-specific sentiment or relate to specific districts etc. Since we find grape to be mildly influential, it seems possible that influence could be strengthened in combination with other cues. It is therefore hard to say anything about the general influence of grape variety based on these results.

5.1.4. Price

Regarding price, the stark comparison to Mtimet et al. (2006) is that we too find price to have a concave utility function in the aggregated responses. There is evidence that a 149 SEK price influences consumers' selection positively relative to 99 SEK and 199 SEK, which makes the utility function U-shaped upside-down (Appendix 10). 99 SEK is one of the most common prices among purchased wines at Systembolaget (Section 3.2), but our respondents were quite enthusiastic about wine in general, which makes it likely that they pay more for wine than the average Swede. While price was weighted quite evenly highly at the last purchase across knowledge groups, it was generally estimated as secondary to origin and organic in the conjoint analysis, on par with grape variety. Our findings thus differ from McCutcheon et al. (2009), who found price to be the most

influential extrinsic cue. We find that the price utility is not concave across all groups, suggesting that the knowledgeable consumers are indeed likely to select more expensive wines than less knowledgeable ones and vice versa. This complements Mtimet et al. (2006), since they did not study differences in consumers' knowledge. Among knowledgeable consumers, price seems to influence selection more than organic.

Our findings beg the question whether prices are absolutely or relatively attractive. Whether 149 SEK came out on top just because it lay between two extremes, we cannot say based on these results. The case of price is like that of grape – it is hard to infer the general influence of price on consumers' wine selection.

Moreover, previous studies have separated low- and high-involvement consumers and found that the former put more emphasis on price (Hollebeek et al., 2007; Lookshin et al., 2006). Assuming that less knowledgeable consumers have less involvement in wine purchases than knowledgeable consumers, we have evidence that knowledgeable consumers put more weight on price. Admittedly, group *Low* put marginally more weight on price at their last purchase, but the conjoint analysis suggested that price mattered more to knowledgeable consumers, surpassing organic.

5.1.5. Other Influences

Much of our study has revolved around differences in knowledge. D'Alessandro and Pecotich's (2013) study of Canadian consumers concluded that responses to cues vary depending on the consumers' wine knowledge. We also find that to be the case in our study, most notably in terms of price, but also for the three other cues. Furthermore, the study by Lee et al. (2018) grouped consumers into novice and experienced consumer segments, finding that experienced consumers responded less strongly to extrinsic cues than the novice segment. One extrinsic cue that we find knowledgeable consumers to respond less strongly to is organic, whereas they responded more strongly to our only intrinsic cue – grape variety. It is hard to assess this pattern, but it manifests similar tendencies as Lee et al. (2018) discover. Another cue that stands out when contrasting the knowledge groups is district, which *High* evaluated as the most impactful cue at their last purchase (albeit with a high variance). Knowledge about districts was prevalent in our knowledge quiz and it is intimately tied to *terroir*. Since we did not test district, there is no evidence to estimate its influence on wine selection, but since there is extensive variation in wine districts across the world, it seems likely that high levels of wine knowledge are required to rely on district as a cue for selection.

5.2. Conclusion and Practical Implications

We have confirmed some findings from previous studies, notably that country of origin is a very significant cue and that price has a concave utility function. Generally, there is evidence to estimate the influence of the four cues studied and some cue-specific

differences between consumers with different levels of wine knowledge. The conclusions we draw, however, are based on the specific segment that our respondents represented and Swedish consumers overall, who have not been investigated very thoroughly before.

There is evidence to conclude that country of origin heavily impacts Swedish consumers' wine selection. In our case Italy shows a strongly positive impact and Bulgaria a strongly negative one. The effects of Argentina and South Africa are less clear. Argentina does seem to influence knowledgeable consumers more positively than less knowledgeable ones, but there is no further evidence that the impact of country of origin varies across knowledge groups. The implications are that a seller like Systembolaget could consider aligning its supply of wines with the attractiveness of the different countries, while a wine club or a wine importer could consider marketing a wine from Italy by highlighting its origin, and conversely marketing wines with different origins by highlighting other aspects, e.g. the tradition of the particular vineyard. Those selling to knowledgeable wine consumers may consider promoting Argentinian wines. Systembolaget already sells most of Italian wine, which our findings support.

When it comes to organic, there is evidence that it has a positive impact on consumers' wine selection and may be marketed as such to less knowledgeable consumers and decreasingly so to more knowledgeable ones. There is no evidence that organic is ever unattractive. This affirms Systembolaget's environmental initiatives and suggests they should be continued. To other actors, it becomes relevant to identify one's segment. For instance, an actor selling simpler wines to ordinary consumers can expect to sell more with an organic certification, while a wine club, whose customers are wine enthusiasts, can expect a smaller benefit from marketing its products as organic.

The effect of grape variety as a cue is fairly difficult to ascertain. The most common one, Cabernet Sauvignon, seems generally to positively influence consumers' selection, while knowledgeable consumers are seemingly open to other grape influences – positive and negative. Market practitioners should consider not relying solely on grapes to market their products but combine it with other cues.

Our findings confirm findings from Mtimet et al. (2006) that price has a concave utility function to consumers on aggregate, while less knowledgeable consumers are more likely to select cheaper wines and knowledgeable ones have the opposite tendency. Price also seems to be a less influential cue to less knowledgeable consumers than to knowledgeable ones. Actors on the market may note that if knowledgeable consumers are their target group, they may consider raising prices to sell to them. On the other hand, selling more expensive wines to less knowledgeable consumers will be hard, but their predisposition towards organic suggests there could be some premium potential for organic wines. That is, however, a topic for further research.

5.3. Limitations

We have limited our study to four cues, which means that we cannot infer the relevance of the many other cues that wine consumers are exposed to. In particular, brands and celebrity promotion could potentially impact consumers regardless of origin, grape variety etc. Ice hockey legend Wayne Gretzky's Estate Wines come in many kinds, but grape variety is probably secondary to hockey fans who buy them.

One drawback of relying on conjoint analysis is that the utilities it generates are relative, i.e. they only indicate cue relevance relative to the baseline. By investigating four countries of origin, we cannot say how influential a fifth country would be. Nor do we ascertain the importance of e.g. Italy in absolute terms – Italy's utility is dependent on Bulgaria's and may differ if France were baseline. Furthermore, we did not test the joint effect, i.e. interactions, of different cues. Thus, we have not explored for instance whether organic has a larger influence on unattractive Bulgarian than desirable Italian wines. Moreover, our knowledge quiz could not perfectly gauge consumers' wine knowledge. It consisted of merely nine questions that could not capture the entire complexity of wine as described in Section 1.

In Section 2, we presented two perspectives on consumers' decision-making; Brunswik's *lens model* as probabilistic weighting of different cues, and Gigerenzer's heuristics as using single cues as rules of thumb. This thesis does not explore which perspective most accurately describes wine consumers, but the perspectives add to the interpretation of our results. The *lens model* suggests that it is the combination of the four cues tested that consumers use to make their selections, which is what the conjoint analysis captures. If we take a heuristics perspective, we should think of consumers as searching for the most attractive wine cue – Italy – selecting on that alone, and if it is not present, they instead search for the second-best cue, etc. The truth may vary from individual to individual, but since we conducted a conjoint analysis, our findings are more compatible with the *lens model* than heuristics. Hence, we do not find that only one or two cues matter as heuristics, but that several variations from all cues influence selection.

Our study is subject to some *selection bias*, i.e. a sample that is not fully representative of the population (Hardy & Bryman, 2004). As stated in Section 1.4, our survey respondents were primarily wine enthusiasts, so we have omitted occasional, disinterested consumers. As for wine profiles, our study featured cues based on wines sold at Systembolaget and did not include characteristics of wines not sold. Thus, our wine profiles may not represent all possible wine selections. However, we achieved variation in respondents through knowledge groups and in wine cues through differences in quantities sold, which should ensure validity in the bachelor thesis format. Either way, we cannot estimate the response rate, since we do not know how

many exposed to the study in the Facebook groups, which makes it hard to control the sample (Bryman & Bell, 2011).

The survey format poses some limitations, moreover. We tried to ensure ecological validity (Bryman & Bell, 2011; Dhami et al., 2004) but since the study is a simulation of a real-life scenario, it at best an adequate approximation of consumer behavior and at worst misleading, if it fails to capture the actual circumstances. It could be that label text in Italian evokes a different response than simply stating the wine's origin. We could have studied behavior in a physical store or constructed a real-life simulation. To conduct that type of study would, however, require more time and resources than the bachelor thesis format allows. As discussed in Sections 3.7 and 3.8, we believe that our research design was realistic enough to answer the research questions.

Lastly, we should interpret our statistical results carefully. We did not obtain 50 responses in the *Low* and *High* knowledge groups, which makes the data precarious to generalize (Simmons et al, 2011). Our R^2 and percentages of correctly predicted cases were quite low, which suggests limited prediction ability of our model. That is, however, not unexpected, as consumers are exposed to more than four cues in real-life situations. As such, we encourage the reader to reflect on what they are really purchasing the next time – is it the contents of the bottle or the cues it signals?

6. References

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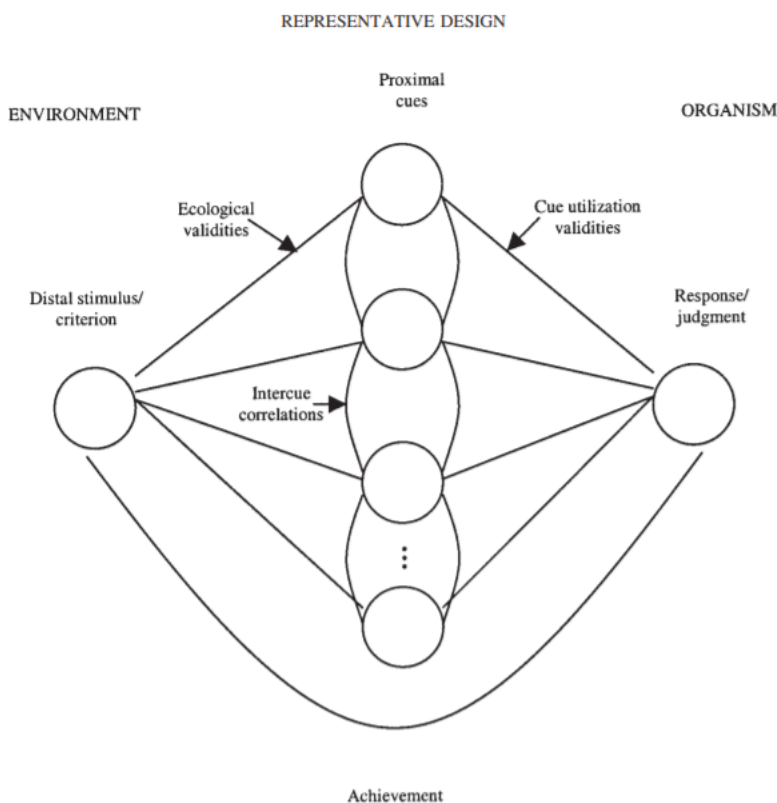
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7. Appendices

Appendix 1: Egon Brunswik's *lens model*



From Dhimi et al. (2004): *The Role of Representative Design in an Ecological Approach to Cognition*

Appendix 2: Condensed Interview Protocols (in Swedish)

▪ Q1: Berätta lite om dig själv och din bakgrund

A1: Interviewee 1 är civilekonom i botten. Numera marknad- och onlinechef för en online vinförsäljare.

A2: Interviewee 2 är inköpare inom ett visst segment på Systembolaget. Arbetat där under 10 år och utbildats på Restaurangakademien.

A3: Interviewee 3 är civilekonom i botten, men sedan utbildad sommelier. Har arbetat på en rad olika vinimportörer och sedan grundat sin egen, som är bland de största i Sverige.

▪ **Q2: Vad gör dig så intresserad av vin?**

A1: Interviewee 1: Härrör ur erfarenhet av att besöka vingårdar.

▪ **Q3: Hur går ni tillväga när ni väljer ut viner? Vad tittar ni på och påverkar er mest?**

A1: Interviewee 2: Kundeafterfrågan bestämmer vad Systembolaget köper in. Man använder sig av blindprovning för att fastställa vilket vin som ska köpas in enligt den sensoriska profil man bestämt i förväg. Man använder sig alltså av en objektiv bedömning. Ekologiskt och miljövänligt ges viss förtur.

A2: Interviewee 3: Systembolaget tillhandahåller statistik över försäljning som vi anpassar oss efter.

▪ **Q4: Hur beaktar ni pris när ni köper in?**

A1: Interviewee 2: Leverantörer har fri prissättning för de produkter vi köper in. Systembolaget bestämmer ett maxpris, utifrån marknader i andra länder, som är en maxgräns de måste förhålla sig till.

▪ **Q5: Vad vill konsumenterna ha när de köper vin (ej uttömmande)?**

A1: Interviewee 1: Intressanta druvor tilltalar vinentusiaster; många konsumenter föredrar boxvin; kampanjer med nedsatt pris samt att pålästa konsumenter har årgångs- och distriktpreferenser.

A2: Interviewee 3: Rött vin i prisklass 70-79 samt 80-89 efterfrågas mest. När priset stiger över 119 kr minskar efterfrågan rejält. Bag-in-box står för ca 50% av försäljningen.

▪ **Q6: Hur väljer konsumenterna ut sin produkt? Vad tror ni väger tyngst av dessa faktorer?**

A1: Interviewee 1: På vår hemsida går konsumenterna efter ansett ursprung till hög grad, exempelvis Champagne, inte minst om de besökt ett distrikt själva. Dessutom är recensenters poäng viktigt samt särskilda trender inom vin.

A2: Interviewee 2: 1. Om de provat i förväg, 2. Marknadsföring, 3. Pris, 4. Kvalitet (genom pris).

A3: Interviewee 3: Kunden bestämmer sig först för pris, därefter färg. Sedan kommer land och etikett, medan de flesta har begränsad kunskap om druvor. Rekommendationer och tidigare erfarenheter står också högt.

▪ **Q7: Är det någon skillnad mellan vitt/rött/rosé?**

A1: Interviewee 1: Rödvin säljs mest året om. Under särskilda säsonger säljs vitt och rosé mer, exempelvis under sommaren.

A2: Interviewee 3: Rött vin är det som säljs mest. Äldre människor dricker mer vitt vin. Rosé har sin bästa period under sommaren.

▪ **Q8: Hur arbetar ni med marknadsföring? Vad trycker ni på för att väcka kunders intresse?**

A1: Interviewee 1: Vi har valt att nischa oss mot alternativa vingårdar för att stå ut. Genom annons-targeting når vi våra tilltänkta målgrupper.

A2: Interviewee 2: Systembolaget arbetar inte med marknadsföring. Butikerna är dock anpassade efter kundernas behov.

A3: Interviewee 3: Vi har valt att marknadsföra våra produkters kvalitativa sidor.

▪ **Q9: Hur står sig svenska viner jämfört med utländska? Vad kännetecknar dem?**

A1: Interviewee 1: Prismässigt är det omöjligt att konkurrera. Nyfikenhet är triggern för vinentusiaster.

A2: Interviewee 2: Smakmässigt står sig svenska viner väldigt väl men på grund av låga volymer är de dyra i pris för konsumenten.

▪ **Q10: Hur fungerar trender i vinbranschen?**

A1: Interviewee 1: Det finns tydliga trender. Just nu är naturviner och orangea viner särskilt populära.

A2: Interviewee 3: Vinbranschen är tidlös och det sker inte särskilt mycket nytt. Kunskapsnivån är fortfarande låg bland de flesta konsumenter och därmed ändras inte vanor. Bland en intresserad grupp finns det starkare trender.

▪ **Q11: Har du något tillägg eller någonting övrigt som vi bör känna till om industrin?**

A1: Interviewee 1: Generellt kan man säga att vin över 160 kr innebär kvalitet, men även över 120 kr. Vinentusiaster är ofta medvetna om det.

Appendix 3: Test of Main Study

- We sent out our survey to ten people of different ages on the 27th of March. We told them about the study and explained what the objective of the study was, in

broad terms. We asked them to take our tentative survey and report back to us what their thoughts were. Some expressed minor concerns regarding the layout and order of the questions, which we took to heart and adjusted the survey accordingly. Some also expressed concerns regarding the knowledge quiz, and that they feared it would be misleading if respondents just guessed and happened to check the correct boxes. We replied that we would deduct points from incorrect answers, which should mitigate this. This, therefore, led to no change in the design. Overall, the feedback was quite positive, and the test persons expressed that they thought survey was fun. We owed much to our supervisor, Patric Andersson, who had ensured that our survey was thoroughly designed to begin with.

Appendix 4: Conjoint Analysis

- A conjoint analysis consists of a set of profiles that are made up by different *levels* of a set of selected *factors*. A factor, in our case, corresponds to a specific cue (e.g. country of origin) where the levels are the alternative versions of that cue (Italy, South Africa etc.). Thus, a conjoint task asks that test subjects evaluate the different profiles in a hypothetical purchase scenario, which can be done in three chief ways: order ranking, rating or discrete choice. The dependent variable of a conjoint analysis is the outcome of the hypothetical scenario, whether it is the ranking, rating or choice of a particular profile (wine), and the factors (cues) make up the independent variables. Hence, the conjoint analysis identifies the *utilities* of the different factors, which would allow us to establish which cues have the highest utility and are therefore most important in determining consumers' choice of wine.
- Since we, like Mtimet et al., were interested in consumers' choice of wine, it was natural to opt for the same discrete choice approach. A typical buying scenario that consumers face consists in their selection of a product, rather than their rating or order-ranking the products. We therefore designed a conjoint task that asked respondents to select one of three profiles of wine, each signaling variations of our four cues. A typical way to analyze a conjoint task is to use a multinomial logistic method (Hair et al., 2014), which is reasonable when the dependent variable is rank ordered, for instance, and thus contains multiple levels. This is the method employed by Mtimet et al., but our discrete method meant that a wine profile was either selected or not, which led us to choose a binomial logistic method of analysis.
- We chose to analyze four factors with four, three, three and two levels respectively, which adds up to a total of $4 \times 3 \times 3 \times 2 = 72$ possible combinations.

This is too impracticable a number to test and it was reduced substantially. To ensure that each cue level would feature the same number of times, we had to design a number of profiles that was divisible by 2, 3 and 4. We reduced the number of profiles to 36, which corresponds to twelve sets, each containing three different profiles, which should be a manageable number for respondents to handle and still allow us to gather substantial data. Response fatigue, i.e. when respondents are overwhelmed by the number of questions, is crucial to avoid, since it risks distorting the response data. 36 different profiles in twelve sets is quite a lot, but it ought not to be overwhelming to respondents, especially those who are interested in wine.

- When designing our 36 conjoint profiles, it was important not to be biased in the variation of factor levels. Hair et al. (2014) points to the importance of *orthogonality*, i.e. no substantial correlation among cues (e.g. if all Italian wines were organic, it would be hard to tell the cues apart), and *balance*, that each factor level appears the same number of times (Hair et al., 2014). Moreover, there are certain profiles deemed to be unacceptable, such as the “obvious profiles” containing all the highest or lowest levels of attributes. This problem was, however, mitigated by the fact that it was not obvious which levels were the highest or lowest of the cues that we investigated (perhaps with the exception of price). An organic Italian wine made from Cabernet Sauvignon could well turn out to be the one profile most preferred, but it should not be considered “obvious”. We nevertheless used the function to generate an orthogonal design in SPSS Version 26, to make sure that we were not biased in our creation of profiles. This generation did not, however, lead to a fully balanced set of levels, which is why we decided to adjust the SPSS-generated profiles in manner that ensured *balance*. The SPSS function is made for order ranking or rating of profiles, which it designs in a random fashion, which explains the absence of *balance* in the generated set.

Appendix 5: Wine Trivia Quiz (points)


- 1) Which (multiple) of the following grape varieties are used to make white wine?
 - a) Shiraz (-2)
 - b) Riesling (1)
 - c) Nebbiolo (-2)
 - d) Pinot Noir (1)
 - e) Chardonnay (1)
 - f) Gewürztraminer (1)

- 2) Which (multiple) of the following grape varieties are used to make red wine?
- a) Müller-Thurgau (-2)
 - b) Spätburgunder (1)
 - c) Viognier (-2)
 - d) Gamay (1)
 - e) Zinfandel (1)
 - f) Cabernet Franc (1)
- 3) Which (multiple) of the following names denote certified wine districts (like, for instance, under the French system of appellation d'origine contrôlée)?
- a) Napa Valley (1)
 - b) Vinho Verde (1)
 - c) Loire (-4)
 - d) Barolo (1)
 - e) Mittelrhein (1)
- 4) Which (multiple) of these certified wine districts (appellation d'origine contrôlée) are located in the French region of Bourgogne?
- a) Coteaux Bourguignons (1)
 - b) Chablis (1)
 - c) Beaujolais (1)
 - d) Sancerre (-2)
 - e) Côtes du Rhône (-2)
 - f) Saint-Emilion (-1)
- 5) Which (multiple) of the following grape varieties are used to make wine from Bordeaux?
- a) Pinot Noir (-1)
 - b) Gamay (-1)
 - c) Cabernet Sauvignon (2)
 - d) Grenache (-1)
 - e) Sangiovese (-1)
 - f) Merlot (1)

- 6) Which (multiple) of the following grape varieties are used to make wine from Bourgogne?
- a) Pinot Noir (2)
 - b) Gamay (-1)
 - c) Cabernet Sauvignon (-1)
 - d) Grenache (-1)
 - e) Chardonnay (1)
 - f) Hermitage (-1)
- 7) Which (one) of the following grape is the main grape used to make Italian Chianti wine?
- a) Pinot Noir (0)
 - b) Nebbiolo (0)
 - c) Cabernet Sauvignon (0)
 - d) Grenache (0)
 - e) Sangiovese (5)
 - f) Mouvedre (0)
- 8) Which (multiple) of the following grape varieties are used to make white wine in Germany?
- a) Viognier (-1)
 - b) Riesling (1)
 - c) Müller-Thurgau (2)
 - d) Semillon (-1)
 - e) Palomino (-1)
- 9) Which (one) grape variety is also known as Fumé Blanc?
- a) Chardonnay (0)
 - b) Sauvignon Blanc (2)
 - c) Cabernet Franc (0)
 - d) Semillon (0)
 - e) Pinot Blanc (0)
 - f) Pinot Gris (0)

Appendix 6: Survey (in Swedish)

- Wine profiles from both survey links are featured (odd birthday first, then even birthday).
- The trivia quiz is instead displayed in Appendix 5.

**Handelshögskolan i Stockholm**

Hej!

Vi håller på att skriva vår kandidatuppsats i marknadsföring på Handelshögskolan i Stockholm och behöver därför din hjälp. Vår uppsats undersöker konsumenters uppfattningar om och bedömningar av vin. Denna enkät är helt och hållet **anonym** och tar ca **sju minuter** att genomföra. Alla uppgifter behandlas **konfidentiellt**.

Dina svar gör skillnad! Som tack skänker vi två kronor för varje deltagare till **United Nations Foundations** arbete mot smittspridningen av COVID-19.

Om du skulle ha några synpunkter är du välkommen att höra av dig till oss på:
23926@student.hhs.se.

Tack för din tid!
/Carl Widstrand & Anton Giwercman

→

**Handelshögskolan i Stockholm**

Vi kommer att ställa dig inför en hypotetisk köpsituation **tolv** gånger, där vi ber dig att välja **ett** av alternativen som visas. Genomgående förutsätter enkäten **rödviner i 750 ml glasflaskor**.

Därefter kommer vi att ställa några frågor om vinkunskap samt om ditt vinintresse.

Vi ber dig att koncentrera dig och vi vill påminna om vikten av att svara så sanningsenligt som möjligt.

Köpsituation: Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut.

→



1. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Bulgarien	Land: Italien	Land: Sydafrika
Ekologiskt	Icke Ekologiskt	Icke Ekologiskt
Druva: Merlot	Druva: Syrah	Druva: Cabernet Sauvignon
Pris: 99 kr	Pris: 99 kr	Pris: 199 kr

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1. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Bulgarien	Land: Argentina	Land: Bulgarien
Ekologiskt	Icke Ekologiskt	Ekologiskt
Druva: Syrah	Druva: Merlot	Druva: Cabernet Sauvignon
Pris: 99 kr	Pris: 149 kr	Pris: 149 kr

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2. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Argentina	Land: Sydafrika
Icke Ekologiskt	Icke Ekologiskt	Ekologiskt
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Merlot
Pris: 199 kr	Pris: 149 kr	Pris: 149 kr

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2. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Argentina	Land: Italien
Ikke Ekologiskt	Ikke Ekologiskt	Ekologiskt
Druva: Syrah	Druva: Merlot	Druva: Cabernet Sauvignon
Pris: 99 kr	Pris: 99 kr	Pris: 149 kr

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3. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Italien	Land: Sydafrika
Ikke Ekologiskt	Ekologiskt	Ikke Ekologiskt
Druva: Merlot	Druva: Merlot	Druva: Cabernet Sauvignon
Pris: 99 kr	Pris: 99 kr	Pris: 149 kr

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3. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Bulgarien	Land: Argentina
Ikke Ekologiskt	Ikke Ekologiskt	Ekologiskt
Druva: Cabernet Sauvignon	Druva: Merlot	Druva: Cabernet Sauvignon
Pris: 199 kr	Pris: 149 kr	Pris: 199 kr

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4. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Argentina	Land: Sydafrika	Land: Italien
Ikke Ekologisk	Ekologisk	Ikke Ekologisk
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Cabernet Sauvignon
Pris: 149 kr	Pris: 99 kr	Pris: 199 kr

☐☐☐

Handelshögskolan i Stockholm

4. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Bulgarien	Land: Italien
Ekologisk	Ekologisk	Ikke Ekologisk
Druva: Syrah	Druva: Merlot	Druva: Syrah
Pris: 149 kr	Pris: 99 kr	Pris: 199 kr

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Handelshögskolan i Stockholm

5. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Bulgarien	Land: Italien	Land: Sydafrika
Ikke Ekologisk	Ekologisk	Ekologisk
Druva: Merlot	Druva: Cabernet Sauvignon	Druva: Syrah
Pris: 149 kr	Pris: 99 kr	Pris: 149 kr

☐☐☐



5. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Sydafrika	Land: Italien
Ekologiskt	Ekologiskt	Ikke Ekologiskt
Druva: Syrah	Druva: Merlot	Druva: Merlot
Pris: 199 kr	Pris: 149 kr	Pris: 199 kr

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6. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Argentina	Land: Argentina	Land: Italien
Ikke Ekologiskt	Ekologiskt	Ekologiskt
Druva: Merlot	Druva: Cabernet Sauvignon	Druva: Syrah
Pris: 149 kr	Pris: 199 kr	Pris: 149 kr

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6. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Argentina	Land: Sydafrika	Land: Argentina
Ekologiskt	Ekologiskt	Ikke Ekologiskt
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Canernet Sauvignon
Pris: 99 kr	Pris: 99 kr	Pris: 149 kr

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7. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Bulgarien	Land: Argentina
Ikke Ekologisk	Ekologisk	Ekologisk
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Merlot
Pris: 199 kr	Pris: 149 kr	Pris: 199 kr

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7. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Bulgarien	Land: Bulgarien
Ekologisk	Ikke Ekologisk	Ikke Ekologisk
Druva: Merlot	Druva: Syrah	Druva: Cabernet Sauvignon
Pris: 99 kr	Pris: 199 kr	Pris: 99 kr

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8. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Bulgarien	Land: Bulgarien	Land: Argentina
Ikke Ekologisk	Ikke Ekologisk	Ekologisk
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Syrah
Pris: 199 kr	Pris: 99 kr	Pris: 99 kr

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8. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Italien	Land: Argentina
Ikke Ekologisk	Ekologisk	Ikke Ekologisk
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Syrah
Pris: 199 kr	Pris: 99 kr	Pris: 149 kr

☐☐☐

Handelshögskolan i Stockholm

9. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Italien	Land: Bulgarien
Ekologisk	Ikke Ekologisk	Ekologisk
Druva: Cabernet Sauvignon	Druva: Merlot	Druva: Syrah
Pris: 149 kr	Pris: 199 kr	Pris: 99 kr

☐☐☐

Handelshögskolan i Stockholm

9. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Bulgarien	Land: Sydafrika
Ekologisk	Ekologisk	Ikke Ekologisk
Druva: Syrah	Druva: Merlot	Druva: Cabernet Sauvignon
Pris: 149 kr	Pris: 199 kr	Pris: 149 kr

☐☐☐



10. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Argentina	Land: Sydafrika	Land: Bulgarien
Ikke Ekologisk	Ekologisk	Ekologisk
Druva: Merlot	Druva: Syrah	Druva: Merlot
Pris: 99 kr	Pris: 199 kr	Pris: 199 kr

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10. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Argentina	Land: Sydafrika	Land: Italien
Ekologisk	Ikke Ekologisk	Ikke Ekologisk
Druva: Merlot	Druva: Merlot	Druva: Cabernet Sauvignon
Pris: 99 kr	Pris: 99 kr	Pris: 199 kr

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11. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Bulgarien	Land: Argentina	Land: Bulgarien
Ikke Ekologisk	Ikke Ekologisk	Ekologisk
Druva: Syrah	Druva: Cabernet Sauvignon	Druva: Cabernet Sauvignon
Pris: 149 kr	Pris: 99 kr	Pris: 99 kr

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11. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Argentina	Land: Bulgarien
Ekologiskt	Ikke Ekologiskt	Ekologiskt
Druva: Merlot	Druva: Cabernet Sauvignon	Druva: Cabernet Sauvignon
Pris: 149 kr	Pris: 99 kr	Pris: 99 kr

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12. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Italien	Land: Sydafrika	Land: Argentina
Ekologiskt	Ikke Ekologiskt	Ekologiskt
Druva: Merlot	Druva: Merlot	Druva: Syrah
Pris: 149 kr	Pris: 199 kr	Pris: 199 kr

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12. Anta att du ska besöka en god vän som har bett dig köpa med dig ett rödvin till er båda att dela på. Din vän tycker om vin, men är ingen vinkännare och är säker på att du fattar ett fullgott beslut. Vilket av nedan tre alternativa rödviner köper du till dig och din vän?

Land: Sydafrika	Land: Bulgarien	Land: Argentina
Ikke Ekologiskt	Ikke Ekologiskt	Ekologiskt
Druva: Merlot	Druva: Syrah	Druva: Syrah
Pris: 199 kr	Pris: 149 kr	Pris: 199 kr

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Försök att minnas ditt senaste köp av rödvin. Vad köpte du för vin?

Vilka av nedanstående faktorer beaktade du vid detta köp och hur stor relativ vikt lade du vid respektive faktor? Tilldela varje faktor en procentandel som ska summera till totalt 100.

Ursprungsland	<input type="text" value="0"/>
Ekologisk märkning	<input type="text" value="0"/>
Druva	<input type="text" value="0"/>
Pris	<input type="text" value="0"/>
Etikett	<input type="text" value="0"/>
Vindistrikt	<input type="text" value="0"/>
Rekommendation / recension	<input type="text" value="0"/>
Total	<input type="text" value="0"/>



Handelshögskolan i Stockholm

Bra jobbat! Nu följer nio kunskapsfrågor om vin, där det framgår om ett eller flera svar är rätt. Vänligen markera alla svar du tror är rätt, men inte fler. Rätta svar ger poäng, medan felaktiga svar i vissa fall ger minuspoäng.

Var vänlig att inte googla rätt svar, utan gör ditt bästa!





Handelshögskolan i Stockholm

Ungefär hur många gånger i månaden brukar du köpa vin i butik eller online? Svara i siffror, tack!

Ungefär hur många flaskor brukar du köpa vid ett och samma tillfälle (alltså ej bag-in-box)? Svara i siffror, tack!



Handelshögskolan i Stockholm

Bra jobbat! Sista avsnittet behandlar dig och ditt intresse för vin.



Handelshögskolan i Stockholm

Prenumererar du på en vintidning eller motsvarande?

Ja

☐

Nej

☐

Inte längre, men jag har gjort det tidigare

☐

Äger du böcker om vin?

Ja, många

☐

Ja, ett fåtal

☐

Nej

☐

Är du medlem i en vinklubb eller motsvarande?

Ja

☐

Nej

☐

Inte längre, men jag har varit det tidigare

☐

Har du någon gång deltagit i en vinkurs eller motsvarande?

Ja

☐

Nej

☐

Har du någon gång besökt en vingård?

Ja, många gånger

☐

Ja, ett fåtal gånger

☐

Nej

☐

Äger du en vinkyl?

Ja

☐

Nej

☐

Har du en vinkällare?

Ja

☐

Nej

☐

Vilket kön identifierar du dig som?

Man

☐

Kvinna

☐

Icke-binär

☐

Annat

☐

Vill ej ange

☐

Hur gammal är du? Skriv din ålder i siffror, tack!

Vilken är din högsta genomförda utbildning?

Grundskola

☐

Gymnasium

☐

Universitet- eller
högskoleutbildning

☐

Yrkesutbildning
eller motsvarande

☐

Forskarutbildning
eller motsvarande

☐

Vilken är din huvudsakliga sysselsättning?

Studerar

☐

Arbetar

☐

Tjänstledig

☐

Föräldraledig

☐

Arbetslös

☐

Pensionär

☐

Sjukskriven

☐

Annan

☐

Avslutningsvis vill vi be dig att besvara följande frågor om själva webbenkäten och undersökningen?

	Nej, absolut inte	Nej, i stort sett inte	Tveksamt	Ja, i stort sett	Ja, absolut
Kändes undersökningen meningsfull?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Var webbenkätens frågor tydligt formulerade?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anser du att frågorna försökte påverka dina svar i en viss riktning?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Undersöker webbenkäten konsumenters val av rödvin i en viss köpsituation?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Undersöker webbenkäten utbudet av öl på svenska krogar?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Handelshögskolan i Stockholm

Färdig!

Nu har du dessutom bidragit till att skänka en slant till kampen mot COVID-19.

Vi uppskattar din hjälp - tusen tack för ditt bidrag!

Appendix 7: Respondents' Evaluation of the Survey

- Respondents were asked to evaluate the survey itself, which gave us overall positive responses. Table 9 shows that a majority of respondents thought that the questions were clearly phrased and meaningful, and a majority felt that their answers were not steered in any direction. This suggests that our survey was overall purposefully designed.

Table 9. Respondents' evaluation of the survey

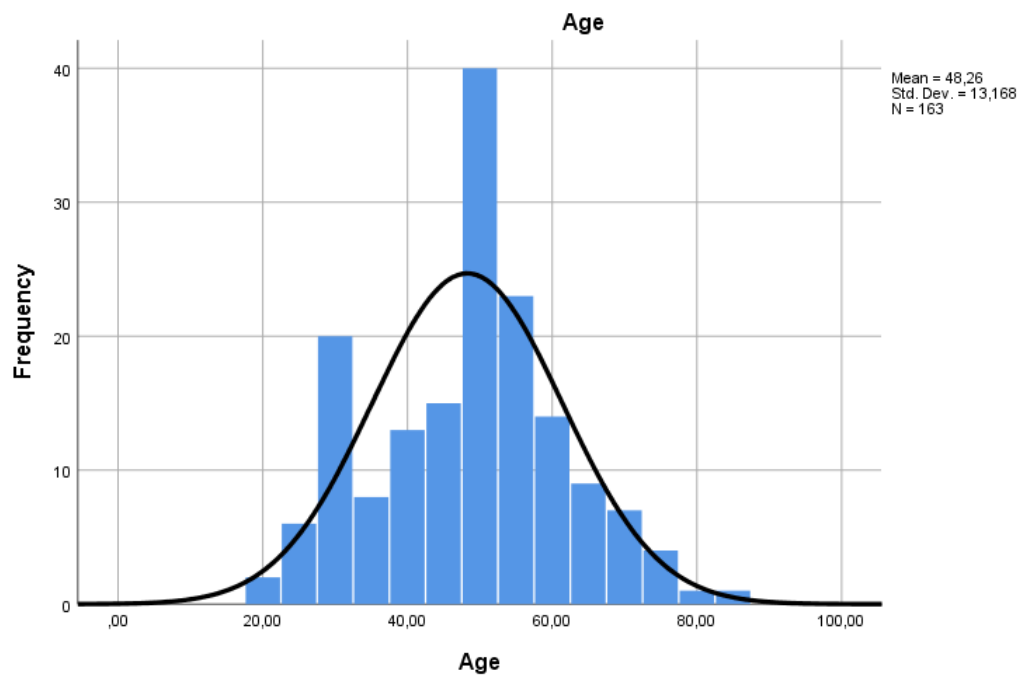
A: *Were the questions clearly phrased?*

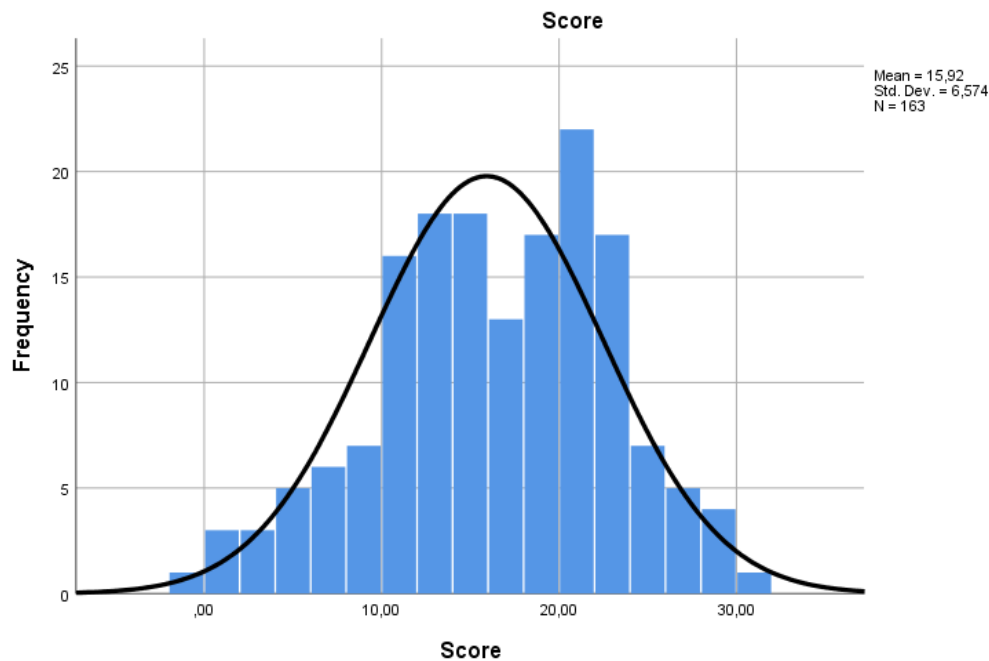
B: *Were the questions meaningful?*

C: *Were your answers steered in any direction?*

	A		B		C	
	Freq.	%	Freq.	%	Freq.	%
No, absolutely not	1	0.6	5	3.1	62	38.0
No, generally not	2	1.2	8	4.9	56	34.4
Not certain	4	2.5	41	25.2	25	15.3
Yes, generally	79	48.5	80	49.1	15	9.2
Yes, absolutely	77	47.2	29	17.8	5	3.1
All	163	100	163	100	163	100

Appendix 8: Distributions of Respondents' Age and Quiz Scores





Appendix 9: ANOVA

- The ANOVA table from SPSS Version 26 shows the F statistic and significance level for the seven cues, where the null hypothesis is that the group means of cue weights equal each other. ANOVA requires three assumptions (Laerd Statistics, 2018):
 - Normally distributed dependent variables;
 - Homogeneity of variances; and
 - Independence of observations.
- In the ANOVA, we reject the null hypothesis at $p < 0.01$ in the case of district and at $p < 0.1$ in the case of organic. District is highly significant and organic marginally so. Below, we present two robust tests of equality of means, since there is reason to doubt that the assumptions, specifically homogeneity of variances, hold. Welch and Brown-Forsythe tests are robust to such violations and have similar null hypotheses. Here we reject both district and organic at $p < 0.05$. Taken together, we reject the two null hypotheses that district and organic have equal means.

ANOVA

		F	Sig.
Country_of_origin	Between Groups	,332	,718
	Within Groups		
	Total		
Organic	Between Groups	2,468	,088
	Within Groups		
	Total		
Grape	Between Groups	,137	,872
	Within Groups		
	Total		
Price	Between Groups	1,218	,299
	Within Groups		
	Total		
Label	Between Groups	,834	,436
	Within Groups		
	Total		
District	Between Groups	8,559	,000
	Within Groups		
	Total		
Recommendation_review	Between Groups	,406	,667
	Within Groups		
	Total		

Robust Tests of Equality of Means

		Statistic ^a	df1	df2	Sig.
Country_of_origin	Welch	,282	2	73,776	,755
	Brown-Forsythe	,320	2	108,733	,727
Organic	Welch	5,137	2	91,658	,008
	Brown-Forsythe	3,275	2	133,752	,041
Grape	Welch	,117	2	77,920	,890
	Brown-Forsythe	,139	2	105,388	,870
Price	Welch	1,275	2	76,712	,285
	Brown-Forsythe	1,251	2	115,105	,290
Label	Welch	,652	2	67,781	,524
	Brown-Forsythe	,720	2	93,410	,489
District	Welch	6,463	2	69,068	,003
	Brown-Forsythe	7,298	2	81,754	,001
Recommendation_review	Welch	,512	2	81,470	,601
	Brown-Forsythe	,451	2	125,610	,638

a. Asymptotically F distributed.

Appendix 10: Price utility plotted

- The utilities of the different response groups are plotted below with inserted polynomial trend lines, made in Microsoft Excel. Utilities are relative to the baseline price of 99 SEK, whose utility is 0. Our graphs show that the aggregate and group Middle both have concave utilities, i.e. U-shaped (upside-down) functions, where the middle price has the highest utility. Groups Low and High show opposite trends; declining and increasing utilities respectively, as prices rise.

