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## Drinking Covid-19 away: wine consumption during the first lockdown in Italy

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**Abstract.** In Italy, wine is an integral part of most people's habits and lifestyles. The advent of a traumatic event like the Covid pandemic brought profound changes to people's lives: economic instability and normality disruption led consumers to revise their priorities and modify their consumption and purchase behavior. This study analyses the impact of socio-demographic, psychological, and context-related modifications induced by the pandemic on wine consumption and purchase patterns. Participants completed an online, structured survey, and the sample is constituted by Italian wine consumers. Logistic regression and descriptive techniques are applied to analyze data. Results highlight that wine consumption is a deeply rooted habit among Italian consumers, which resisted the great context modifications that occurred with the pandemic. Moreover, changes in wine consumption are connected to that of other alcoholic beverages. Significant short-term and potential long-term effects are discussed. Information collected is paramount to understanding wine consumers' reactions and behavioral changes induced by the pandemic and effectively plan marketing strategies during new infection peaks.

**Keywords:** Covid-19, wine consumption, Italy, consumer behavior, logistic regression.

**JEL codes:** D12, L66.

### 1. INTRODUCTION

The Covid pandemic is a traumatic event that led to significant changes in people's lives and Italy is among the hardest-hit European countries (Ministero Della Salute, 2021). The rapid and insidious spread of the virus, causing a severe and potentially life-threatening respiratory disease, forced the national Government to take a drastic step by forcing the country into a first, extended lockdown that lasted from March 10th to May 4th, 2020. This period had a profound impact on two significant aspects of the national community: on economy and productivity due to the forced shutdown of most activities, and on mobility and social occasions through the prohibition of physical gatherings and trips both outside and within the region. The disruption of people's habits and lifestyles generated severe psychological discomforts (Colbert, Wilkinson, Thornton, and Richmond, 2020, Arpacı, Karataş and Baloglu, 2020).

The food-and-beverage industry and retail trade were among the few activities allowed to operate by the national law, so access to wine and other alcoholic beverages was still available. Although wine is an essential component of Italian culture and lifestyle (Seghieri, Torrì, and Casini, 2007), the lockdown profoundly transformed wine consumers' routines, leading to potential modifications in wine consumption patterns. Such changes can potentially affect future wine demand, thus the role of wine in Italian culture and lifestyle. Considering the unprecedented circumstances of uncertainty the wine industry is facing, there is a need for reliable information on the impact of the lockdown on wine consumption.

This study aims at responding to this need, identifying factors that triggered modifications of wine consumers' behavior during the first national lockdown. The effect of new consumption habits such as online purchasing is also explored to provide insights into whether such factors can affect demand in the long term. An online survey was conducted on a large sample of Italian consumers of wine and alcoholic beverages (beer and spirits) to achieve these goals. A descriptive analysis is undertaken to highlight significant changes in alcoholic beverage consumption during the lockdown, focusing on both wine and substitution effects among wine, beer and spirits. Finally, factors inducing positive and negative modifications of wine consumption frequency are identified.

## 2. THEORETICAL BACKGROUND

The Covid pandemic is a one-of-a-kind, extraordinary event. Although world economies have already experienced health emergencies due to virus outbreaks such as SARS, the Covid pandemic crisis is unprecedented due to the multi-level and interdependent changes it has induced on a global scale. Consequently, to the best of the authors' knowledge, no similar phenomena in nature and magnitude have been analysed in the existing literature on consumer behavior. Nevertheless, researchers extensively explored the effect of habit disruption and stress on the consumption of both wine and alcoholic beverages. The following sections present the state of the art on these two key aspects, which are identifiable as significant consequences of the pandemic on consumers' lifestyles. Additionally, the role of wine and wine consumption in Italy is discussed.

### 2.1 Wine and alcohol consumption in Italy

Italy is among the major players in the wine market, with a production exceeding 50 million hl/year (OIV,

2020), and being the third world wine consumer after the USA and France. The Italian population consumes over 20 million hectoliters a year (22.4 in 2018), corresponding to 35 liters per capita (OIV, 2020). The latter has considerably shrunk in the last decades (Sellers and Alampi-Sottini, 2016). Still, its decrease is primarily due to changes in the way of consuming wine rather than to a switch of consumer preferences towards other alcoholic beverages. The function of wine has indeed gradually switched from nutrition to pleasure (Hertzberg and Malorgio, 2008), leading the share of daily wine consumers to decrease (17.6% of the population) in favor of non-daily ones, which are growing (36.6% of the population) (ISTAT, 2020). Generally, older generations tend to drink more wine and more often than younger ones (ISTAT, 2020), and contemporary daily wine consumers are likely to be males rather than females (25.9%; ISTAT, 2020). Females, indeed, are generally less prone to alcohol drinking. Compared to other alcoholic beverages such as beer and spirits, wine consumption is to a greater extent rooted in the Italian population's habits: indeed, only 5.3% and 0.6% of consumers, respectively, are daily beer and spirits drinkers (ISTAT, 2020). The widely diffused habit of having wine during meals could be an explanation, and makes food and gatherings with family members important consumption motivations in the Italian scenario. Social relations also represent a relevant consumption motivation, mainly due to the habit of the pre-meal *aperitivo*, when wine is consumed either by the glass or mixed in cocktails. Almost 40% of the Italian population usually drink alcoholic *aperitivo* (ISTAT, 2020).

Finally, health has been thoroughly explored as a factor influencing alcohol drinking behavior. Generally, alcohol consumption can be either considered a potential threat because of the poisonous effect of alcohol overconsumption and the related health risks, or an unhealthy dietary choice, increasing the caloric intake while providing low nutritional value (Bazzani et al., 2020). In this respect, the new post-pandemic lifestyle could prompt a recalibration of priorities (Sigala, 2020), leading people to re-evaluate the outcomes of their behaviors (Wood, Tam, and Witt, 2005). Therefore, the pandemic may constitute a deterrent to alcohol consumption, as human health and survival are at stake.

As regards to wine past research highlights the potential beneficial effects of moderate wine consumption on human health, mostly related to antioxidants in red-colored berries (e.g., Nijveldt et al., 2001; De Lorimier, 2000). The Mediterranean diet can potentially improve such effects. In this sense, wine can be seen as a healthy dietary choice (Fiore, Alaimo, and Chkharishvili, 2019).

On a broader scale, a moderate wine intake can also contribute to hedonistic health and well-being (Fiore, M., Alaimo, L. S., & Chkhartishvil, N., 2019), which is associated with focusing on the self and the present moment (Huta, 2015), favoring sociability and inducing a stress-free mood (Cooper, 1994). The unprecedented circumstances of the lockdown and the uncertainty generated by the pandemic may have emphasized the role of wine drinking in emotional and mental well-being, positively impacting on its consumption frequency.

## 2.2 Psychological difficulties and alcohol consumption behavior

As mentioned above, the Covid-19 pandemic constituted a source of stress and anxiety that have long been associated with increased alcohol consumption. Among the first theories, there is Horton's Tension-reduction hypothesis (1943), identifying alcohol consumption as a way to diminish the feeling of anxiety prompted by stress, which arises either from traumatic events or from environmental stressors. Later studies further explored this connection, specifying that alcoholic beverages consumption can be a way to mitigate negative feelings (Powers and Kutash, 1985). Stress, moreover, may increase alcohol intake when the intention to drink is already present (Dawson, Grant, Stinson, and Zhou, 2005). In this respect, a stronger association exists with being male (Dawson et al., 2005), which can be explained by gender-related stress resistance. Indeed, men and women tend to react differently both to stress and to single stressors, intended as factors inducing stress (APA, 2012). As regards age, older people tend to deal better with negative emotions when subject to stressors, which is believed to be an indicator of stress resilience (Ong et al., 2006), while mainly endorsing positive feelings (Scott et al., 2014). Nevertheless, it should be considered that aging is associated with increased emotional complexity connected to the awareness of "running of time" (Carstensen et al., 2000). Such complexity peaks at middle age (Labouvie-Vief et al., 2007).

In the context of this research, we expect the fear of the SARS-CoV-2 illness, jointly with economic uncertainty and isolation, to trigger an increase in wine and, more generally, in alcohol consumption frequency, especially in males and middle-aged people. Indeed, other researchers have already outlined the high risk of potential alcohol overconsumption prompted by the pandemic's emergence (e.g., Clay and Parker, 2020).

## 2.3 Disrupting (wine) habits

Habits are defined as behavioral dispositions to repeat a set of everyday activities when specific circumstances occur (Wood et al., 2005). As an individual repeats the behavior, triggering factors – e.g., performance time, location, or people the activity is usually shared with – are associated in the memory with specific activities, leading to a set of cognitive, neurological, and motivational changes. Habits, indeed, tend to be context-dependent (Wood et al., 2005). Consequently, habitual actions lose their explicit instrumental nature, separating them from intentions (Neal, Wood, and Quinn, 2006; Wood et al., 2005) and being performed almost unconsciously. As regards wine, its recurrent consumption in Italy is strongly connected with a multitude of attitudes, behaviors, and consumption situations (Presenza, Minguzzi, and Petrillo, 2010), mainly conviviality, e.g., the *aperitivo* or gatherings with friends, colleagues, family and dining out. In this sense, wine drinking can be considered a habit for a large slice of the population. With the closure of restaurants, cafes and the ban of social gatherings during the lockdown, most factors driving wine consumption habits disappeared inducing changes in most wine consumers' drinking habits. Mainly, people usually drinking wine on social occasions may reduce their consumption frequency. At the same time, consumers who were used to consume wine alone are expected either to keep their consumption frequency stable or to increase it. The direction of this change may differ based on the strength of the role of wine in one's habits. The literature highlights that stronger habits survive context changes as intentions may come into play, creating the conditions to preserve them (Wood et al., 2005). Given the strength of the habit of *aperitivo* in Italy, people may look for alternative ways to pursue this activity during the lockdown: the virtual *aperitivo*.

To sum up, the strength of wine consumption as a habit among the Italian population before the pandemic leads to assuming that intentions arose to preserve this, despite the drastic context changes. In this respect, physical barriers imposed with the national lockdown may prompt the emergence of new ways to maintain usual wine consumption habits.

Conversely, the lockdown may show disrupting effects on wine drinking, resulting either in a reduced consumption or in substitution effects.

## 3. MATERIALS AND METHODS

A structured questionnaire was developed focusing primarily on wine while incorporating information on

the consumption of other alcoholic beverages. The survey includes seven sections: consumption and purchase patterns before and after the pandemic (for wine, beer, and spirits), wine consumption context pre- and post-Covid, online wine-related interactions, psychological difficulties (i.e., feeling of isolation, fear of the virus and the economic crisis), positive feelings (i.e., willingness to support local wine producers, possibility to refocus on the self while in lockdown) and socio-demographics. Specifically, isolation is expressed as a latent construct focusing on relational connectedness. Indeed, relational connectedness represents social loneliness, one of the most significant consequences of the lockdown. For this purpose, a 3-items scale based on Hawkey et al.'s (2005) loneliness scale (UCLA scale) was adopted. The 3 items were reduced to a single factor ( $\alpha=.87$ ;  $KMO=.72$ ) and the resulting Isolation scale is inverted (1=strong isolation; 5= weak isolation). The three items used are “since the beginning of the lockdown, there are people I feel close to”, “since the beginning of the lockdown, there are people I can talk to”, and “since the beginning of the lockdown, there are people I can turn to”. Fear of Covid-19 was captured by the statement “I feel vulnerable to Covid-19 outbreak”, while fear of the economic crisis is captured by the statement “I am concerned about the economic impacts of the crisis on myself and my family”. Two statements represented positive feelings: “quarantine has allowed me to focus on the essentials”, and “since the quarantine has begun, I feel like I should buy more local wine to support my country's economy”. All items were measured by 7-points likert scales (1= strongly disagree; 7=strongly agree).

Online data collection was carried out between April 16th and April 29th, 2020 – i.e., during the first lockdown in Italy. As previously mentioned, given the impossibility of reaching the population of interest – consumers of alcoholic beverages – due to the ongoing pandemic and the short time window available, snowball sampling was adopted. This technique represents an efficient and cost-effective data collection method in contexts where subjects of interest are challenging to reach (Ghaljaie, Naderifar and Goli, 2017). Data were collected according to the guidelines provided by the Declaration of Helsinki (WMA General Assembly, 2013).

Drawbacks reported in the literature connected to this sampling technique, primarily due to its convenience nature, can be compensated by the large sample size. The survey was diffused through social networks and via direct contacts. The original study, designed in collaboration with the EuAWE (European Associations of Wine Economists) research group, involved several big players in the wine sector – i.e., Spain, Italy, Portugal and

France. The current analysis refers exclusively to the Italian sample, with a total of 1076 valid questionnaires collected. Table 1 summarizes the descriptive statistics of the sample. The majority of interviewees (57.8%) are males employed in the service sector (57.4%) and with either good (50.1%) or sufficient (36.2%) economic situation. Almost half of the sample live in an urban context, while 30% come from suburban residential areas. A minor share of respondents live alone, with an average household size of three adults (45.7%) and no children (68.4%). Almost all age groups are homogeneously represented, with a slight predominance of 41-50 year old subjects. The age class of over 70s was poorly represented and was aggregated into the 60-70 age group. Similarly, for wine consumption frequency before the lockdown (WCONS\_B), respondents drinking wine once a month or less were aggregated into one category of occasional consumers.

Data analysis relies on descriptive techniques and binary logistic regression (LR), given the categorical nature of the dependent variables (DV) and the use of human-sourced data. This statistical approach was chosen due to its capacity to provide higher robustness when multivariate normality assumptions and equal variance-covariance matrices across groups are not met, as commonly happens in social science research (Hair et al., 2019). Specifically, two LR models were developed to identify factors triggering positive (model B), and negative (model A) changes in wine consumption frequency during the first lockdown. For the sake of the analysis, consumers of alcoholic beverages who do not drink wine and missing income values were excluded through listwise deletion, thus reducing the sample to 1018 respondents. The enter method was preferred to the stepwise procedure, as the latter tends to produce sample-specific results (Hair et al., 2019). Regressors were selected based on the literature. Variance Inflation Factor (VIF) and Tolerance were used to check for multicollinearity, and all values were within the recommended thresholds ( $VIF<5$ ;  $Tolerance>0.2$ ; Hair et al., 2019). Although the primary aim of the analysis is explanatory, additional fitting diagnostics were performed. Overall predictive accuracy of the models was assessed through Receiver Operating Curves (ROC) and Area Under Curve (AUC). According to Hosmer et al. (2013) thresholds, both models show excellent discrimination power (AUC model A = .82; AUC model B = .87).

## 4. RESULTS

### 4.1 Wine consumption: the pre-lockdown scenario

Before the beginning of the pandemic, most respondents were regular wine consumers drink-

**Table 1.** Descriptive statistics of the sample.

	Frequency	%		Frequency	%
<i>Gender</i>			<i>n° adults (respondent included)</i>		
Male	622	57.8	1	22	2.0
Female	454	42.2	2	145	13.5
<i>Age</i>			3	492	45.7
18-29	223	20.7	4	199	18.5
30-40	176	16.4	5	161	15.0
41-50	269	25.0	≥6	57	5.3
51-60	244	22.7	<i>Income</i>		
>60	164	15.2	Very problematic	13	1.2
<i>Employment (n=1075)</i>			Problematic	76	7.1
Agriculture	146	13.6	Sufficient	390	36.2
Industry	104	9.7	Good	539	50.1
Service	618	57.4	No answer	58	5.4
Student	125	11.6	<i>Motivations for wine consumption</i>		
Retired	58	5.4	Socialization (yes)	372	34.6
Unemployed	24	2.2	Relax (yes)	290	27.0
<i>Has children</i>			Health (yes)	118	11.0
No	736	68.4	Food (yes)	738	68.6
Yes	340	14.6	Taste (Yes)	788	73.2
<i>Res. Area</i>			<i>Average bottle price wine before the lockdown (n=1052)</i>		
Rural	240	22.3	<5€	148	13.8
Residential	331	30.8	5-10€	439	40.8
Urban	505	46.9	11-20€	359	33.4
<i>Freq. digital gatherings during the lockdown</i>			21-30€	75	7.0
Did not do it	161	15.0	>30€	31	2.9
Rarely	517	48.0	<i>Has a wine app</i>		
At least once a week	181	16.8	No	750	69.7
Every day	217	20.2	Yes	326	30.3
<i>Wine consumption frequency before the lockdown</i>			<i>Wine consumption frequency in lockdown</i>		
Never (0)	19	1.8	Less frequent	478	44.4
<1 a month (1)	50	4.6	Unchanged	251	23.3
At least 1 a month (2)	134	12.5	More frequent	347	32.2
At least 1 a week (3)	568	52.8			
Daily (4)	305	28.3	<i>Beer consumption frequency before the lockdown</i>		
<i>Beer consumption frequency before the lockdown</i>			Less freq.	563	52.3
Never (0)	127	11.8	Unchanged	333	30.9
<1 a month (1)	158	14.7	More freq.	180	16.7
At least 1 a month (2)	265	24.6			
At least 1 a week (3)	486	45.2	<i>Spirits consumption frequency before the lockdown</i>		
Daily (4)	40	3.7	Less freq.	565	52.5
<i>Spirits consumption frequency before the lockdown</i>			Unchanged	414	38.5
Never (0)	279	25.9	More freq.	97	9.0
<1 a month (1)	309	28.7			
At least 1 a month (2)	260	24.2			
At least 1 a week (3)	214	19.9			
Daily (4)	14	1.3			



	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Willingness to support Italian wine producers buying national wine	2.6	2.6	24.6	37.7	32.4
Feeling of isolation (inverted)	0.9	3.6	26.4	47.8	21.3
Fear of the economic crisis	0.8	5.8	14.2	46.0	33.2
Fear of the virus	3.8	15.0	33.0	40.1	8.1
Refocus on me during the lockdown	2.4	8.7	30.9	44.3	13.7

Notes: where not specified, n=1076. The % column reports the valid percentage.

ing wine at least once a week (52.8%) or daily (28.3%) (Table 1). Concerning other alcoholic beverages, the majority used to consume beer weekly (48.9%) and spirits sporadically (54.6% less than once a month). Based on ISTAT data, the share of daily wine consumers in the sample is higher than the Italian national average (17.6%). Wine was mostly consumed for its taste, paired with food during meals, and to socialize (Table 1). Coherently, it was prevalently drunk with friends and relatives. Adapting the Rabobank wine classification (Heijbroek, 2003), two main segments of wine consumers can be identified based on the average price per bottle: premium wine consumers, purchasing wine ranging between 5 and 10 Euros per bottle (40.8%) and super-premium ones, who usually buy wines priced between 11 and 20 Euros (33.4%). Accordingly, half of the respondents declared a good economic situation (50.1%). Results suggest that the sample comprises wealthier, higher-end consumers compared to the average Italian population, since market data on domestic wine sales report an average price-per-liter of 3.27 € (IRI, 2009). However, such average price is likely underestimated being referred to off-trade sales in supermarkets and discounts. Such sales channels are usually offering wines at a lower average price point compared to restaurants and *enoteche*, i.e., Italian specialized wine shops, which are excluded. Accordingly, *Enoteche* are the third most important sales channel for wine in the sample (45.5%) after cellar door sales (direct sales, 48.0%) and supermarkets (51.2%). Other channels such as e-commerce (12.8%) play a minor role, despite the digitalization level of respondents: indeed, 40% declared that they have a wine app on their smartphone. Anyhow, the share of online buyers in the sample more than doubles the average data reported in the sector literature for online wine sales in developed countries, which is approximately 5% (Higgins et al., 2015). Additionally, 70% of respondents declared a great willingness to support local wine producers in response to the Covid-crisis by preferring domestic wines.

#### 4.2 Psychological difficulties during the lockdown

As expected, psychological difficulties are strongly felt by all respondents. In particular, the greatest worry concerns the negative economic impact of the pandemic (79.2%; Table 1). Economic concerns are strong enough to overcome fear of the virus, which, notwithstanding its life-threatening nature, is suffered by less than a half of the sample. A feeling of isolation, intended as the impossibility to relate with, talk with, and rely on others, also emerges as a dominant feeling for most respondents (69.1%; Table 1), despite most of them not living alone. Positive feelings also emerged, as a large share of interviewees see the lockdown as a chance to refocus on themselves (58.0%). Therefore, among the multitude of negative feelings, respondents could see the bright side of the situation.

#### 4.3 Changes in wine consumption during the lockdown

Most of the wine consumers interviewed kept purchasing wine during the lockdown (75.7%) without changing the average bottle price (Table 2). However, part of the sample either reduced the average bottle expenditure (34.1%) or completely stopped purchasing the product (22.5%).

**Table 2.** Changes in wine purchase pattern following the lockdown.

	Frequency	%
<i>Wine purchase behavior in lockdown</i>		
Does not buy wine	19	1.8
Stopped buying wine	242	22.5
Kept buying wine	815	75.7
<i>Average bottle price variation in lockdown</i>		
Reduced	367	34.1
Unchanged	647	60.1
Increased	62	5.8

Notes: n=1076.

**Table 3.** Evolution of consumption context and sale channel before and during the lockdown.

	BEFORE the LOCKDOWN		DURING the LOCKDOWN		$\Delta$
	n.	%	n.	%	
<i>Wine consumption context</i>					
Friends	857	79.6	83	7.7	-90%
Family	754	70.1	840	78.1	11%
Colleagues	215	20.0	31	2.9	-86%
Alone	193	17.9	284	26.4	47%
Digital gatherings	11	1.0	145	13.5	1218%
<i>Source of the wine consumed</i>					
Supermarket	551	51.2	510	47.4	-7%
Direct sales	517	48.0	154	14.3	-70%
Specialized Wine shop	489	45.4	112	10.4	-77%
Online	138	12.8	198	15.8	43%
Personal wine stock	103	9.6	241	22.4	134%
Food shop	66	6.1	66	6.1	0%
Take away shopping	6	0.6	10	0.9	67%

Note: n=1076

**Table 4.** Online wine shopping during the lockdown.

Online wine shopping in lockdown	n.	%
<i>Purchased wine online in lockdown</i>	198	15.8
for the first time	86	43.4
as usual	66	33.3
more frequently	46	23.2

Notes: n=1076.

In this regard, the presence of over 22% of respondents drinking wine from their personal stock while in lockdown (a 134% increase compared to the pre-pandemic scenario) suggests that a stop in wine purchases does not necessarily correspond to a reduction in its consumption. Crosstabulations support this hypothesis, as the stop in wine purchase is not significantly related to reducing wine drinking frequency during the lockdown (chi-square: .67,  $p = .418$ ). Among respondents who kept purchasing wine, results highlight several changes in their wine consumption habits during the lockdown. First, mobility restrictions and confinement impacted both consumption occasions and buying channels. As can be observed in Table 3, during the lockdown respondents consumed wine mostly with their relatives (78.1%) or alone (26.4%). Virtual meetings became an alternative social drinking occasion for 13.5% of the sample. Although the share of respondents is limited,

this finding suggests virtual gatherings constituted a tool to keep the social dimension of wine alive since the majority of respondents who drunk wine on such occasions also reported socializing as a motivation for drinking it (57.2%; chi-square: 38.07,  $p < 0.001$ ).

As regards sales channels, the mandatory closure of several business activities inevitably impacted on wine purchase patterns, especially for the large share of consumers who used to purchase wine directly from the producer (48.0%) or specialized wine shops (45.4%) (Table 3). Online wine shoppers increased by 43% (Table 3), 43.4% of whom were first-timers (Table 4). This picture leads us to assume that online wine sales partially counterbalanced the inaccessibility of most sales channels.

The lockdown imposed by the Covid-19 pandemic significantly affected wine consumption frequency as well: 23% of the sample kept drinking wine as often as before the pandemic, while the great majority either increased (32.2%) or decreased it (44.4%). Model A and model B investigate factors impacting the decrease (DV1) and increase (DV2) in wine consumption frequency among wine consumers during the first lockdown (Table 5). First, results reveal that none of the psychological difficulties directly affects neither DV1 nor DV2. Both decrease and increase in wine consumption frequency are connected to a parallel modification of beer (VARBC) and spirits (VARSC), suggesting variations in wine consumption are attributable to a change in the overall alcoholic beverages' consumption pattern. Nevertheless, the effect of beer consumption frequency is considerably greater than that of spirits. Accordingly, when considering the total expenditure for all alcoholic beverages in the lockdown, only that of wine (for model A and B) and beer (for model B) significantly affect the DV.

Focusing on model A (DV1), a reduced wine consumption frequency is related to a decreased beer consumption (VARBC\_RED). Accordingly, these respondents did not increase total expenditure on wine (INCREXP\_W) and no significant effects emerge for variations in the total expenditure on beer (INCREXP\_B). None of the sales channels show significant impact on the DV1. Families with children (CHILDY) are less likely to have reduced wine consumption in lockdown. On the contrary, a significant positive effect emerge with age, suggesting that older subjects have greater odds of shrinking their wine consumption frequency in lockdown. Among the reasons for drinking wine, health and relaxation emerge as significant factors impacting DV1: while drinking to relax (R\_RELAX) decreases the odds of reducing wine consumption frequency in lockdown, consuming wine for its health properties (R\_HEALTH) seems to promote this behavioral modification. Despite

**Table 5.** LR on the decrease (DV1; Model A) and increase (DV2; Model B) of wine consumption frequency in lockdown.

	A - Reduced wine consumption frequency in lockdown (DV1)							B - Increased wine consumption frequency in lockdown (DV2)						
	B	S.E.	Wald	Exp(B)	95% C.I. for EXP(B)		Sig.	B	S.E.	Wald	Exp(B)	95% C.I. for EXP(B)		Sig.
					Lower	Upper						Lower	Upper	
AGE	0.12	0.06	3.67	1.13	1.00	1.28	0.06 *	-0.08	0.07	1.28	0.92	0.80	1.06	0.26
GENDER	-0.13	0.17	0.57	0.88	0.63	1.23	0.45	-0.68	0.20	11.32	0.51	0.34	0.75	0.00 ***
INCOME (good)			0.10				0.95			0.31				0.86
INCOME 1 (sufficient)	0.05	0.16	0.08	1.05	0.76	1.45	0.78	-0.01	0.19	0.00	0.99	0.68	1.44	0.96
INCOME (bad)	0.06	0.29	0.04	1.06	0.60	1.89	0.84	-0.19	0.34	0.31	0.83	0.43	1.61	0.58
CHILDY	-0.44	0.17	6.71	0.65	0.46	0.90	0.01 **	0.46	0.19	5.67	1.58	1.08	2.30	0.02 ***
CRISFEAR	-0.10	0.09	1.28	0.90	0.76	1.08	0.26	0.04	0.10	0.13	1.04	0.85	1.27	0.72
ISOFEEL	0.16	0.10	2.45	1.17	0.96	1.42	0.12	-0.14	0.12	1.52	0.87	0.69	1.09	0.22
VIRUSFEAR	0.08	0.09	0.92	1.08	0.92	1.28	0.34	-0.08	0.10	0.67	0.92	0.76	1.12	0.41
REFOFEEL	-0.11	0.09	1.42	0.90	0.76	1.07	0.23	0.18	0.10	3.02	1.20	0.98	1.46	0.08 *
VARBC_NO			61.74				0.00			46.82				0.00
VARBC_RED	1.28	0.19	44.28	3.59	2.47	5.24	0.00 ***	0.45	0.23	3.68	1.56	0.99	2.47	0.06 *
VARBC_INCR	-0.18	0.31	0.33	0.84	0.46	1.53	0.57	2.24	0.34	44.17	9.40	4.86	18.20	0.00 ***
VARSP_NO			11.44				0.00			12.95				0.00
VARSPC_RED	0.52	0.19	7.91	1.68	1.17	2.41	0.01 ***	0.28	0.22	1.57	1.32	0.86	2.03	0.21
VARSPC_INCR	-0.29	0.35	0.66	0.75	0.38	1.50	0.42	1.37	0.38	12.94	3.94	1.87	8.30	0.00 ***
INCREXP_W	-1.80	0.21	77.15	0.17	0.11	0.25	0.00 ***	2.77	0.21	169.74	15.92	10.50	24.13	0.00 ***
INCREXP_B	0.36	0.27	1.72	1.43	0.84	2.44	0.19	-0.96	0.32	9.14	0.39	0.21	0.71	0.00 ***
INCREXP_SP	0.33	0.38	0.76	1.40	0.66	2.96	0.39	-0.36	0.41	0.78	0.70	0.31	1.56	0.38
BL_ALONE	0.34	0.21	2.57	1.41	0.93	2.14	0.11	-0.19	0.25	0.62	0.83	0.51	1.33	0.43
BL_FAM	0.36	0.19	3.76	1.44	1.00	2.07	0.05 **	0.13	0.21	0.38	1.14	0.75	1.72	0.54
BL_FRICOL	-0.15	0.22	0.46	0.86	0.56	1.32	0.50	0.32	0.26	1.49	1.38	0.82	2.31	0.22
LC_ONLINE	0.39	0.24	2.59	1.47	0.92	2.36	0.11	-0.31	0.28	1.25	0.73	0.43	1.26	0.26
FREQ_DIGIMEET	0.02	0.08	0.04	1.02	0.86	1.20	0.84	-0.10	0.10	0.96	0.91	0.75	1.10	0.33
R_SOC	-0.22	0.17	1.66	0.80	0.57	1.12	0.20	-0.09	0.20	0.20	0.92	0.62	1.36	0.66
R_TASTE	-0.11	0.19	0.35	0.89	0.62	1.30	0.56	0.50	0.23	4.59	1.65	1.04	2.61	0.03 **
R_FOOD	-0.11	0.18	0.41	0.89	0.64	1.26	0.52	0.18	0.21	0.73	1.19	0.80	1.79	0.39
R_HEALTH	0.81	0.26	10.22	2.26	1.37	3.72	0.00 ***	-0.18	0.28	0.41	0.84	0.48	1.45	0.52
R_RELAX	-0.43	0.19	4.84	0.65	0.45	0.96	0.03 **	0.74	0.22	11.86	2.10	1.38	3.20	0.00 ***
SCBL_SUPER	0.06	0.17	0.11	1.06	0.76	1.46	0.74	-0.13	0.20	0.44	0.88	0.60	1.29	0.51
SCBL_ONLINE	0.39	0.23	2.70	1.47	0.93	2.32	0.10	-0.11	0.27	0.17	0.90	0.53	1.51	0.68
SCBL_DSALE	0.15	0.17	0.79	1.16	0.84	1.61	0.37	0.01	0.20	0.00	1.01	0.69	1.48	0.98
SCBL_WSHOP	-0.07	0.16	0.16	0.94	0.68	1.28	0.69	-0.18	0.19	0.93	0.84	0.58	1.21	0.34
WCONS_B (occasional)			30.26				0.00			24.37				0.00
WCONS_B (regular)	-0.57	0.26	4.77	0.57	0.34	0.94	0.03 **	0.85	0.32	7.20	2.33	1.26	4.34	0.01 **
WCONS_B (daily)	-1.04	0.19	28.84	0.35	0.24	0.52	0.00 **	1.15	0.23	24.21	3.16	2.00	5.01	0.00 ***
LOC_SUPP	-0.21	0.09	6.18	0.81	0.68	0.96	0.01 **	0.22	0.10	4.65	1.24	1.02	1.51	0.03 **
Constant	0.30	0.75	0.15	1.34			0.69	-4.26	0.90	22.43	0.01			0.00

Notes: n=1018. \* p < .09; \*\* p < .05; \*\*\* p < .001.

A: Hosmer and Lemeshow Test: chi-square 10.24, sig. 0.249. Pseudo R-square: Cox & Snell=0.28, Nagelkerke=0.38. Accuracy= 75.6%.

B: Hosmer and Lemeshow Test: chi-square 11.93, sig. 0.154. Pseudo R-square: Cox & Snell=0.36, Nagelkerke=0.50. Accuracy= 82.3%.

the closure of bars and ban on social gatherings, no significant effects emerge from drinking wine to socialize (R\_SOC) as well as from drinking with friends and col-

leagues before Covid (BC\_FRICOL). Wine consumption frequency before the pandemic (WCONS\_B) negatively impacts DV1 for regular consumers (i.e., drinking wine



**Table 6.** Substitution effect in favor of wine and beer during the lockdown.

	Increased wine consumption frequency in lockdown			
	No		Yes	
	Count	%	Count	%
Other	287	40.8%	175	53.2%
<sp, beer unchanged	54	7.8%	16	4.9%
<beer, spirits unchanged	81	11.6%	37	11.2%
<beer&sp	273	39.6%	106	30.7%

Notes: n = 1018. Pearson's Chi-square test: 15.39; p = .002.

at least once a week, and daily wine drinkers). Moreover, people who used to drink wine with family members before Covid (BC\_FAM) show higher odds for a decreased consumption frequency. Finally, consumers willing to support Italian wine producers (LOC\_SUPP) show significantly lower odds of drinking less frequently in lockdown.

Factors driving an increased consumption frequency in lockdown (model B; DV2) are having children (CHILDY), willingness to refocus on oneself (REFO-FEEL), drinking wine for relaxation (R\_RELAX) and for its palatability (R\_TASTE), and the willingness to support domestic wine producers. Indeed, all these predictors are connected to greater odds of drinking wine more often in lockdown. Conversely, being female and spending more on beer decrease the odds of having consumed wine more often during the lockdown.

Model B highlights a potential substitution effect in favor of wine. DV2 is significantly affected by increasing (VARBC\_INCR) and decreasing (VARBC\_RED) beer consumption frequency, although the former's effect shows a greater magnitude. Crosstabulations (Table 6) reveal that 30.7% of interviewees who drink wine more often in lockdown have simultaneously reduced both beer and spirits consumption frequency, and the 11.2% has reduced beer drinking only. This substitution effect involves less than half of the sample, since 53.2% respondents have increased wine and at least one other alcoholic beverage.

## 5. DISCUSSION AND CONCLUSIONS

Covid-19 has profoundly changed people's lifestyle, disrupting everyday habits and exposing them to considerable psychological pressure. Our results highlight that such pressure arises primarily from concerns for the

economic and financial uncertainty caused by the pandemic, followed by the fear of the virus.

Wine consumption is confirmed to be deeply rooted in the Italian population's habits. Descriptive analysis reveals a major pre-existing preference for wine, which was the most assiduously consumed alcoholic beverage before the lockdown. Despite the disruptive effect of the pandemic, our results highlight that the vast majority of the sample kept purchasing wine (75.7%) without lowering the average price per bottle (60.1%). Market data on agri-food products and supply during the pandemic confirm a moderate but positive trend for wine sales during the lockdown (+9%), performing better than other beverages (+6%) (ISMEA, 2020a, 2020b, 2020c). Accordingly, most respondents kept consuming wine notwithstanding the substantial context changes. In this respect, both regular and daily wine drinkers, who are the most common consumers within the Italian population (ISTAT, 2020), are likely to have drunk wine more frequently during the lockdown rather than the reverse. Consistent with Wood et al. (2005), these findings represent an indicator of strength of the wine consumption habit. Results also show that 22.5% of the sample stopped purchasing wine in lockdown, with a similar number of respondents (22.4%) who consumed wine from their wine stock. Although the current study did not investigate the size of this stock, this finding partially explains the non-significant association between a stop of wine shopping and reducing wine consumption in lockdown. It also reveals the presence of a wine stock in an interesting slice of Italian wine consumers, which calls for further investigations.

Nevertheless, the impact of shock and habits disruption emerges on sales channels, consumption occasions, and wine consumption frequency. Following the pandemic, most consumers kept buying wine in supermarkets, while mobility restrictions significantly penalized other important sales channels such as wine shops and direct sales. The online channel partly benefited from the lockdown, recording a 43% increase and managing to attract new buyers. Although the relevance of online wine sales is limited, these extraordinary circumstances may lead to long-run effects on this sale channel, accelerating its growth in two ways: by pushing consumers to try online wine shopping, and by encouraging wine retailers to improve/create their online offer. This positive trend is in line with market data, with the online demand for agri-food products recording a 141% growth during the two months of lockdown (IRI, 2020). Consumption occasions also suffered from the stringent limitations imposed, as the only options during a lockdown is consuming wine alone or with household members.

It is reasonable to believe that such effects are temporary, as the reduction of wine consumption frequency in lockdown by people who used to drink wine at family gatherings is likely a consequence of a forced separation from other family members.

Virtual gatherings emerge as a new drinking occasion, although for a limited share of consumers. In this study, the new trend of the virtual *aperitivo* is intended solely as virtual gatherings organized independently by consumers. Given the prolonged duration of the pandemic and the importance of social occasions as a wine consumption motivation, the diffusion of virtual drinking activities may have increased. Moreover, wineries and wine shops started offering online tasting experiences as both a marketing tool to keep existing loyal consumers and to attract new ones. Therefore, further investigations are needed to deeply explore the future potential of virtual wine experiences and their role in wine marketing, providing suggestions on how to effectively design them.

Regarding wine consumption frequency, most respondents modified it either positively (32.2%) or negatively (44.4%). Being a woman reduces the odds of having increased wine consumption frequency. Since the whole population was subjected to the same considerable pressure originating from the pandemic, it seems that drinking wine did not represent a relief for women in lockdown as it potentially did for men. This result is in line with past findings from, e.g., Dawson et al. (2005) and APA (2012).

Variations in wine consumption frequency appear to go hand-in-hand with other alcoholic beverages, moving in the same direction. Notably, the increase in wine consumption frequency in lockdown is associated with a simultaneous change in spirits and especially beer. In this respect, we can assume that the lockdown may constitute a burden encouraging alcohol consumption. This finding is in line with the existing literature identifying traumatic situations as a promoter of alcoholic beverages consumption (e.g., Bartone and Homish, 2020; Bartone et al., 2017; Clay and Parker, 2020; Horton, 1943; Powers and Kutash, 1985). In this regard, it should be noted that this study focuses on consumption frequency, while no information is collected on volumes consumed.

Substitution effects are qualitatively evaluated based on changes in consumption frequency. A minor substitution effect in favor of wine is detected. Still, its limited extent suggests that the lockdown pushes consumers to drink more often the alcoholic beverages they are used to consume rather than switching from one to another.

Regarding families, the model shows that having children increases the odds of a higher consumption fre-

quency in lockdown. This finding suggests that forced 24-hour cohabitation and the prolonged home-confinement may turn parenthood into a reason for drinking more frequently. Further analyses should be conducted to explore this relationship and the behavioural role of parenting as a stressor in the context of the pandemic.

Accordingly, relaxation and hedonistic health and well-being – i.e., focusing on the self (Huta, 2015) – trigger an increase in wine consumption frequency, highlighting wine may have played a role in mitigating the psychological pressure caused by the lockdown in a context where other alternatives to relax were not available.

Besides, the fact that drinking wine for its health benefits is linked to a reduced wine consumption frequency in lockdown, jointly with the connection between a reduced wine and beer drinking frequency, suggest the context of the pandemic brought a share of respondents to re-evaluate their personal priorities (Sigala, 2020; Wood et al., 2005), while discouraging alcoholic beverages consumption. Indeed, drinking alcohol in a context where people's survival is at stake may assume a negative connotation (Bazzani et al., 2020).

To conclude, many factors impacting wine consumption seem to be context-related and therefore are expected to have short-term effects. Nevertheless, some of them may affect wine demand in the long term: mainly, the emergence of virtual wine experiences and the growth in online wine shopping. Still, wine consumption appears to be a strong habit among Italian consumers, which managed to survive the profound context changes induced by the pandemic. These are encouraging signals for Italian wine producers, especially considering the strong willingness to support domestic wineries that emerged among respondents. Indeed, willingness to support domestic wine producers by purchasing their wines shows positive effects on wine consumption frequency in lockdown, promoting its increase. Future studies should validate the results of this survey and highlight potential changes occurred with the evolution of the pandemic in light of the uncertainty around its future evolution, which creates a metamorphic context that makes it particularly difficult to forecast how consumers will react. Indeed, on the short-run, similar phenomena are capable of jeopardizing sectors dynamics (Vergamini et al., 2021) with relevant financial consequences for the involved stakeholders. Within the perspective of a prolonged health emergency, information on the development of wine consumers' behavior in the current, unprecedented circumstances such as that provided by this study, is strategic to help actors of the wine sector in planning future market strategies. Indeed, the continued circulation of the virus

requires wine producers and stakeholders to adapt to Covid-induced changes in consumer behavior that can no longer be looked at exclusively as transitory.

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