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Understanding Consumer Acceptability and Sensory Drivers of Liking in Montepulciano Wines from Brazil and Beyond

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Abstract: Brazil is an important wine producer in Latin America, with the Santa Catarina (SC) region gaining prominence for producing high-quality wines. Among new red varieties cultivated in SC, Montepulciano has recently gained attention. Despite the growing interest in Montepulciano wines in Brazil, no studies have investigated Brazilian consumer perceptions of this varietal. This gap underscores the need for research to better understand acceptance for this emerging varietal in Brazil. This study aimed (i) to advance consumer insights of Montepulciano wines by evaluating the acceptability of Montepulciano wines from Brazil and those from other countries, and (ii) to identify the key attributes influencing acceptance. Participants (n = 103) evaluated six national and international wines for overall liking and sensory characteristics using the check-all-that-apply technique. The drivers of liking for aroma were floral and red/dark berries, whereas leather and alcohol penalized liking. In-mouth, sweetness, red/dark berries, and soft tannins drove liking, whereas astringent, sour, and bitter impacted liking negatively. Among the Brazilian wines, differences were perceived to be more pronounced for aroma than flavor and mouthfeel. The findings highlight the market potential of Brazilian Montepulciano wines, with liking comparable to some Italian and Chilean counterparts. Understanding consumer sensory responses to these wines is crucial to support production strategies that align with market demands.

Keywords: Montepulciano wine; sensory drivers of liking; CATA; penalty/lift analysis; consumers

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1. Introduction

The genus *Vitis* L. (grape) comprises several species distributed worldwide and represents the primary fruit crop in many countries. Among them, Brazil is an important wine producer in Latin America, with viticulture playing a crucial role in the country's agricultural sector [1]. In Brazil, grape production is predominantly concentrated in the South (73%), particularly in the Rio Grande do Sul region, which accounts for approximately 62% of national grape production. It is estimated that this region accounts for over 90% of the country's total wine and grape juice production [1]. In addition, other regions such as Santa Catarina, Paraná, and São Paulo have gained prominence in fine wine production due to investments in vineyards and the introduction of European grape varieties (*Vitis vinifera*) [1]. This diversification of cultivated varieties has fueled interest in non-traditional grapes, including Montepulciano, whose expansion has been driven by the increasing demand for wines with distinctive characteristics and strong regional identity [2].

Originally from Central Italy, particularly in the Abruzzo region, Montepulciano grape is recognized for its oenological potential and contribution to high-quality wines. In Brazil, its cultivation is relatively recent, with expansion primarily occurring in Santa Catarina and Rio Grande do Sul regions. In Santa Catarina, the area planted with Montepulciano increased from 0.7 hectares in 2009 to 8.7 hectares in 2019 [3]. This growth is part of a broader movement to explore the cultivation of Italian grapes in Brazil, particularly in regions with climatic conditions favorable to their adaptation. Understanding the agronomic potential, enological characteristics, and market viability of Montepulciano in Brazilian terroirs is essential to support the sustainable expansion of its cultivation [3,4].

Montepulciano wines from Abruzzo are characterized by a complex fruity profile, with notes of dark and red fruits, as well as vanilla, coconut, earthy, and chocolate [5,6]. Montepulciano wines from the high-altitude regions of Santa Catarina, Brazil (900–1400 m above sea level) [7], are gaining recognition for their medium acidity that allows for stability over the years and well-structured tannins [8,9]. They also have been described with typical notes of wild berries, and floral and spice notes, which can also evolve into tertiary aromas of chocolate and coffee during aging [3,9,10]. Although acidity is a sensory characteristic of certain red wines, balancing it with other sensory components could appeal to a wider range of consumers overall. In fact, consumers tend to appreciate wine with balanced acidity [11,12], bitterness, sweetness [11], and astringency [13]. Studies by Araujo et al. [14] and Tiwari et al. [15] highlighted that red wines with smoother tannins and lower bitterness were perceived as higher in quality, with positive associations to a soft mouthfeel.

Despite the growing interest in Montepulciano wines in Brazil, no studies have investigated Brazilian consumer perceptions of this varietal, particularly in relation to its sensory drivers of liking. This gap in the literature underscores the need for further research to better understand consumer preferences by identifying the specific sensory attributes that drive wine acceptance for this relatively new wine varietal in Brazil to inform the Brazilian wine industry. Therefore, the present study sought to advance consumer insights of Montepulciano wines by determining the acceptability of Montepulciano wines from Brazil and those from other countries. Secondly, this study aimed to identify the key sensory attributes influencing consumer acceptance of these wines. This research will provide valuable insights into Brazilian consumer preferences to these wines, and guidance to the wine industry in optimizing production and fostering continued investment in high-quality Montepulciano wines.

2. Materials and Methods

2.1. Wine Sample Selection

The samples were composed of national (n = 3) and international (n = 3) commercial wines from Montepulciano grapes (*Vitis vinifera* L.) made using the monovarietal technique and aged in American and/or French oak barrels. Brazilian wines were purchased directly from the wineries, and the wines from Chile and Italy (providing modern and traditional expressions, respectively), which were commercially available in the market, were purchased through local importers. Sample selection was conducted by four experienced wine experts and chefs to ensure samples were representative of the sensory space of red wine but also to generate the sensory lexicon to be used in the consumer study. The wines selected are identified in Table 1.

Table 1. Commercial wine samples.

Sample Name	Wine Name	Year	Time in Barrels	Alcohol (%)	Altitude (m)	Origin
ITA1	Amaranta di Ulisse	2019	12 months	14.0	276 m	Abruzzo, Italy
ITA2	Amorino	2018	12 months	13.5	302 m	Abruzzo, Italy
CHL	Estampa Inspiración	2021	14 months	13.5	120 m	Colchagua Coast, Chile
BR-SC1	Montepulciano	2021	14 months	14.7	1270 m	Santa Catarina, Brazil
BR-SC2	Mastino	2019	24 months	15.0	1270 m	Santa Catarina, Brazil
BR-RS	Montepulciano	2021	3 months	12.5	800 m	Rio Grande do Sul, Brazil

2.2. Consumer Study

2.2.1. Participants

Participants (n = 103) were recruited through posters and/or emails to various departments at the University of Vale do Rio dos Sinos (São Leopoldo campus), containing information about the research, inclusion and exclusion criteria, and contact details for scheduling or clarifying any doubts related to the project. To be eligible to participate in the study, participants had to meet the following criteria: willing to consume commercial red wines, be aged between 18 and 65 years old, not be allergic or intolerant to any of the ingredients (alcohol and sulfites) present in the samples, and not be pregnant or lactating.

2.2.2. Ethical Approval

This study was evaluated by the University of Vale do Rio dos Sinos Human Ethics Committee process (protocol number: 6.173.288). Prior to study attendance, participants were asked to read an information sheet and provide informed written consent. Participants were assigned a unique code to ensure anonymity. All participants were offered a snack as thank-you appreciation for their time and participation, upon study completion.

2.2.3. Product Evaluation Sessions

The study was conducted in the individual sensory booths at the Gastronomy Laboratory at University of Vale do Rio dos Sinos, Rio Grande do Sul, Brazil (Sao Leopoldo campus), where participants attended in groups of up to 8 people, given the number of the booths available. Samples were evaluated under white lighting at room temperature (~23 °C). Data were collected with participant's personal mobiles using Compusense Cloud (Compusense Inc., Guelph, ON, Canada).

Participants attended one session, with two responses for each sample. Overall liking was rated first on a fully labelled nine-point box hedonic scale from "dislike extremely" (1) to "like extremely" (9) [16]. Next, sensory characterization was conducted via CATA (check-all-that-apply), specific to the following sensory modalities: aroma (14 terms) and taste/flavor/mouthfeel (21 terms) (terms and respective definitions are listed in Table S1). Sensory lexicon was defined by the in-house panel and based on previous studies in the literature on red wine [5,6,17–19], which was adjusted by the research team, when necessary, to consumer-friendly terms. Terms were presented in a three-column list according to a balanced design across consumers [20]. Demographic data, type of red wine consumed, and frequency of consumption were measured with a short questionnaire at the end of session.

Sample preparation took place on the day of the study, with a maximum time between portioning and tasting of 20 min to allow sample temperature control and minimize loss of volatiles. Samples (15 mL) were served in transparent ISO wine glasses (18–20 °C), covered with a lid to maintain volatiles in the headspace, and labelled with random three-digit codes (Figure 1). The quantity presented allowed participants to taste the sample at least 2–3 times throughout the session. Participants received instructions on how to evaluate

each sample: first removing the lid to conduct the aroma evaluation (olfactory) and then drinking the wine directly from the glass to assess taste/flavor and mouthfeel (gustatory). A spittoon was provided if the participant preferred to expectorate the wine.

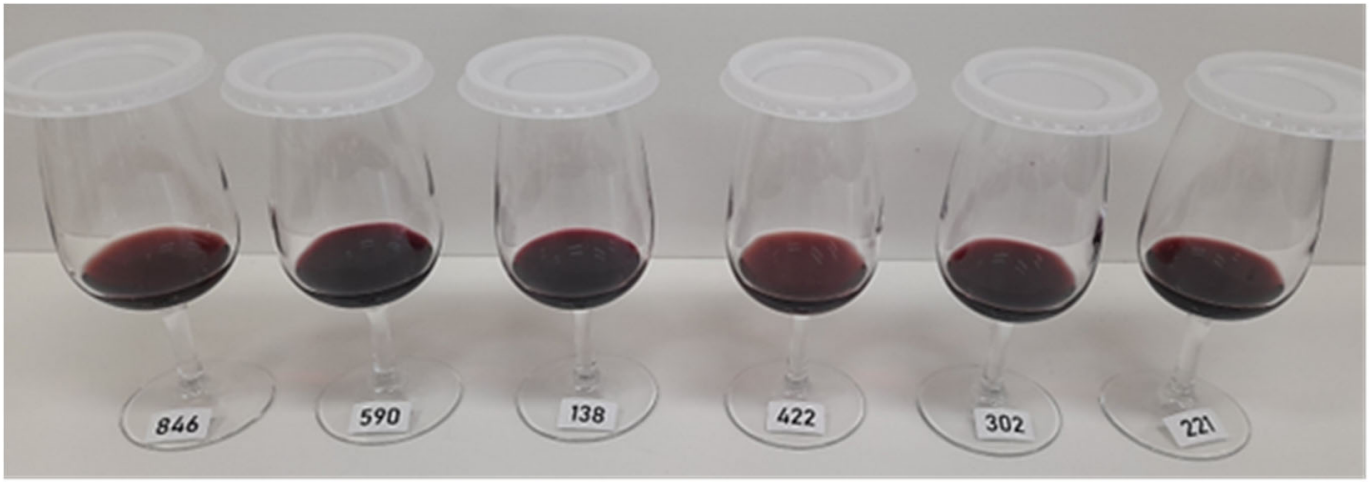

Figure 1. Wine samples, as served to consumers.

2.2.4. Experimental Design

Sample presentation was monadic according to an experimental design based on Williams Latin Square. There was a forced 2 min break between each sample, and to minimize carryover effects participants were instructed to cleanse their palate during this time, in a consistent manner (bite of cracker (Renata, Sumaré, São Paulo) followed by filtered water).

2.3. Data Analysis

Analyses were performed using XLSTAT version 2023.1.6 (Lumivero, New York, NY, USA). The α-risk was set at 0.05.

Two-way ANOVA followed by Tukey's HSD post hoc test was carried out on liking, considering sample as a fixed factor and consumer as a random factor. Following Meyners, Castura, and Carr [20], Cochran's Q tests were performed on each CATA term. This was to determine differences in consumer perception of the samples. The Sheskin test was used for post hoc comparisons. Correspondence Analysis (CA) (using chi-square distances) was performed across all terms to provide a representation of samples and their relationship to the sensory attributes. Penalty/lift analysis, which identifies if the presence of an attribute leads to lower liking, no effect, or higher liking [21], was used to determine the mean impact on liking. A threshold of 10% citation was used to test the significance of the mean impact on liking scores.

3. Results

3.1. Participant Characteristics

Participant demographic information and red wine consumption habits are summarized in Table S2. Participants were predominantly female (67%) and aged between 18 and 64 years with a mean age of 27.89 $\pm$ 10.81. Participants were red wine drinkers, with 78% consuming red wine at least once a month. Regarding the red wine types, Merlot (58%) and Cabernet Sauvignon (58%) were the most consumed, whereas Montepulciano (2%) and Teroldego (2%) were the least consumed among the grape varietals.

3.2. Overall Liking and Sensory Characterization

Mean liking ratings across red wine samples did not differ statistically ($p = 0.307$) with samples having scores ranging from 5.82 (BR-RS) to 6.44 (BR-SC2) (Table 2).

Table 2. Mean overall liking for red wine samples ($n = 6$).

Sample Name	Overall Liking	Standard Deviation
BR-SC2	6.44 [a]	2.09
CHL	6.37 [a]	2.09
ITA1	6.36 [a]	2.10
ITA2	6.35 [a]	2.09
BR-SC1	6.25 [a]	2.10
BR-RS	5.82 [a]	2.10

The same letters are not significantly different (Tukey HSD, 5% level).

Citation frequencies of sensory attribute are shown in Table 3, with nine of thirty-five terms significantly discriminating the samples ($p < 0.05$), which are four aromas (fresh red/dark berries, woody, leather, and alcohol) and five in-mouth terms (sour, vanilla, herbaceous, earthy, and alcohol). Penalty/lift analysis gave insights on the significant attributes driving liking, where positive values indicate a mean lift and negative values a mean drop in liking. For aroma, floral was the largest positive driver of overall liking (1.035) followed by ripe red/dark berries (0.942), and fresh red/dark berries (0.650), whereas leather (−1.103) and alcohol (−0.389) impacted mean liking negatively. For taste/flavor and mouthfeel, sweet (1.094), fresh red/dark berries (1.004) and soft tannins (0.944) impacted mean liking positively, whereas astringent (−0.864), sour (−0.862), and bitter (−0.763) penalized liking. Fourteen of thirty-five terms had low citation (<10%) and, consequently, significance testing was not conducted for dried fruit aroma (0.744), coconut aroma (0.492), vanilla aroma (0.811), chocolate aroma (0.303), floral flavor (1.092), ripe red/dark berries flavor (1.058), dried fruit flavor (0.399), coconut flavor (1.300), vanilla flavor (1.021), chocolate flavor (0.762), herb/spice flavor (−0.099), herbaceous flavor (0.042), tobacco flavor (−0.621), and earthy flavor (−0.920).

Table 3. *p*-values, average citation frequency (%), and mean impact on overall liking.

Sensory Modality	Term	*p*-Value Associated with Cochran's Q Test	Average Citation Frequency (%)	Mean Impact
Aroma	Floral	0.118	19.26	1.035 ***
	Fresh red/dark berries	0.028	19.26	0.650 **
	Ripe red/dark berries	0.136	18.28	0.942 ***
	Dried fruit	0.631	8.74	0.744 [n/a]
	Coconut	0.066	3.72	0.492 [n/a]
	Vanilla	0.069	9.39	0.811 [n/a]
	Chocolate	0.539	4.37	0.303 [n/a]
	Herbs/Spices	0.573	14.72	0.385 [ns]
	Woody	0.019	23.46	0.383 [ns]
	Herbaceous	0.489	11.97	−0.455 [ns]
	Tobacco	0.084	11.17	−0.348 [ns]
	Earthy	0.914	12.62	−0.274 [ns]
	Leather	<0.0001	15.53	−1.103 ***
	Alcohol	0.037	38.35	−0.389 *

Table 3. *Cont.*

Sensory Modality	Term	*p*-Value Associated with Cochran's Q Test	Average Citation Frequency (%)	Mean Impact
In−mouth (Taste/Flavor and Mouthfeel)	Sweet	0.393	10.68	1.094 ***
	Sour	0.049	23.30	−0.862 ***
	Bitter	0.568	25.89	−0.763 ***
	Floral	0.181	8.58	1.092 $^{n/a}$
	Fresh red/dark berries	0.820	11.81	1.004 **
	Ripe red/dark berries	0.053	9.39	1.058 $^{n/a}$
	Dried fruit	0.755	7.12	0.399 $^{n/a}$
	Coconut	0.070	2.75	1.300 $^{n/a}$
	Vanilla	0.009	5.66	1.021 $^{n/a}$
	Chocolate	0.404	3.56	0.762 $^{n/a}$
	Herbs/Spices	0.736	9.22	−0.099 $^{n/a}$
	Woody	0.255	20.55	0.181 ^{ns}
	Herbaceous	0.045	7.44	0.042 $^{n/a}$
	Tobacco	0.355	9.22	−0.621 $^{n/a}$
	Earthy	<0.0001	8.74	−0.920 $^{n/a}$
	Leather	0.915	11.81	0.196 ^{ns}
	Alcohol	0.026	27.99	−0.120 ^{ns}
	Hard tannins	0.110	21.52	−0.147 ^{ns}
	Soft tannins	0.273	17.15	0.944 ***
	Persistent	0.730	24.11	−0.305 ^{ns}
.	Astringent	0.157	23.14	−0.864 ***

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, ^{ns} not significant. $^{n/a}$ not performed if average citation < 10%.

Figure 2a shows a CA biplot (aroma) with the space covered by the first and second factors. Together, they accounted for 76.50% of the data inertia. F1 (59.97%) mainly corresponds to variation from vanilla, floral, fruity, and alcohol to more herbal, tobacco, and leather notes. The F2 axis (16.53%) captured variation from coconut, chocolate, and woody to earthy and dried fruit notes. Accordingly, ITA2 wine was associated with fresh red/dark berries, ripe red/dark berries, and alcohol and floral aromas, whilst ITA1 was mainly associated with woody and chocolate. The BR-SC1 sample was also described by woody, as well as alcohol notes, whilst BR-SC2 was associated with vanilla and ripe red/dark berries. CHL was mostly described as dried fruit, earthy, herbaceous, and herbs/spices, whereas BR-RS was mainly associated with leather and tobacco. Figure 2b charts the significant mean impact scores for olfactory evaluation. Notably, aroma attributes with positive impact (floral, ripe red/dark fruit, fresh red/dark berries) are positioned on the left side of CA, and those with negative impact (leather and alcohol) are on the right side of the biplot.

Figure 3a shows CA (in-mouth) with the space spanned by the two factors. Collectively, they accounted for 76.50% of the inertia in the data. F1 (45.55%) mainly showed variation from berries, persistent, and hard tannins to tobacco notes. The F2 axis (24.04%) captured coconut, woody, herbs/spices, and herbaceous notes. ITA1 was mainly associated with coconut, vanilla, floral, chocolate, and soft tannins, whereas ITA2 and BR-SC2 were associated with herbs/spices, alcohol, and astringent. BR-SC1 was mainly described as fresh and ripe red/dark berries, dried fruit, sour, hard tannins, and persistent. In contrast, CHL was mainly described by herbaceous, leather, and woody. BR-RS was linked with sweet, bitter, earthy, and tobacco. Figure 3b shows the significant mean impact scores for in-month evaluation. The taste/flavor and mouthfeel attributes with positive impact were sweet, fresh red/dark berries, and soft tannins, and those with negative impact were astringent, sour, and bitter.

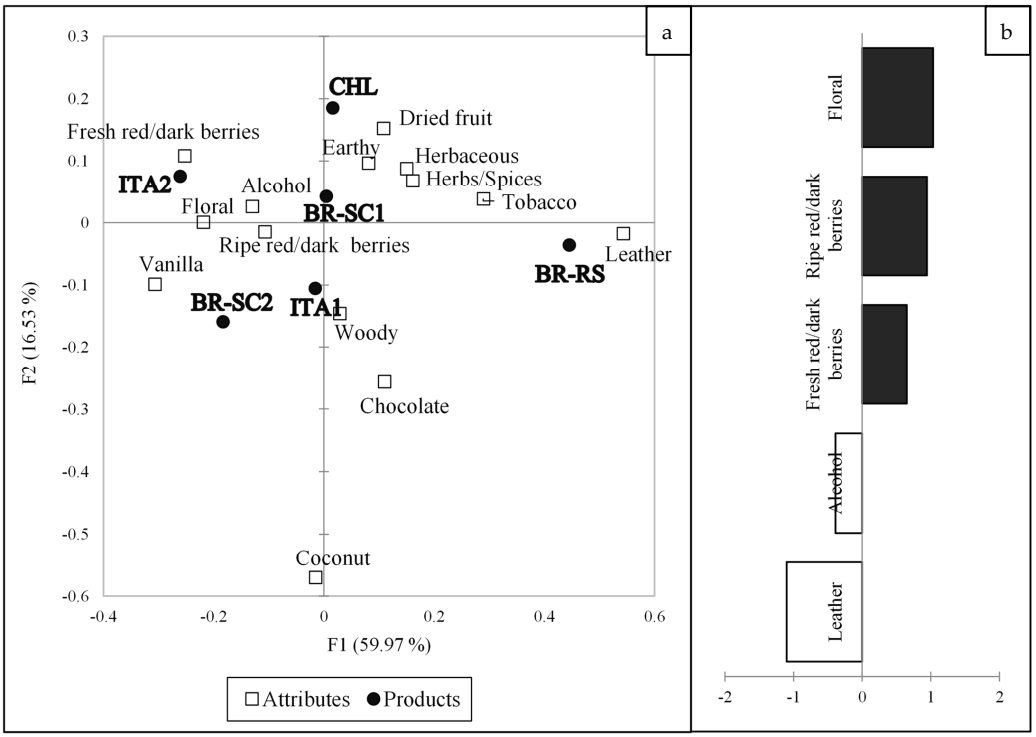

Figure 2. (**a**) Correspondence Analysis (CA) biplot of aroma terms. Samples are represented as black filled circles and terms as unfilled squares. (**b**) Penalty/lift analysis on CATA terms. Bars represent the mean impact on overall liking. Attributes with positive impact are shown as black filled bars; those with negative impact are in unfilled bars.

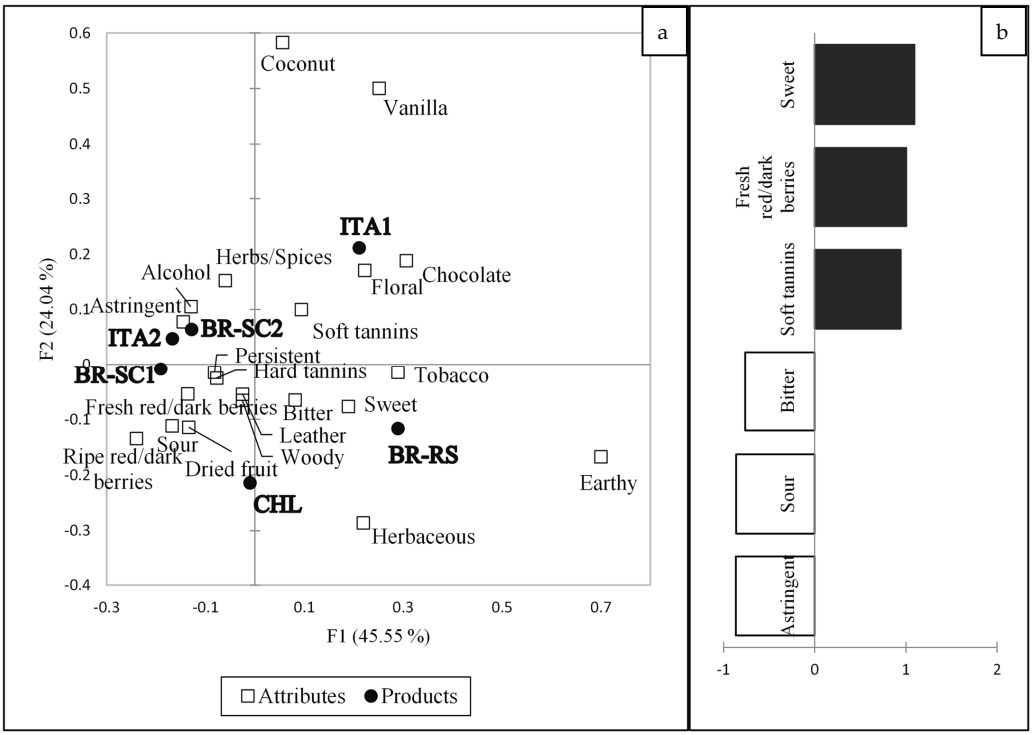

Figure 3. (**a**) Correspondence Analysis (CA) biplot of taste/flavor and mouthfeel terms. Samples are represented as black filled circles and terms as unfilled squares. (**b**) Penalty/lift analysis on CATA terms. Bars represent the mean impact on overall liking. Attributes with positive impact are shown as black filled bars; those with negative impact are in unfilled bars.

4. Discussion

4.1. Consumer Liking of Montepulciano Wines

The average liking scores among the samples ranged from 5.8 to 6.4. It is important to highlight that although ~78% of participants consumed red wine at least once a month, only ~21% reported drinking wine more often (once a week). Previous research in the literature has found that frequency of consumption of different product categories was associated with liking scores, with higher frequency of consumption associated with higher liking scores (e.g., [22–25]. Regarding the types of red wines consumed, Merlot and Cabernet Sauvignon were the most frequently cited by participants. This may be attributed to widespread cultivation of these varietals in Brazil, due to their good adaptation to the country's climate, particularly in the southern regions [3], making these wines more familiar to Brazilian consumers. In contrast, Montepulciano wine was the least cited, likely due to limited familiarity with this grape varietal, as its production and commercialization in Brazil are relatively recent [3].

4.2. Sensory Drivers of Liking

Even though nine sensory attributes discriminated the wine samples (Table 3), only six (floral, ripe and fresh red/dark berries aromas, and sweet, fresh red/dark berries, and soft tannins) were positive drivers of liking (Figures 2b and 3b). According to previous research, the common sensory descriptors of Montepulciano wines are syrupy, dark fruits, cherries, earthy, with robust tannins [26]), and characterized by full-bodied and an intense ruby-red color [3,8,10]. Specifically, some studies on Montepulciano wines from Abruzzo, Italy, have reported these wines with a fruity flavor profile, including dark fruits, cherry, jammy, but also descriptors such as vanilla, coconut, earthy, chocolate, and smooth [5,6]. Abruzzo is an Italian region well known for producing red wines with fruity notes [18], a sensory profile often associated with high-quality wines [27]. In the present study, ITA1 and ITA2 (from Abruzzo, Italy, see Table 1) differed more in the aromatic profile than the in-mouth, and showed a relatively more complex profile covering floral, fruity, and tertiary notes (woody, vanilla, chocolate), in line with previous studies on Italian Montepulciano wines.

In the high-altitude regions of Santa Catarina (Brazil), Montepulciano wines are becoming better known by their good structure in-mouth with typical notes of wild berries red/forest fruits (cherry), floral (violet), and spices (pepper and menthol), which can also evolve into tertiary aromas [3,9,10]. Although BR-SC1 was characterized mainly by woody and alcohol notes, it was also associated with fruity flavors, such as fresh and ripe red/dark berries, as well as dried fruits. On the other hand, BR-SC2 was described by fruity aroma but more herbal/spicy in-mouth. Notably, in the present study, it can be observed that there were contrasts for some attributes between perceived aroma and flavor, but also congruence in smell and mouth (e.g., fresh red/dark berries), as observed by previous research [28,29]. The perception of flavors and aromas is complex due to cross-modal interactions that occur between aroma, flavor, and texture during consumption [30]. The complexity of sensory profile in wines can happen from the interaction of various factors, including terroir among others contributing to the uniqueness of the wine and resulting in sensory profiles that ultimately reflect the region of origin [31]. For instance, aromas of coconut, vanilla, and chocolate can be associated with oak aging [31], which can vary based on the oak material (e.g., type and origin) and its treatment (e.g., seasoning, toasting level) in addition to the process itself (e.g., barrel maturation or oak chip incorporation during fermentation) [31,32]. Additionally, Montepulciano wines from this Brazilian region have been characterized by a notable medium/average acidity, relatively high-alcohol content, in-mouth dryness, and robust and persistent tannins, giving an overall well-structured mouthfeel [8,9]. Fruity flavors are particularly appealing to Brazilian wine consumers [33,34], a preference also

observed in Spanish red wine consumers [35,36]. Similarly, research by Biasoto et al. [37] on red wine revealed that fruity notes associated with grape and blackberries were highly favored by the majority of Brazilian consumers, in line with present study. Additionally, Lattey et al. [13], Mora et al. [38], and Luo et al. [39] reported wines with floral and fruity aromas as preferred by consumers, with a segment showing a particular liking for stronger floral notes. Furthermore, Jiang, Niimi, Ristic, and Bastian [40] highlighted the emotional impact of wine aromas, noting that floral wines generally evoked more positive emotions, whereas green characters were mainly associated with negative feelings.

In the present research, sweetness affected liking positively in line with research by Biasoto et al. [37] conducted with Brazilian consumers. The flavor profile of red wines can vary based on complex interactions between volatile and non-volatile compounds [41,42], but also other elements (e.g., soil, climate, viticulture techniques, grape maturity, vinification process, aging) can impact the formation of these compounds as well as sensory characteristics [43,44]. Anthocyanins and tannins are fundamental aspects of red wine composition, conferring color and structure, respectively. Tannins influence mouthfeel, astringency, and bitterness. Research has shown that higher tannin concentration increases astringency and bitterness [14,45]. Additionally, Araujo et al. [14] and Tiwari et al. [15] highlighted that wines with smoother tannins and less bitterness are perceived as higher quality, with positive associations to soft textures and negative correlations to harsh tannins. In the present study, ITA1 was associated with soft tannins, a characteristic that positively influenced liking, consistent with previous research on Montepulciano wines from Abruzzo, Italy [5,6].

On the other hand, five attributes such as leather and alcohol aromas, sour, bitter, and astringent negatively influenced the liking of these wine samples. Although acidity is a characteristic of some wines, balancing it with other sensory components could appeal to a wider range of consumers. In fact, many consumers consider the right balance between acidity (sourness) [11,12], bitterness, and sweetness [11] as well as astringency [13] to be important. Laaksonen, Ahola, and Sandell [46] indicated that low concentrations of acidity positively influenced the preference for juices and berry products, while bitterness and astringency were generally perceived as unpleasant [28,47]. In a more recent Brazilian study on the acceptability factors of red wines made from hybrid grapes, it was found that attributes such as woodiness, bitterness, dried fruits, and vegetative notes negatively affected wine acceptance [37]. This is partially in line with current findings, where bitterness also penalized overall liking. A moderate level of bitterness can enhance flavor [48]; however, it can be unpleasant for some people due to interindividual differences. This attribute was found to be more closely associated with the BR-RS and CHL wines. In the study by Biasoto et al. [37], dried fruit and herbaceous notes were attributes with negative impact on liking. In the present study, CHL wine was most closely associated with these attributes, indicating that it was a defining characteristic of this product detected initially through the nose and confirmed on the palate. While herbaceous notes are expected in Montepulciano wines [18], they did not have a significant impact on liking, suggesting that other notes have contributed more to the dislike of the wines.

Astringency is a major contributor to the perceived quality and complexity of red wine and is considered one of the most complex mouthfeel sensations [49]. Astringency is a complex tactile sensation related to dryness, wrinkling, and roughness of the oral epithelium [28] and is closely linked to the interaction between phenolic compounds and salivary proteins [4]. In addition, bitterness, acidity, and sweetness can modulate the overall perception of astringency [50]. In previous research conducted by Niimi et al. [51], it was shown that increasing astringency decreased the liking of wines, in line with the current study where the sensation of astringency penalized the liking of samples. A study by Lattey et al. [13] indicated that consumers generally dislike leather-scented wines, and

the research of Crump et al. [32] also revealed that younger consumers tend to be less appreciative of leather aromas in wines, which aligns with current research. One factor that may influence leather aroma is the presence of '*Brett*', a smell associated with the yeast *Dekkera/Brettanomyces bruxellensis* in post-fermentation wines. This smell is often described as 'medicinal/band-aid', 'barnyard/animal', or 'leathery'. In the present study, alcoholic aroma also negatively impacted liking. Alcoholic note was identified as a negative characteristic by 16% of Brazilian consumers [52] and can be interpreted as a defect in wine, depending on its intensity. Cretin et al. [53] found that ethanol can impact the gustatory and olfactory profiles of red wines, playing a multisensory role. As such, if ethanol concentrations are high or influenced by other physical–chemical factors, it may be effectively perceived as a defect. Bindon et al. [54] found that wine with medium alcohol concentration was preferred by Australian consumers.

It is important to highlight that this research presents some limitations. First, the use of a convenience sample may not fully represent the broader Brazilian population (e.g., age), potentially affecting the generalizability of the results. Also, gender imbalance was observed. This is a common issue in consumer studies, particularly when there are no specific targeted measures, such as quotas, to ensure balanced participation across genders. Finally, previous research has shown that the citation frequency of sensory terms in CATA questions serves as a proxy for perceived intensity, meaning it is not a direct measure [55], and therefore the results here provide only an indication of consumer perceptions. To better inform future wine industry strategies, it would be valuable to gain a deeper understanding of consumer perceptions regarding the intensity of aroma, flavor, and mouthfeel attributes in Montepulciano wines. Additionally, further research involving a larger consumer sample to explore consumer segmentation would be an important addition to the literature.

5. Conclusions

In the context of Brazilian consumers, the present research investigated acceptance for Montepulciano wines and associated sensory drivers of liking. This study offers original value by applying established methodologies to the understudied context of Brazilian Montepulciano wine consumption and provides new consumer-centric insights that can be further explored to drive product innovation in the wine sector. Identifying the sensory drivers of Montepulciano liking can guide wine producers in tailoring the taste, flavor, and mouthfeel of Montepulciano wines to better meet consumer preferences. Among the Brazilian wines evaluated, sensory profile differences were more pronounced in aroma than in other sensory modalities. The findings also highlight the promotional potential of Montepulciano wine produced in Brazil, demonstrating acceptance scores comparable to those observed in Montepulciano wines from other countries. To gain a deeper understanding of Brazilian consumers' sensory responses to Montepulciano wines, future research should include a larger sample of consumers, to look into segmentation, and of wines as well, exploring regional and stylistic variations within the country. Understanding these aspects may provide valuable insights for producers, ultimately contributing to the growth and differentiation of Brazilian Montepulciano wines in the global market.

Supplementary Materials: The following supporting information can be downloaded at https://www.mdpi.com/article/10.3390/beverages11030072/s1: Table S1. Attribute list used in the CATA question to facilitate term understanding by consumers. List was provided in writing to participants with a few examples to check throughout the session, if needed. Table S2. Participant information on gender, age, frequency of consumption of red wine, and grape varietals consumed. Table S3. Multiple pairwise comparisons using the critical difference (Sheskin) procedure for olfactory descriptors. Table S4. Multiple pairwise comparisons using the critical difference (Sheskin) procedure for in-mouth descriptors.

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Data Availability Statement: The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Abbreviations

The following abbreviations are used in this manuscript:

CATA	check-all-that-apply
CA	Correspondence Analysis
SC	Santa Catarina

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