

Analysing consumers' decision-making process for non-alcoholic spirit drinks and dealcoholized aromatized wines

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Abstract. The interest in the NoLo (No Alcohol/Low Alcohol) beverages has grown, driven by evolving consumer preferences and societal trends, including a wave of health consciousness, and has gained strategic attention within the industry. Despite the advantages identified in the consumption of NoLo alcoholic drinks, many barriers exist. The analysis of the literature highlights the need for research to explore the decision-making process and the role of psychological and sociocultural factors in driving the choice of NoLo beverages. This study analyses consumption patterns and perceptions of regular drinkers and non-drinkers of alcoholic beverages focusing on viticultural products towards non-alcoholic spirit drinks and dealcoholized/no-alcohol aromatized wines as they are or as ingredients of NoLo cocktails.

1. Introduction

In recent years, the consumption of alcoholic beverages is changing, driven by evolving consumer preferences and societal trends. Among these changes, the emergence and proliferation of NoLo (No Alcohol/Low Alcohol) alcoholic beverages have gained significant attention within the industry [1]. As pointed out by Nicholls [2], NoLo alcohol beverages are produced to emulate the appearance, aroma, and taste of alcoholic beverages, potentially facilitating a sense of social integration when consuming a product that closely resembles alcohol.

These beverages include mainly low/no alcohol beer, however also low/no alcohol wine, (partially) dealcoholised wines, low/no alcohol beverages emulating spirit drinks and aromatised wine products are gaining more and more attention of both producers and consumers.

This paper aims at analysing drivers, barriers and consumption patterns and perceptions of regular drinkers and non-drinkers of alcoholic beverages towards two categories of alcoholic beverages produced from wine grape: no-alcohol version of spirit drinks of viticultural origin and of aromatized wines. The Theory of Planned Behaviour has been applied to analyze the role of attitudes, important others, perceived behavioural control and personal traits in influencing the intention to consume no alcoholic beverages for regular drinkers and non-drinkers.

A survey by questionnaire on drivers and barriers for the intention to consume NoLo alcohol spirit drinks and DAWs has been conducted by a panel provider.

2. Background literature

Motivations for consuming NoLo products are primarily driven by health concerns and a desire to mitigate the effects of alcohol consumption, particularly among individuals over 30 years old [1, 2]. The findings of previous research provided first insights for the industry and the regulators on how to connect with the older consumers that should be related to the negative effects of alcohol consumption, especially those tied to health, driving, and being able to do later activities with focus and without being dizzy or having a hangover [1].

However, the literature highlights that craving and desire to drink can paradoxically increase after consuming NoLo drinks among individuals with alcohol use disorder [3]. Furthermore, heavy drinkers tend to use NoLo drinks as complementary goods rather than as substitutes of alcoholic drinks [3].

A study by Anderson et al. [4] conducted on NoLo beer highlights that taste and prior experience with a brand are important drivers of consumption. Beyond intrinsic and extrinsic product attributes, personal values emerge as drivers of the intention to drink NoLo alcohol products, particularly in the wine context [5].

Despite the advantages identified in the consumption of NoLo alcoholic drinks, many barriers exist. If avoiding hangovers is highlighted as a positive aspect of NoLo alcoholic beverages [2], the lack of alcoholic effects emerges as an obstacle for the intention to consume [1]. Social pressure to drink, and the preference for traditional alcoholic beverages for fun and entertainment are also pointed out in the literature as limitations in consuming NoLo alcohol drinks [1]. At the same time the novelty and “cool factor” of the NoLo spirits has been considered a possible object of effective communication messages and advertising that resonate with a shifting belief among consumers about alcohol not being a necessary ingredient for having fun because NoLo spirits offer a compelling alternative for socializing and celebrating [1].

When analysing consumption occasion for NoLo alcoholic products, it emerges that people tend to consume them more in the afternoon than at night [1]. They are products to consume during additional consumption occasions, rather than typical occasions for the consumption of alcoholic beverages [2, 4]. Going deeper into the analysis of consumption occasions, Nicholls [2] highlights that NoLo alcohol products are often perceived as ‘temporary solutions’, anticipating a return to regular alcoholic beverages shortly thereafter, in environments and occasions that remain designated for alcohol consumption.

The literature highlights that such products are identified by different terms ‘no’, ‘free’, ‘zero’ alcohol products and the need for a global harmonization [6]. At the same time research on labelling suggests that the labelling of NoLo alcohol products is often inconsistent and not always clear [4].

In 2023, a picture has been provided of the EU market situation concerning beverages with a lower alcohol content than the minimum alcoholic strength required for the alcoholic beverages they refer to, as well as a projection into hypothetical future production and consumption trends even in absence of a correspondent legal framework [7]. The analysis of the legislation governing the production and marketing of NoLo alcohol beverages is heavily connected with the analysis of the labelling practices for those products, and of the related provisions (wherever any are in place). International food law does not provide a shared legal definition of ‘alcoholic beverages’ as such and things get worse with rules for the use of the recent terminology ‘low alcohol/no alcohol’. Dealcoholized wines and partially dealcoholized wines have been recently covered by specific EU legislation (revision of Regulation 1308/2013 in December 2021). The products sold as ‘non-alcoholic spirit drinks’ include different typologies of alcohol-free alternatives to traditional spirit drinks, there is no legal definition of a ‘low/no alcohol spirit drink’ in the international food law, and the production process for products within this category may vary significantly.

Similarly, the no-alcohol version of aromatized wines are not codified in terms of definitions or production practices. Even if the class of products under the name ‘aromatized wine’ which belong to aromatised wine

products (AWPs) could not be of immediate awareness for all consumers, most of the time they are used (e.g. *Vermouth*) in well-known mixed alcoholic beverages and iconic cocktails (e.g. *Manhattan*, *Negroni*). No specific studies are focused on such products.

The analysis of the literature highlights the need for research to explore the decision-making process and sociocultural factors in driving the choice of NoLo beverages [1, 4, 8]. This study aims to analyse consumption patterns and perceptions of regular drinkers and non-drinkers of alcoholic beverages towards two categories of alcoholic beverages produced from wine grape: no-alcohol version of spirit drinks of vitivinicultural origin and of aromatized wines. This choice is informed by market statistics: in 2022, the market for NoLo alcoholic beverages surpassed 11 billion dollars, with 70 percent falling within the non-alcohol category [9]. The EU NoLo spirit drinks market resulted for a value of about 170 million Euros and 21 million litres; the EU NoLo aromatised wine products market have been valued at around 16 million Euros and 2 million litres [7].

Even if NoLo spirits drinks and NoLo AWP represent a small fraction of the market, a promising increase of prospective market of different typologies of alcohol-free alternatives to traditional spirit drinks *versus* their alcoholic counterparts is expected in the next five years, both in value and in volume in EU, UK and US. At the same time the AWP market is growing fast, and most of consumers’ interest is for NoLo *Vermouth* [7]. Both products should be considered for consumption as they are and for obtaining NoLo cocktails. To our knowledge, this is the first study conducted on consumer behaviour toward these two product categories.

3. Methodology

A survey by questionnaire was built to meet the research objectives. The questionnaire was structured into four main parts. The first part included socio-demographic questions. The second part included questions about consumption habits, specifically asking whether respondents drink alcoholic beverages and the frequency of their consumption of non-alcoholic beverages analysed in the study. After this question, a description of the product categories analysed in this study (no-alcohol version of spirit drinks of vitivinicultural origin and dealcoholized/no-alcohol version of aromatized wines) were presented to respondents in order to homogenise knowledge and avoid misunderstandings. It was also clarified that respondents could have already consumed such products as they are (pure), or mixed in well-known cocktails.

Following this, the third and fourth sections of the questionnaire each focus on a specific product category and include 7-point Likert scale questions to analyse the drivers and barriers to consumption. Drawing from the Theory of Planned Behaviour (TPB) [10], questions on intention to consume non-alcoholic spirits products of vitivinicultural origin (session three) and dealcoholized/no-alcohol aromatized wines (session four),

attitudes towards the product categories, influence of important people for the respondents (subjective norms) and perceived behavioural control in consuming the product categories were asked.

The Theory of Planned Behavior (TPB) presents a behavioural model in which consumption behaviour is influenced by behavioural intention. This intention is, in turn, influenced by attitudes (positive or negative perceptions toward the behaviour), subjective norms (the opinions of ‘important others’ that influence the performance of the behaviour), and perceived behavioural control (the individual’s perception of their ability to perform the behaviour). According to the theory, perceived behavioural control also plays a direct role in influencing behaviour.

This study draws from the TPB to analyse determinants of behaviour and behavioural intention to consume non-alcoholic spirits products of vitivinicultural origin and dealcoholized/no-alcohol aromatized wines and meet the research objectives.

All items are collected through 7-point Likert scales or semantic differential scales. Intention is analysed through a single item (*I intend to consume xxx in the next month*), attitudes are analysed with seven items (*Consuming xxx in the next month will be...unfashionable vs fashionable, damaging vs beneficial, negative consequences vs positive consequences, not pleasant vs pleasant, not enjoyable vs enjoyable, not relaxing vs relaxing, unhealthy vs healthy*), subjective norms are analysed with three items (*Most people I know... Most people whose opinion is important to me... People around me... think that I should consume xxx in the next month*) and perceived behavioural control is analysed by three items (*Drinking xxx in the next month will be... Extremely hard vs Extremely easy, Totally not dependent on me vs Totally dependent on me, Extremely unlikely, even if I want vs Extremely likely if I want*).

The questionnaire was administered to US consumers. The US market is composed by a diverse population, and the market is experiencing a growing trend in the consumption of non-alcoholic beverages, including spirits and wines, due to increasing health consciousness and lifestyle changes. This trend makes the US a significant market for these products [11].

The questionnaire was administered by a panel provider, ensuring it was representative of the US population in terms of gender, age, and ethnicity. A sample of 307 respondents was obtained (Table 1).

Table 1. Socio-demographic characteristics of the sample (n=307).

	n	%
Gender		
Male	133	43.3
Female	164	53.4
Other	10	3.3
Age class		
21 to 24 years old	31	10.1
25 to 34 years old	56	18.2
35 to 44 years old	59	19.2
45 to 54 years old	48	15.6
55 to 64 years old	73	23.8
65 to 74 years old	34	11.1
75 and older	6	2.0
Education		
High school	104	33.9
Some college/Vocational	24	7.8
Bachelor	126	41.0
Master	45	14.7
Ph.D.	8	2.6

Data analysis was conducted applying univariate and bivariate techniques. Univariate data analysis was applied: i) to explore consumption frequencies of products included in the two analyzed categories, ii) to analyze drivers and barriers in consuming non-alcoholic spirits products of vitivinicultural origin and dealcoholized/no-alcohol aromatized wines and iii) to describe the analysed constructs in the light of the two product categories. Bivariate statistics are applied 1) to analyse determinants of intention and consumption of non-alcoholic spirits products of vitivinicultural origin and dealcoholized/no-alcohol aromatized wines, and the Pearson’s *r* is applied; and 2) to analyse differences between drinkers and non-drinkers of alcoholic beverages, and the Whitney U Test is applied.

The Pearson correlation coefficient is used to analyse the magnitude and direction of the relation between two variables, the TPB constructs in our case. Its values range from -1 to 1, where 1 indicates a perfect positive linear relationship; -1 indicates a perfect negative linear relationship and 0 indicates no linear relationship. The Whitney U Test is a non-parametric test, and it is used to determine whether there is a significant difference between the distributions of two independent groups, drinkers (253 respondents) and non-drinkers (54 respondents) in our case.

4. Results and Discussion

Table 2 presents the consumption frequencies for non-alcoholic spirits drinks of vitivinicultural origin and no-alcohol aromatized wines.

The data shows a clear trend of very low consumption rates across all proposed examples, with most respondents indicating they have never consumed these products. The percentage of respondents consuming these products on a daily or near-daily basis is extremely low. Non-alcoholic spirits products of vitivinicultural origin have generally the highest rates of never being consumed. Non-alcoholic cocktails made with no-alcohol aromatized wine are slightly more popular, with 11.7% of respondents consuming them on a monthly basis, and 3.9% on a weekly basis.

Table 2. Consumption frequencies (%).

	Never	Most day/Every day
No-alcohol version of spirit drinks of vitivinicultural origin	93.8	0.5
No-alcohol version of aromatized wines	92.7	0.5
Non-alcoholic cocktails with no-alcohol aromatized wine	84.0	0.3

Figure 1 illustrates the key factors that can be leveraged to increase the consumption of non-alcoholic spirit products of vitivinicultural origin and dealcoholized/no-alcohol aromatized wines. Taste is the most significant driver for both categories, followed by price. The ability to drive after drinking and the fact that these products contain no alcohol are also important factors, but to a lesser degree. Friend's advice, socialization, sustainability, and expert advice have moderate influence, while brand, origin, and label style are the least influential.



Figure 1. Drivers of consumption.

Figure 2 summarizes the relevance of different barriers to consumption for non-alcoholic spirit products of vitivinicultural origin and dealcoholized/no-alcohol aromatized wines. Both product categories face significant barriers related to taste and lack of knowledge. Both categories are also perceived as expensive and not readily available in supermarkets, restaurants or bars, presenting

substantial barriers to wider adoption. Cultural factors and lack of socialization opportunities are relatively low barriers.

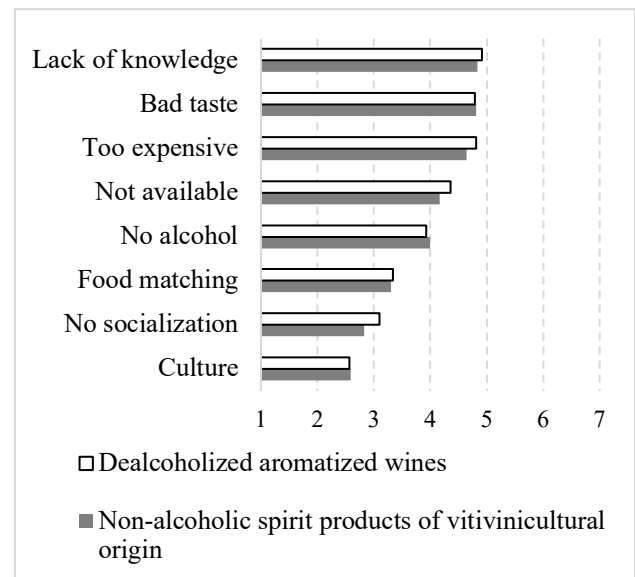


Figure 2. Barriers to consumption.

Table 3 provides an analysis of the two product categories based on the behavioural constructs from the TPB. Following an assessment of scale reliability, items for each construct were averaged to obtain measures for attitudes, subjective norms, and perceived behavioural control.

Generally, it emerges low consumption behaviour and a bit higher intention to consume the two product categories. Despite this, individuals have generally positive attitudes towards the two product categories, and they generally feel to be easily able to consume them despite the barriers. The opinion of other people in social sphere of respondents seems to be not so impactful.

Table 3. Descriptive statistics average constructs and scale reliability.

Measures	No-alcohol version of spirit drinks of vitivinicultural origin			No-alcohol version of aromatized wines		
	Mean	SD	α	Mean	SD	α
Intention	2.2	1.6		2.2	1.7	
Attitudes	4.2	1.1	0.880	4.2	1.2	0.900
Subjective Norms	2.0	1.5	0.956	2.0	1.5	0.977
Perceived behavioural control	4.4	1.6	0.676	4.3	1.7	0.734
Behaviour	1.1	0.6		1.2	0.6	

α = Cronbach's α

Table 4 examines the determinants of intention to consume non-alcoholic spirit products of vitivinicultural origin and no-alcohol aromatized wines, as well as the respondents' actual consumption behaviour, through the lens of the TPB. It confirms that attitudes, subjective norms, and perceived behavioural control significantly influence consumption intention, with subjective norms and attitudes having a stronger impact than perceived behavioural control. Intention is a significant predictor of

actual consumption, and while perceived behavioural control also affects behaviour, its influence is weaker compared to that of intention. Our sample includes 17.6% of respondent who do not consume alcoholic beverages.

Table 5 highlights that while there are no significant differences in attitudes, subjective norms, perceived behavioural control, or actual behaviour between people who consumer or do not consume alcoholic beverages for either product category, there are significant differences in intention. Drinkers generally exhibit higher intentions to consume both non-alcoholic spirit products and no-alcohol aromatized wines compared to non-drinkers. This suggests that intention is a key factor distinguishing drinkers from non-drinkers in their likelihood to engage with these non-alcoholic products.

Table 4. Consumption intention and behaviour determinants.

	No-alcohol version of spirit drinks of vitivinicultural origin		No alcohol version of aromatized wines	
	Pearson's r	p-value	Pearson's r	p-value
Attitudes → Intention	0.550	< .001	0.579	< .001
Subjective norms → Intention	0.580	< .001	0.626	< .001
Perceived behavioural control → Intention	0.385	< .001	0.483	< .001
Intention → Behaviour	0.386	< .001	0.528	< .001
Perceived behavioural control → Behaviour	0.179	0.002	0.228	< .001

Table 5. Differences between drinkers and non-drinkers of alcoholic beverages.

	Non drinkers (n=54)	Drinkers (n=253)	Mann-Whitney U	p-value
No-alcohol version of spirit drinks of vitivinicultural origin				
Attitudes	4.0	4.3	6156.5	0.253
Subjective norms	1.8	2.1	6096.0	0.173
Perceived behavioural control	4.2	4.5	6260.5	0.334
Behaviour	1.0	1.2	6483.0	0.563
Intention	1.8	2.3	5439.0	0.011
No-alcohol version of aromatized wines				
Attitudes	3.9	4.3	5849.0	0.096
Subjective norms	1.7	2.0	6085.0	0.150
Perceived behavioural control	4.0	4.4	6002.5	0.160
Behaviour	1.1	1.2	6239.5	0.180
Intention	1.7	2.3	5445.0	0.009

5. Conclusions

The no-alcohol version of spirit drinks and the no-alcohol version of aromatized wines are experimenting an increasing interest for consumers as they are or in the preparation of cocktails.

To increase consumption, the industry should focus on improving the taste, making products more affordable and available, and enhancing consumer education to address knowledge gaps.

At the same time reflections are needed on the technical and regulatory feasibility to develop harmonised permitted denominations and descriptors for NoLo beverages.

6. References

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