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## Article

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Article

# Enhancing Restaurant Profits via Strategic Wine Sales

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**Abstract:** The restaurant industry, especially fine dining, is characterized by intense competition and an increasing number of closures. Wine is a profit lever, but the exploitation of sales potential can present a challenge. As consumers encounter more extensive wine lists, they often find themselves overwhelmed. A restaurant experiment in Stuttgart, Germany, examined strategies to simplify decision-making for customers and their impact on wine purchases and the dining experience. This experiment, conducted at a small fine-dining establishment, aimed to understand how wine descriptions and pairing recommendations influence customer choices and behavior, revealing key insights that wineries and restaurants can leverage to boost wine sales. The findings underscore the power of wine descriptions and strategic pairing recommendations in enhancing customer engagement. They suggest that restaurants can increase their wine sales by integrating well-crafted wine descriptions into menus, while wineries can benefit by providing comprehensive tasting notes and pairing suggestions that align with restaurant offerings. For both sectors, understanding the sensory and psychological factors that shape wine appreciation can offer a competitive edge.

**Keywords:** wine sales; customer behavior; wine-and-food pairing; restaurant management; wine marketing strategies; wine customer engagement; wine and gastronomy; sommelier; profitability; wine list; wine supply



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## 1. Introduction

Gastronomy is the study of food and culture, including the preparation, cooking, and appreciation of food in relation to its origins, history, and artistry (Ivanović et al., 2008; Navarro-Dols & González-Pernía, 2020). It is concerned with exploring and elevating the experience of food—the dishes, the ingredients, and how the meals are prepared, enjoyed, and understood (Maberly & Reid, 2014). It hence investigates how food culture connects to society (Balderas-Cejudo et al., 2025). Restaurants, not simply as a physical place for consumption, play a paramount role in providing gastronomic experiences for customers and for their culinary enjoyment (De Albuquerque Meneguel et al., 2019). Restaurants are a crucial part of the global economy, providing millions of jobs worldwide, including chefs, waitstaff, suppliers, and delivery personnel. Over 150 million people are estimated to be employed in the restaurant industry globally. The U.S. restaurant industry surpassed USD 1 trillion in sales in 2024, and employs more than 12 million people (Keech, 2024). In the EU, the food and beverage service activities industry recorded 8.3 million employees, and Germany was the country in the ranking with the highest number of employees in the food and beverage service activities industry, with approximately 1.7 million (Statista, 2024). Restaurants also contribute significantly to local economies, particularly in tourist

destinations. Restaurants serve as ambassadors for different cuisines. Globalization has led to an explosion of international flavors and fusion cuisines across the world. While not all restaurants are necessarily focused on gastronomy, as some might prioritize convenience or casual dining over culinary artistry, restaurants can specialize in gastronomy—for instance, a fine-dining restaurant might focus on innovative techniques and exceptional food presentation (Lane, 2014; Radjenovic, 2014). For such gastronomic services, wine plays an important role in their business models, for profit generation but also as a lever to generate the desired style of experience and to differentiate themselves from other restaurants (Barrows, 1996; Berenguer et al., 2009; Dodd, 1997; Livat et al., 2023; Taylor et al., 2024; Wansink et al., 2006).

Currently, restaurants face tough times. Across the globe, restaurants are struggling with a shortage of skilled workers. The hospitality industry has faced difficulties in attracting and retaining staff, exacerbated by the COVID-19 pandemic and changing work expectations. Inflation, supply chain disruptions, and rising food costs are affecting restaurants' bottom lines. With rising labor costs, particularly in countries with strong labor laws like Germany, restaurants must find a balance to remain profitable while offering fair pay. In addition, restaurants are under pressure to adopt sustainable practices, such as reducing food waste, sourcing locally, and minimizing their carbon footprint, which often involves additional costs and operational changes. While restaurants in Germany and globally continue to hold great cultural, social, and economic significance, they must secure a financially viable future. In Germany, almost every fourth restaurant owner thought about closing their business. Restaurant insolvency climbed by 30% in 2024, compared to 15% for all other industries (Terpitz, 2024).

The bottom line of a restaurant strongly profits from wine sales. "While food sales might typically account for 60 to 70 percent of gross revenue, the beverage category often accounts for 80 percent or more of gross profit" (Segelbaum, 2022). Therein, wine is of paramount importance. Wines are offered for a multiple of the buying price, often up to 4 times the purchase price (Barth, 2011; Livat & Remaud, 2018; Livat et al., 2023). Depending on the gastronomic service and the region (affinity for wine as an accompaniment to food), wine can account for one third of the restaurant bill (Gil et al., 2009). As a consequence of the importance of on-premises wine sales, research has devoted a lot of attention to wine list design and sales activities in restaurants (Bivona & Cruz, 2021; Davis & Charters, 2006; Jenkins, 2015; McCutcheon et al., 2009; Nestlé, 2011). Furthermore, research interest favors taking the perspective of (wine) tourism (Alonso et al., 2015; Bruwer & Alant, 2009; Byrd et al., 2016; Charters & Menival, 2011; Dressler, 2014, 2017; Dressler & Paunović, 2021; Getz & Brown, 2006; Gómez-Carmona et al., 2023; Koch et al., 2013; Marco-Lajara et al., 2023; Meneses et al., 2023; Menival & Han, 2013; Salvat & Boqué, 2008; Santos et al., 2019; Skinner, 2000; Thomas et al., 2010). In regard to a restaurant's strategic profiling and differentiation, Berenguer et al. identified that the length of the wine list could be perceived by consumers as an indicator of (high end) quality (Berenguer et al., 2009). Yet, studies on variables affecting wine sales are limited. One study performed in a Swiss restaurant focused on a single recommendation for a prix fixe menu (Spence et al., 2014). This study expands on the idea of a wine recommendation by also examining the impact of various wine descriptions as well as wine recommendations tailored to each menu offering.

Wine enjoyment is inherently multi-sensory, involving sight, smell, taste, touch, and sound. Visual cues such as the wine's color and clarity set initial expectations for its quality and flavor. Research has shown that the appearance of a wine can significantly shape how it is perceived by consumers, even before they take their first sip (Pangborn et al., 1963; Zellner & Durlach, 2003). This highlights the importance for wine businesses and restaurants of presenting wine in a visually appealing manner, whether through menu

descriptions or the presentation of the glass itself. Wine and food choices in fine dining are complex and often shaped by sensory perceptions, cognitive biases, and environmental factors. For instance, sensory attributes such as sight, touch, and sound can shape our expectations and enjoyment of wine (N. Jackson, 2022; R. S. Jackson, 2009; Jones et al., 2008; Pangborn et al., 1963; Zellner & Durlach, 2003). Additionally, psychological factors like mood and familiarity with certain flavors or wines can influence our preferences and openness to trying new options (Heath et al., 2006; Ileri-Gurel et al., 2013; Lakoff & Johnson, 1999). These complexities make it essential to isolate the specific impact of descriptive menu language and pairing suggestions on wine choices.

Humans often prejudge whether or not they will like a certain food prior to even tasting it from both intrinsic and external sensory inputs. This anticipatory expectation of preference can significantly impact our sensory perception (Hutchins, 2003). Perceptions and external cues influence our expectations, which, in turn, can precondition our “judgment and perception, however subtly. How those you serve experience your food is as much a matter of what is going on in their minds as it is a matter of what they put in their mouths” (Spence, 2017). A team of researchers found that a food’s texture and appearance can turn off Western consumers before they have tasted it. In the study, using readily visible insects compared with processed insect products which obscured the presence of the insects, the researchers found that Western consumers’ taste preference was more positive if they did not recognize that they were eating insects prior to tasting them (Sogari et al., 2018). While Westerners’ aversion to eating insects might come as little surprise, it demonstrates that humans can precondition their flavor and taste preferences before an individual ever smells or tastes a food or beverage. This preconditioning can set the stage, as an initial anticipatory perception, for whether or not an individual will enjoy an eating or dining experience.

This preconditioning extends into the area of marketing, where consumer expectations are shaped prior to their actual experience of a product (Spence, 2017). “Altering the name of a food product to something related to the exotic would enhance the preference rating for the product.” (Wolfson & Oshinsky, 1966). In creating food suitable for travel into space in the early stages of the United States’ space program, researchers found that relabeling the names of foods that had been condensed into unappetizing concentrations made them more acceptable to test subjects. Several studies have shown that preconditioning with either labels or descriptions, both positive and negative, can lead individuals to prefer a food, or not, based on the influence of the expectation created (Spence, 2017; Spence et al., 2014). A 2001 study proposed that ‘olfactory illusions’ were created by labels describing an odor prior to it being experienced, and the labels ‘significantly influenced’ odor perception (Herz & von Clef, 2001). Manescu et al. found that positive labels led to test subjects finding all scents more pleasant than those with negative labels (Manescu et al., 2014). The same study found certain odors to also be regulated by labeling both for intensity and reaction time.

With this understanding of how human internal and external multi-sensory perception can influence consumer choice, it could be of great utility for restaurateurs and vintners to study whether or not increased information in the form of wine descriptions and food pairing recommendations can affect the extent to which customers enjoy their experience in a restaurant and whether or not this might influence their purchasing behavior.

The tactile aspects of wine, including its temperature and viscosity, also play a role in flavor perception. A chilled white wine, for example, may be perceived as crisper, while a room-temperature red wine can seem fuller and more complex (R. S. Jackson, 2009; Jones et al., 2008). Moreover, the dining environment’s auditory elements, such as background music, can subtly influence how customers perceive their wine choices and

their willingness to purchase certain selections (Areni & Kim, 1993; North et al., 1997, 1999). This suggests that elements like ambient music can be strategically used to create a mood that aligns with a specific type of wine, thus enhancing the sensory experience (Spence et al., 2014). Sensory inputs do not work in isolation; instead, they combine in the brain to create a unified perception of flavor and quality (Shepherd, 2017; Spence, 2017). Aroma plays a particularly critical role in wine appreciation. Smell works in tandem with taste to define flavor, with the brain combining these sensory signals to produce the final impression. As Shepherd explained, “The taste of wine is not in the wine; the taste of wine is created by the brain of the wine taster” (Shepherd, 2017). The overall dining experience combines multiple sensory attributes—aroma, taste, texture, and more. Psychological factors also significantly affect wine appreciation. Mood, stress, and familiarity with wine types can alter taste perception, shaping the overall dining experience. For instance, consumers under stress may find it harder to enjoy complex flavors, while those in a positive mood might be more open to trying new wines. Additionally, familiarity with certain wines often influences consumer decisions, as individuals tend to gravitate towards options they recognize or feel comfortable with (Lakoff & Johnson, 1999). Understanding these psychological elements allows wineries and restaurants to create environments and experiences more likely to resonate with their customers, ultimately leading to increased sales. This highlights the subjective nature of wine tasting, suggesting that restaurant owners should create environments that enhance positive sensory experiences and support customers in their need to reduce perceived risk (Lacey et al., 2009). Wine recommendations by the chef, the restaurant, and the sommelier and wine-and-food pairing propositions are instrumental, as the proposal of a fitting wine takes into account the flavors in the dishes (Hammond et al., 2009; Klosse, 2011).

## 2. Materials and Methods

An explorative empirical study was conducted to examine offering elements based on sensory appreciation and consumer preference and to analyze how various strategies might influence customer purchasing behavior, ultimately impacting sales (Valli & Casella, 2017). The approach deviates from conceptual methods for yield management, coming up with simulations and optimized models (Barth, 2011; Lane, 2014; Livat & Remaud, 2018; Livat et al., 2023). Furthermore, the experiment detailed below, in a restaurant setting, can provide a real-world application that accounts for environmental factors such as ambiance, service flow, and menu structure (Bruwer et al., 2018; Valli & Casella, 2017). Adjusting descriptions and pairing suggestions throughout the experiment offers a holistic view of how these elements affect the customer experience, drive engagement, and ultimately improve revenue for both wineries and restaurants.

The experiment was conducted over several months at a small (26-seat), upscale restaurant in a German metropolitan city area in Stuttgart. The partnering restaurant focuses on providing a refined dining experience. Known for its intimate ambiance and a high level of personal service, the restaurant features a seasonal menu that changes frequently based on the availability of fresh, local ingredients. Its wine list includes a diverse selection of European and domestic German wines, offering customers a range of choices that complement the food menu. The restaurant owners are experienced chefs but do not claim significant expertise in wine. They strongly relied on their preferred wine supplier when deciding on the wine list. This setting provided an ideal environment to test how wine descriptions and pairing recommendations could influence customer purchasing behavior in a real-world context.

During the experiment, the restaurant’s menu was adjusted to include different styles of wine descriptions. These adjustments occurred over distinct periods to compare the ef-

fects of three approaches: no wine descriptions (the control group), short wine descriptions (focusing on basic aroma and flavor sensory notes), and long wine descriptions (providing more detailed information about the wine's origin, the story of the vintner, and specific tasting notes). For instance, short descriptions would simply highlight the wine's key flavor elements, such as "notes of blackberry and spice," while long descriptions would include additional context like "crafted by a family-owned vineyard in Tuscany, offering deep blackberry notes with hints of aged spice" (see illustrative examples in Appendix A).

Additionally, food pairing recommendations were integrated into the menu during certain weeks, suggesting specific wines to accompany each of the menu dishes, which featured seafood, poultry, rich meat, and vegetarian appetizers and entrées (see illustrative example in Appendix B). Weeks without a pairing recommendation acted as a control to compare the impact of adding the recommendation. These recommendations aimed to guide diners toward selections that would best complement their meal, making the wine selection process more accessible and reducing decision fatigue. By aligning these recommendations with the seasonal dishes featured on the restaurant's menu, the experiment sought to maintain the establishment's emphasis on quality and harmonious dining experiences.

Four experts who completed a course in wine sensory analysis at the Ludwigshafen University of Applied Sciences, Weincampus Neustadt, jointly developed the descriptions as well as wine-and-food pairings (Ashton, 2011). Understanding a wine's sensory components is fundamental to evaluating its compatibility with food (see illustrative example in Appendix C). Aroma and taste (a combination of basic tastes and retro-nasal aroma) are central to wine appreciation, while structure—including acidity and tannin levels—provides additional depth. Master of Wine Nick Jackson emphasizes the importance of structure in assessing a wine's origin and quality, noting how acidity and tannins shape the sensory experience (N. Jackson, 2022). The team approached pairing recommendations and wine descriptions via tasting notes. Tasting notes are a widely used format for describing wines, documenting sensory evaluations in categories such as aroma, taste, color, mouthfeel, and balance. These notes often standardize terminology, making wine characteristics more relatable to consumers (Srivastava, 2023). The WSET's "Systematic Approach to Tasting" is offered as a standardized lexicon, aiding beginners in recognizing and describing various wine attributes. Similarly, the wine aroma wheel serves to categorize wine aromas systematically, making complex sensory details accessible to professionals and novices alike (Noble, 1987). These frameworks help demystify wine descriptions, encouraging exploration and enhancing satisfaction.

Developing the wine descriptions: This study used four judges who were each given a pre-formatted spreadsheet for tasting notes, with categories similar to those used in the WSET and wine wheels, that also listed each wine (they were not sampled blind). Each wine on the restaurant's wine list was evaluated by each judge in four broad areas: prevailing characteristics; visual (intensity, color); scent (intensity, aromas); taste (flavors, sweetness, acidity, tannins, alcohol, body, flavor intensity, finish, overall impression). An example of the categorization and one of the judges' wine sensory assessments can be seen in Appendix C. These spreadsheets guided the expert discussion where a consensus of dominant characteristics was agreed upon for each wine. The freeform fields of the spreadsheets allowed judges to input unique terms which were used to develop descriptions for each wine.

Developing wine and food pairing recommendations: Once a wine had been evaluated, the food–wine pairing considered the following:

- (a) Flavor balancing and culinary matching: Effective pairings rely on balancing flavors and textures between food and wine. Techniques such as matching wine structure

(e.g., acidity and mouthfeel) with food characteristics (e.g., fattiness, saltiness) can create harmonious dining experiences (N. Jackson, 2022; Klosse, 2011). For instance, fatty foods pair well with wines high in acidity, while bitter wines are complemented by rich, fatty dishes (Folly, 2021).

- (b) Molecular elements: This approach considered matches of foods and wines based on shared molecular components, such as anethole in fennel and certain wine aroma compounds. This method enhances sensory harmony, as complementary molecules amplify shared sensory perceptions (Chartiers, 2012).
- (c) Subjectivity and regional pairing: the tasters were also allowed to jointly decide on recommendations based on the subjective nature of taste and regional matches, such as pairing local wines with dishes from the same area. This approach leverages cultural familiarity to enhance customer comfort and enjoyment (Longuere, 2023).

The restaurant's sales were tracked using the restaurant's computerized cashier system (Melzer X3000), allowing to monitor changes in wine sales in response to the different description styles (Preszler & Schmit, 2009). The experiment design ensured minimal disruption to the restaurant's daily operations while providing a natural setting to observe customer reactions to changes in the presentation of the wine list. The study was conducted over 111 days from October to June, spanning across various seasons and, hence, accounting for potential seasonal fluctuations in customer preferences and behavior. The restaurant was open four days a week, Wednesday through Saturday evenings, which limited the number of days during the study period. Sales data, recorded daily with each transaction, provided a detailed view of wine purchasing trends under different experimental conditions (Valli & Casella, 2017). Wine purchases for each order were examined using a Multiple Factor Analysis in XLStat to determine the potential correlation between wine and food purchases. In addition, interviews with management allowed to validate the data and provided additional insights related to the findings of the sales data research. An accompanying questionnaire in the form of a Google Forms survey was filled by four participants.

### 3. Results

The experiment lasted 111 days, and for the time period, a total revenue of almost EUR 200,000, of which 20% was wine sales, was generated (see Table 1).

**Table 1.** Number of days and total wine sales.

	Wine Sales		
	Study Totals	Revenue (EUR)	Wine% of Total Revenue
# Days	111		
# Bills	1086	194,075	
Total Wine Orders (includes multiple wines on one bill)	1496	36,459	19%

The analysis of sales data discussed below reveals clear trends that demonstrated the impact of wine descriptions and pairing recommendations on customer choices.

#### 3.1. Impact of Wine Descriptions

The data indicate that the presence of detailed descriptions on the wine list had a positive effect on wine sales (see Table 2). Wine sales increased on average by 7% in cases of short, basic descriptions. Longer, more evocative descriptions pushed wine sales by 13%. Weeks with long descriptions saw the highest increase in wine purchases, followed by those with short descriptions, while for the weeks with no descriptions, sales lagged behind

those weeks with descriptions. For example, during weeks featuring long descriptions, average daily wine sales increased by 15% compared to weeks with no descriptions, rising from an average of EUR 1000 to EUR 1150 per day. This suggests that customers valued the additional information when making their selections, leading to higher sales.

**Table 2.** Wine sales and wine descriptions.

Wine List Description Style	Red (EUR)	Rosé (EUR)	Sekt (EUR)	White (EUR)	White Schorle (EUR)	Wine Sales (EUR) Total by Wine List Description	Wine Sales (%) Total by Wine List Description					
No Description	3860	26.8%	218	19.5%	2035	29.2%	3502	25.3%	28	22.7%	9642	26.4%
Short Description	4428	30.8%	428	38.2%	2103	30.1%	5318	38.4%	22	18.2%	12,298	33.7%
Long Description	6102	42.4%	473	42.3%	2842	40.7%	5031	36.3%	72	59.1%	14,519	39.8%
Total	14,389		1119		6980		13,850		121		36,459	

The sales data broken down by description type further highlight this impact. Over the 10-week period when long descriptions were used, the total sales of wines with these descriptions reached EUR 12,000, compared to EUR 9500 for weeks with short descriptions, and only EUR 7800 for weeks with no descriptions. Notably, the experiment showed that white wines, which often had more detailed descriptions, sold significantly better, with an increase of 20% in units sold during weeks with long descriptions (Gawel et al., 2000).

### 3.2. Wine-and-Food Pairing Propositions

In cases where a wine–food pairing suggestion was on the menu, bills with wine sales increased 30–50% (see Table 3). For example, during the four weeks when pairing recommendations were included, sales of paired red wines increased by 30% over the period without recommendations, and those of white wines rosé by 31%. This suggests that recommendations helped customers make confident decisions about their wine choices, directly influencing their purchasing behavior (Nygren et al., 2002, 2003). This is highlighted by the Sekt (German for sparkling wine), which did not have menu recommendations, but for which the wine order volume also increased on the days when the menu had pairing recommendations.

Restaurant customers were obviously encouraged by the recommendation to examine the wine list more thoroughly. Including food-and-wine pairing recommendations also had a notable impact on sales. After normalizing the sales data using Min–Max Scaling normalization to account for variation in the number of days during which a wine-and-food pairing recommendation was on the menu, sales still increased up to 10% (see Table 4).

The percentage of overall wine sales increased for each wine type when pairing recommendations were on the menu (see Figure 1 or Appendix D).

Sales also increased for almost all periods in cases of short and long descriptions on the wine list, with the periods with long descriptions showing larger increases (see Figure 2 or Appendix D).

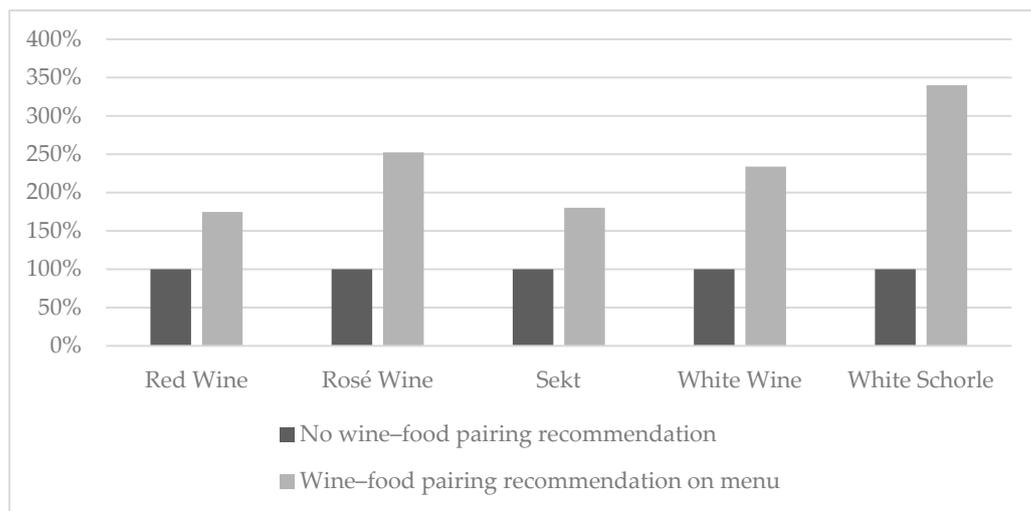
The interviews with the restaurant owners provided anecdotal, qualitative support for the above findings, indicating that customers found both short and more extensive wine descriptions helpful, enhancing their overall dining experience. Particularly, customers less familiar with wine engaged more actively with the servers when long descriptions were available, finding them intriguing and engaging. Conversely, more knowledgeable wine customers appreciated the novelty of the descriptions without having to decide on the wine. Wine descriptions reportedly streamlined staff interactions, as they reduced the frequency of requests for recommendations and focused customer attention more on the descriptions provided, encouraging greater independence in wine purchasing decisions.

**Table 3.** Number of wine orders with/without wine-and-food pairing suggestions.

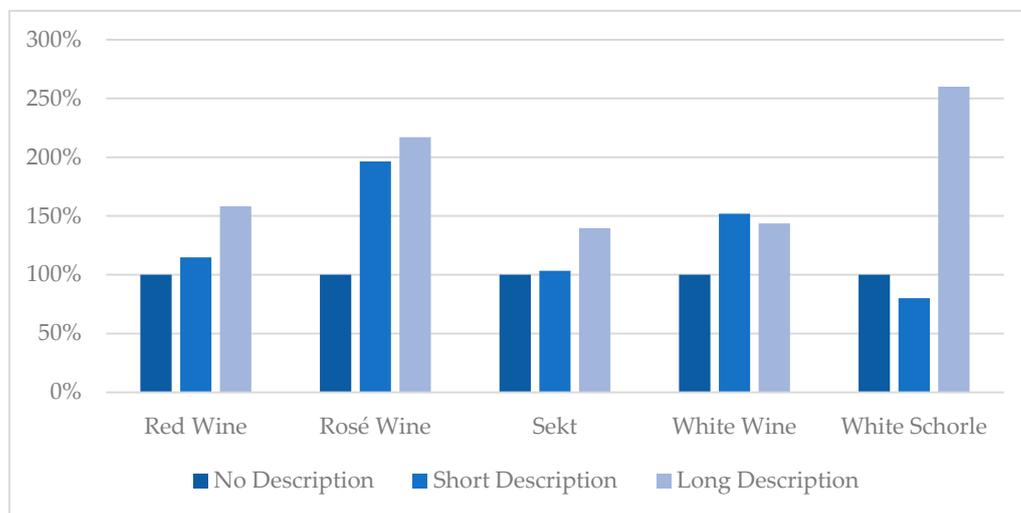
	Red			Rosé			Sekt			White			White Schorle		
	No Wine-Food Pairing Recommendation	Wine-Food Pairing Recommendation on Menu	Total	No Wine-Food Pairing Recommendation	Wine-Food Pairing Recommendation on Menu	Total	No Wine-Food Pairing Recommendation	Wine-Food Pairing Recommendation on Menu	Total	No Wine-Food Pairing Recommendation	Wine-Food Pairing Recommendation on Menu	Total	No Wine-Food Pairing Recommendation	Wine-Food Pairing Recommendation on Menu	Total
No Description	149	0	149	11	0	11	89	0	89	166	0	166	2	0	2
Short Description	21	142	163	3	26	29	15	94	109	23	193	216	2	2	2
Long Description	181	334	515	3	23	26	8	112	120	12	193	205	6	6	6
Total	181	334	515	17	49	66	112	206	318	201	386	587	2	8	10
	35.15%	64.85%		25.76%	74.24%		35.22%	64.78%		34.24%	65.76%		20.00%	80.00%	

**Table 4.** Daily average wine sales with/without wine-and-food pairing suggestions.

Daily Average Wine Ordered with Food Pairing Recommendation				
	Study Days	% of Study Days	Daily Average % of Wine Sales	Average Increase in Wine Sales % with Recommendation
Days without Recommendation	42	37.8%	34%	
Days with Recommendation	69	62.2%	67%	
Total	111			
% Difference		60.9%	50.4%	10.5%



**Figure 1.** Wine-and-food pairing impact on sales.



**Figure 2.** Impact of wine descriptions on sales.

#### 4. Discussion

These experiments strongly support research findings that sales and, therefore, profits in restaurants can benefit from orchestrated wine sales. The data disclosed that different styles of descriptions had varying impacts on sales performance. Furthermore, the results of the hereby presented quantified sales analyses are in line with previous research stating that "... (1) selected wine recommendations increased sales by 12 percent, (2) food-wine pairing recommendations increased sales by 7.6 percent, and (3) wine tastings increased sales by 48 percent" (Wansink et al., 2006). Hence, up to one third of the increase came

from diners who would have otherwise ordered liquor, beer, and nonalcoholic drinks. The descriptions and pairing recommendations facilitated customers in making independent wine selections, which, in turn, enhanced their engagement and overall experience at the restaurant. In addition, wine descriptions increased efficiency, reducing instances in which servers and staff had to answer questions.

More extensive descriptions were found to be most effective, suggesting a narrative that connected the customer to the wine. Short descriptions, while less effective than long ones, still outperformed having no description at all, suggesting that even a brief description can help guide customer choices and can benefit sales. Providing detailed wine descriptions helps customers anticipate flavors and reduces the intimidation of selecting a wine. Effective narratives, such as stories about the wine's origin or production, foster emotional connections and trust. "An effective narrative will engage a customer's imagination. . . creating sufficient empathy to induce action" (Zak et al., 2005). Trust and support provided via extensive but specific descriptions are key in reducing perceived risks in making decisions on wine during dining (Bruwer et al., 2018). Indeed, extensive descriptions serve to reduce the asymmetry of knowledge between wine consumers' own inferior wine knowledge and that of the producer or sales intermediaries (Benfratello et al., 2009; Castriota & Delmastro, 2012). In addition, in gastronomic settings, wine consumers are often deprived of the possibility to decide based on optical cues in order to minimize their perceived biases, for example, by looking at the wine label; studies show that wineries lean on famous brand design elements to profit from legitimacy effects (Celhay et al., 2013; Charters & Pettigrew, 2005). Positive labels and descriptions can precondition customers to perceive higher quality and satisfaction. For instance, a brain scan study revealed that consumers preferred wines labeled as expensive, even when the wine itself was not (Spence, 2017).

Compared to strategies to reduce the risk of customers relying on labels, or on brand or expert statements (e.g., "Parker points") (Akerlof, 1970; Castriota et al., 2013; Cichetti, 2010; Costanigro et al., 2010; D'Alessandro & Pecotich, 2013; Dubois & Nauges, 2010; Gokcekus & Nottebaum, 2011; Johnson & Bruwer, 2007; Schamel, 2009; Winfree & McCluskey, 2005), the herein presented wine recommendations serve as a more accurate lever to minimize the risks of choice and to maximize the ability to enjoy the wine: the wines and the food have been tested by trained and experienced counselors who do not individually profit from their recommendations (Cichetti, 2010; Gergaud & Livat, 2004).

One key factor in identifying whether recommendations are valuable from a consumer perspective is simplification. Simplified recommendations, such as a single wine pairing for a prix fixe menu, have been shown to increase sales by reducing decision fatigue (Spence et al., 2014). This approach also boosts customers' confidence in their selections when faced with choice overload (Iyengar & Lepper, 2000). While some studies suggest that wine style is important (C. Staub & Siegrist, 2022), this study did not provide evidence that wine style is the key driver.

This study included a Multiple Factor Analysis (MFA) for each order in which wine was purchased to determine whether descriptions or pairing recommendations most influence wine sales. The MFA analyzed the correlations between individual wine orders on each bill for days where there were wine pairing recommendations, or none, as well as days where there were short or long descriptions, or none, to determine if either a pairing recommendation or having a wine description on the wine list was more likely result in consumers ordering wine. The MFA results for wine pairing recommendations indicated that the influence on orders was slight, but not statistically significant. This is likely due to the volume of orders placed when there were no wine pairing recommendations or wine descriptions on the wine list and compounded by the volume of sales of wines from the

old wine list as well as sparkling wine, which were not included in the recommendations or descriptions. In the first month of the study, the restaurant included on their wine list the residual stock of their previous wine list. These wines did not have wine descriptions or wine pairing recommendations, yet were still available for purchase, and when sold, would skew the results of the wine description and wine–food pairing recommendation impacts. The limitations on the use of the cash register system did not allow us to extract these data from the study results.

The increased information shared through wine descriptions or pairing recommendations can increase gastronomic confidence for customers which can also serve to increase the restaurant’s profitability. Structured experimentation has shown that all of the factors swaying customers’ wine decisions can also serve to encourage them to explore less familiar or higher-priced options (Hammond et al., 2009; Nygren et al., 2002, 2003; Terrier & Jaquinet, 2016). For example, research indicates that descriptive menu language not only enhances customers’ understanding, but also mitigates anxiety for customers unfamiliar with certain wines, thereby improving their willingness to purchase (L. Staub & Siegrist, 2022; Veseth, 2015).

Restaurants can strongly profit from the herein reported effects that wine recommendations have on wine sales. Not only do wine sales climb as a result of detailed wine recommendations and reliable wine-and-food pairings—and not only is wine a strong contributor to restaurants’ profitability—but the gastronomic confidence of customers is also increased via a reduced perceived risk regarding the wine list. Furthermore, wine recommendations are one of the few levers that allow wine serving establishments to leverage customer confidence and profits without financial investments (similarly to new interior design). Creating convincing recommendations requires an investment in knowledge about wines and time to engage (Ashton, 2011; Hodgson, 2009). Service personnel need to be informed and trained, as well, to be able to comment on wines in case of consumer questions. When creating the wine list and wine–food pairing recommendations, it is important to pay attention to the possibility of undermining the customer’s wine decision by steering them, since in general, more than 70 percent “. . . of the increase in sales of promoted wines come from diners who would likely have ordered a non-promoted wine” (Wansink et al., 2006).

This study’s limitations include several factors which offer opportunity for further study. This study was limited to a small restaurant. It may be that the results could be extrapolated to restaurants of other sizes, but further studies would be necessary to demonstrate this conclusively. The cash register systems used by the staff functioned by simply inputting orders for the chefs in the kitchen to then make, but with a bit more programming and more detailed inputs for each order, such as organizing each dish by food category, we could obtain a richer set of data that could provide greater insight into wine purchasing behavior related to food categories. This study did not consider seasonal, monthly or meteorological effects (i.e., the effect of rainy weather) on purchasing considerations. Each of these areas offer opportunities for further study. Future studies should carefully consider any surveys (in addition to cost data) used to determine likely consumer responses by perhaps providing multiple ways of providing input (e.g., paper and electronic). The level of consumers’ wine knowledge and their perceived risk in terms of wine selection were not quantitatively measured in this study, which offers an opportunity for further study.

Whereas the herein reported study profits from real sales experience and data, customers were not interviewed regarding their initial choices, nor were they asked about their final wine or dining experience. The Google Forms review was completed by only four clients, possibly due to German and regional customers in the restaurant being more reluctant to take part in digital surveys compared to international customers. Future stud-

ies might explore customer perspectives the wine descriptions. Furthermore, the aspect of sustainability was incorporated into the experiment through the strong emphasis on regional wines. Future studies are recommended that explicitly address the topic of wine and sustainability (Srivastava, 2023), but also the strategic differentiation of restaurants (Berenguer et al., 2009).

## 5. Conclusions

The restaurant industry, especially fine dining, is characterized by intense competition and an increasing number of closures. Wine represents a key profit lever, but the exploitation of sales potential can present a challenge, especially for chefs with less wine competence. As consumers encounter more extensive wine lists, they often find themselves overwhelmed. A restaurant experiment in a large German city examined strategies to simplify decision-making for customers and the impact on wine purchases and the dining experience. This experiment provided quantitative evidence that incorporating wine recommendations into menus increases sales by providing clear guidance, reducing decision fatigue, and making the wine selection process more accessible (Nygren et al., 2002; Preszler & Schmit, 2009). The above-discussed limitations offer ample opportunities for further research to expand knowledge in this area. The findings of this study underscore the power of wine descriptions and strategic pairing recommendations in enhancing customer engagement.

**Author Contributions:** Conceptualization, S.S.; methodology, S.S., M.D.; software, S.S.; validation, S.S., M.D.; formal analysis, S.S.; investigation, S.S.; data curation, S.S.; writing—review and editing, S.S., M.D.; writing—original draft preparation, S.S.; visualization, S.S.; supervision, M.D.; project administration, S.S.; funding acquisition, S.S. All authors have read and agreed to the published version of the manuscript.

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**Institutional Review Board Statement:** Ethical review and approval were not required for this study. This research was a case study with one company that allowed access to its premises and the usage of its data under the condition that the data would be sanitized to not allow tracking of the restaurant. All data retrieval and exchange was based on the ethical standards of the University of Ludwigshafen (see ethical committee webpage at "<https://www.hwg-lu.de/en/fachbereiche/fachbereich-sozial-und-gesundheitswesen/forschung/foerderung-unterstuetzung/kommission-fuer-forschungsethik-des-fachbereichs-2>", accessed on 30 April 2025) for applied research and empirical data generation.

**Informed Consent Statement:** Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement:** The data presented in this study are available on request from the corresponding author due to the volume and proprietary origin of data.

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## Appendix A. Study Wine Description Examples for One Wine

Short Description:

2021 Riesling Quarzit trocken, Gutswein-Dry, flint and quince on the nose, taste of nectarine, gooseberry and herb.

Long Description:

2021 Riesling Quarzit trocken, Gutswein—In the shadow of Scharlachberg, where the Nahe meets the Rhein, the Rumpf family continues producing exceptional Rieslings like this with familiar notes of white peach hay, and a light minerality, gifted by the quartzite soil. You will enjoy a dry white wine that offers flint and quince on the nose with tastes of nectarine, gooseberry and herb.

## Appendix B. Example Wine-and-Food Pairing

(All menus were written in German so the original and a translation are provided):

Original German: Jakobsmuscheln auf Karottenpüree mit Feigen und marinierten Estragon-Orangen

Weinempfehlung 2020 Chablis Courault Michelet, Domaine Jean Claude Courtault

Translated: Scallops on carrot puree with figs and marinated tarragon oranges

Wine recommendation 2020 Chablis Courault Michelet, Domaine Jean Claude Courtault

## Appendix C. Example of a Wine Sensory Assessment

2021 Riesling Quarzit trocken, Gutswein; VDP Weingut Kruger-Rumpf, Münster-Sarmsheim, Nahe

Dominant Characteristics—yellow fruit, flinty/slate minerality, lively acidity

Visual	Intensity—medium Color—lemon
Scent	Intensity—medium+ Aromas—Flint, Quince, TDN, Citrus, Nuts
Taste	Flavors—Slate, Unripe Yellow Nectarine Sweetness—dry Acidity—medium+ Tannin Level—none Overall Nature—green Alcohol—medium Body—medium Flavor Intensity—medium Finish—medium Other—slight petillance

## Appendix D. Comprehensive Data Sheet: Wine Orders

**Table A1.** Wine orders and sales on recommendation and wine style description days.

Wine Style	Wine Style Description	No Wine-Food Pairing Recommendation			Wine-Food Pairing Recommendation on Menu			Total				
		# Bills with Wine Ordered	# Individual Wine Orders	Total Wine Orders	# Bills with Wine Ordered	# Individual Wine Orders	Total Wine Orders	Wine Orders	# Bills with Wine Ordered	% Increase Compared to No Description	# Individual Wine Orders	% Increase compared to No Description
Red												
Red	No Description	149	203	EUR 3860	0	0	-	EUR 3860	149		203	
Red	Short	21	22	EUR 586	142	195	EUR 3842	EUR 4428	163	8.59%	217	6.45%
Red	Long	11	19	EUR 796	192	255	EUR 5306	EUR 6102	203	26.60%	274	25.91%
Red	Total	181	244	EUR 5241	334	450	EUR 9148	EUR 14,389	515		694	
Rosé												
Rosé	No Description	11	11	EUR 218	0	0	-	EUR 218	11		11	
Rosé	Short	3	3	EUR 29	26	24	EUR 399	EUR 428	29	62.07%	27	59.26%
Rosé	Long	3	5	EUR 71	23	25	EUR 402	EUR 473	26	57.69%	30	63.33%
Rosé	Total	17	19	EUR 318	49	49	EUR 801	EUR 1119	66		68	
Sekt												
Sekt	No Description	89	178	EUR 2035	0	0	-	EUR 2035	89		178	
Sekt	Short	15	22	EUR 311	94	191	EUR 1792	EUR 2103	109	18.35%	213	16.43%
Sekt	Long	8	16	EUR 145	112	231	EUR 2697	EUR 2842	120	25.83%	247	27.94%
Sekt	Total	112	216	EUR 2491	206	422	EUR 4489	EUR 6980	318		638	
White												
White	No Description	166	236	EUR 3502	0	0	-	EUR 3502	166		236	
White	Short	23	29	EUR 348	193	252	EUR 4970	EUR 5318	216	23.15%	281	16.01%
White	Long	12	13	EUR 299	193	255	EUR 4732	EUR 5031	205	19.02%	268	11.94%
White	Total	201	278	EUR 4149	386	507	EUR 9702	EUR 13,850	587		785	
White Schorle												
White Schorle	No Description	2	5	EUR 28	0	0	€-	EUR 28	2		5	
White Schorle	Short			-	2	4	EUR 22	EUR 22	2	0.00%	4	-25.00%
White Schorle	Long			-	6	13	EUR 72	EUR 72	6	66.67%	13	61.54%
White Schorle	Total	2	5	EUR 28	8	17	EUR 94	EUR 121	10		22	

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