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APEROL SALES TRAJECTORY ANALYSIS THROUGH THE LENS OF THE ITALIAN TOURISM MULTIPLIER EFFECT

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Abstract: This study investigates the international rise in Aperol sales, particularly the global spread of the Aperol Spritz, within the context of the Italian tourism multiplier effect. Over the past decade, the Aperol Spritz has achieved substantial international recognition, emerging as one of the most globally demanded cocktails, underlining the influence of Italian culture on the global market. An ARDL model and Least Squares with Breaks regression were used to analyze the relationship between international tourist arrivals to Italy and Aperol sales growth. A Granger causality test is performed to identify the relationships and dependencies in the studied indicators. The data for the study was extracted from statistical reports of bank of Italy, Campari Group annual financial reports and Google Scholar statistics in the last two decades. The ARDL model revealed that tourist arrivals significantly influence Aperol sales and media mentions, with Granger causality indicating a feedback loop between media exposure and sales. The Least Squares with Breaks analysis reveals temporal heterogeneity in these effects: while tourist arrivals have exerted an increasingly pronounced effect on sales in recent years. The influence of media coverage peaked during the 2000–2011 period, and then a declining effect of media since 2011 was observed. The global impact of Italian cultural influence is underscored by statistical data from the Bank of Italy, which indicates a high rate of repeat visits by tourists. This phenomenon suggests that the initial exposure to the distinct enogastronomic specificities and characteristic features of the Mediterranean lifestyle exerts a significant and enduring appeal. The study concludes that while tourism plays a key role in driving Aperol's global growth, additional factors such as marketing efforts, social media, and evolving consumer preferences also contribute significantly to the brand's international success. The cultural resonance of the Aperol Spritz, deeply embedded within the Italian "aperitivo" tradition, has elevated its status beyond a mere beverage to an emblematic representation of the broader Italian experience. This symbolic positioning significantly contributes to tourist attraction and generates substantial economic benefits, extending beyond the direct revenues from its consumption.

Keywords: Aperol, multiplier, ARDL, least squares with breaks, Italian cultural tourism

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INTRODUCTION

The global alcoholic beverage market is characterized by dynamic shifts in consumer preferences, often influenced by cultural trends, tourism, and strategic brand positioning (Charters & Pettigrew, 2006). Within this landscape, the remarkable ascent of Aperol Spritz—a cocktail composed of Aperol, Prosecco, and soda water—stands out as a case study in how a regional aperitif can evolve into an international phenomenon. Originally created in 1919 by the Barbieri brothers in Padua, Italy, Aperol was marketed in its early years as a light, low-alcohol aperitif for "women and sportive people" (Aversa, 2013).

However, its transformation into a globally recognized brand accelerated only after the Campari Group's acquisition in 2003, which leveraged aggressive marketing strategies to reposition Aperol as an emblem of Italian dolce vita (Cunico, 2014; Prete, 2023). Campari Group's strategic branding efforts further amplified this effect, transforming Aperol from a regional specialty into a must-try global commodity, accounting for 11% of the group's €1.3 billion revenue by 2012 (Aversa, 2013).

Despite its commercial success, the drivers behind Aperol's global expansion remain underexplored in academic literature. While prior studies have examined the role of marketing in alcoholic beverage demand (Ellerup Nielsen & Thomsen, 2018), few have quantitatively assessed the interplay between tourism, media exposure, and sales growth. This study addresses this gap by investigating the Italian tourism multiplier effect—the process by which tourist experiences translate into sustained consumption patterns abroad (Marrocu & Paci, 2013).

The study examines how international tourist inflows to Italy and media coverage have influenced the brand's sales trajectory. ARDL model is employed to capture long-term relationships between tourism, media, and sales, alongside Least Squares with Breaks regression to identify structural shifts in these dynamics. Furthermore, the study underscores the broader implications of cultural commodification, wherein localized products gain global appeal through strategic narrative-building—a process exemplified by Aperol's transformation into a symbol of Italian lifestyle and leisure.

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LITERATURE REVIEW

The Aperol Spritz was not very popular worldwide in the first years of this century. As articles about Aperol Spritz began to emerge more frequently, the cocktail's popularity surged, leading to a significant boost in sales. When Campari Group originally brought the vibrant orange liqueur to U.S. shores in 2006 — it sparked a craze (White, 2024).

According to Cunico (2014) Campari group innovation was rather a new presentation of an existing product, which was able to meet new consumers' preferences and new markets, represented by international ones and the younger consumers.

Aversa (2013) stated that the strategy Campari had long realized that consumers wanted "lighter" drinks that fitted in with social experiences where little or no food is eaten, such as in bars or cafés. He also added: "Associating Aperol Spritz with the fun aperitivo time, especially among younger Italians, led to strong word-of-mouth publicity spreading among consumers." Prete (2023) researched the implementation of Campari products in Hong Kong, and found locals' desire for replicating the Italian lifestyle and rising interest in Aperol Spritz. Aperol's association with social occasions, particularly in cocktails like the Aperol Spritz, enhances its appeal among younger people who prioritize experiential consumption (Khurdei & Skorobogatova, 2023). Effective international brand management and marketing knowledge have allowed Aperol to adapt to various markets, increasing its global presence (Lopes, 2008). To capitalize on these trends, companies are employing innovative marketing strategies, such as Campari's use of animated displays for Aperol and Crodino promotions at point-of-sale locations (Lattmann, 2021). Marketing strategies however are not always successful but Aperol as a representative of Italy gained worldwide attention. The changes undergone by the tourism industry in the past four years have dramatically affected its way of doing business (Stankova & Kaleychev, 2024) and this even enhanced Aperol Spritz popularity to become an emblem of Italian social life, particularly the "aperitivo" tradition. An important catalyst for the sales of the orange drink turns out to be tourism, and more precisely the multiplier effect in tourism.

A study of Vergori & Arima (2020) find a tendency of cultural tourists to spend more money on their journeys.

Tourism has significant direct and indirect impacts on the economy through its multiplier effect (Trebicka, 2016). When tourists visit Italy, they spend money on various goods and services, including accommodation, food, transportation, and leisure activities. This spending directly benefits businesses in these sectors. However, the impact extends further as these businesses, in turn, purchase goods and services from other local businesses, creating a ripple effect throughout the economy. Algieri et al. (2016) calculate the comparative advantages in tourism of EU-28 countries to demonstrate that Mediterranean countries hold a leading position in tourism. Tourism multipliers indicate the total increase in output, labor earnings, and employment through inter-industry linkages in a region as a result of tourism expenditures (Frechtling & Horváth, 1999). The tourism multiplier effect indicates that an increase in tourist expenditure leads to a more than proportional increase in overall economic activity, benefiting various industries (Rusu, 2011; Socci et al., 2016).

Tourism is one of the fastest growing industry in Italy (Ali et al., 2014). Sastri et al. (2024) explore the multiplier effect and focus on the tourism industry's impact on economic structures, particularly in Indonesia. Their research illustrates how increased tourism can lead to higher production and sales in both domestic and export markets. El-Sahli (2018) is concentrated on the exports of differentiated consumer products and processed food affected by tourism, and finds the impact measured through elasticity which figure comes close to 1. This research also found a lagged effect for tourism mainly on the export of consumer goods, suggesting that export is an additional channel through which tourism can stimulate domestic economic activity (El-Sahli, 2018). Zainullina & Kedrova (2023) are exploring the influence of tourism in Rostov region on the state of the industries in the region. On the other hand Mariolis et al. (2021) are estimating the negative effect of tourism slowdown on Greek economy. According Yusaku (2002) we should take the role of tourism into consideration fully because of the activation of some regions or the development as tourism exerts the influence of the big plus on the economic activities.

Archer Brian (1977) divided tourism multipliers into five subtypes as follows: multipliers of sales or transactions, output multipliers, income multipliers, employment multipliers, and input-output multipliers. Fletcher (1989) is advocating the utilization of input-output analysis to examine the economic impact of tourism and to demonstrate the flexibility and the detail of this type of models. With the development of science in tourism, new and more adequate methods for the analysis of economic data from tourist activity are advocated. Dwyer et al., 2004 argue that Computable General Equilibrium (CGE) models are more effective in the estimation of the economic impacts of a wide variety of changes and policies in tourism. On the other hand Li et al. (2006) state that tourism suppliers success depends largely on demand, and management failure is often due to an over-estimation or underestimation of demand.

They defend the thesis of the effectiveness and accuracy of econometric techniques in order to facilitate more accurate forecasts and provide reliable recommendations for tourism policy-making. Econometric models including VAR, ARDL and other more complex models are stated as popular tools for analysis in tourism studies. In this research utilized are two of these methods, specifically ARDL and Regression with breaks models. The ARDL model is fundamental for the research of Lean & Tang (2010) as they examine the long-run and short-run relationships between tourism development and economic growth in Malaysia. Their study shows a significant positive impact of tourism on GDP, highlighting the tourism multiplier effect. Katircioglu (2009) uses ARDL models to analyze the long-run and short-run impacts of tourism on economic growth, which can be linked to multiplier effects and suggest bidirectional causality between international tourism and economic growth in Turkey. Tang & Tan (2015) also find that tourism Granger-causes economic growth in Malaysia both in the short-run and in the long-run as well as Akinboade & Braimoh (2010), who show a unidirectional causality running from international tourism earnings to real GDP in South Africa.

A literature review of Pablo-Romero & Molina (2013) showed that from a sample of 87 studies, 55 pointed to a univocal relationship between tourism and economic growth, 16 identified a bi-univocal relationship, 9 indicated that the connection flowed from economic growth to tourism and, finally, 4 did not identify any relationship at all between them.

To theoretically justify the relationships between the articles mentioning Aperol Spritz and sales of the drink we may address the brand awareness and consumer behavior. The articles mentioning Aperol Spritz can be seen as a proxy for brand awareness and cultural relevance. According to brand equity theory (Aaker, 1991), increased awareness and positive associations with a brand can lead to higher consumer preference and sales. Academic papers may reflect the brand's integration into cultural and social narratives, which can influence consumer behavior. Another way to explain these relationships is to utilize the innovation diffusion theory: The mention of Aperol Spritz in academic papers could signal its adoption as a cultural or culinary innovation Rogers (2003). According to Rogers (2003) the spread of such innovations can lead to increased consumer adoption and market penetration, thereby boosting sales. Cultural tourism theory suggests that unique cultural and culinary experiences drive tourism demand. Hence Aperol Spritz is not just a beverage but a symbol of Italian culture and lifestyle. Richards (1996) emphasizes the role of cultural products in shaping tourist experiences.

Academic papers discussing it may contribute to its cultural capital, making it a pull factor for tourists. The mention of Aperol Spritz in Google scholar articles can enhance Italy's destination image as a hub for gastronomic and cultural experiences. Based on the destination branding theory Chiang & Chen (2023) state that tourism destination brand identity and brand experiences can influence visitors' intention to recommend. Aaker (1991) and Keller (1993) discuss how brand awareness and cultural relevance drive sales, while Hall & Mitchell (2000) study on culinary branding explore how food and beverage brands become symbols of national identity and drive consumer preference, as is the case of Aperol.

The interconnection between destination branding and tourism is supported by Pike (2005), who examines how local products enhance destination image and attract tourists. Utilizing it as a fundamental for further impact we focus on the tourism-led demand. Increased tourism arrivals can directly boost sales of local products like Aperol Spritz through tourist consumption. This is supported by tourism-led growth theory. Brida & Pulina (2010) explore tourism as a promoter of short and long run economic growth, by assessing the so-called Tourism Led Growth Hypothesis (TLGH).

This theory is closely linked to the spillover effects produced by tourism within the local economy, which positively impact sectors such as hospitality, retail, and beverages. This connection aligns with our conceptual framework, which is grounded in the multiplier effect theory. According to this theory, expenditures by tourists stimulate further economic activity, as the initial spending circulates through the economy, generating additional income and employment opportunities across various sectors. For the purpose of their study Brida & Pulina (2010) use various methodological approaches as VAR, VECM, ARDL, and others, which are fundamental of our study as well. Brida et al. (2016); Lee & Chang (2008) discuss how tourism stimulates local economies as we emphasize how Aperol Spritz sales benefit from increased tourism arrivals, illustrating the multiplier effect of tourism on local industries, and in Italy, where local culinary experiences are a major draw for visitors (Testa et al., 2019). This study aims to explain the relationships between articles regarding Aperol, the tourism in Italy and Aperol sales, by integrating the influence of brand equity theory, cultural tourism theory, and tourism-led growth theory to show the overall multiplier effect of tourism activities.

MATERIALS AND METHODS

For the purpose of the study initially Vector Autoregressive and Vector Error Correction models were utilized. After the seminal paper of Sims (1980), Vector Autoregression model has been widely employed in macro econometrics to determine the effect of policy implications on the macroeconomic variables (Gedikli et al., 2022). According to Jeliazkov (2013) VAR models are very versatile – "in the past few decades they have been adapted to incorporate structural instability, regime switching, time-varying parameters, dynamic factors, threshold-crossing behavior, and discrete data, among others".

As co-integration link was found in the model a restricted VAR, also known as a Vector Error Correction (Dimitrov et al., 2019), was applied for this research. The results of the VECM imposed 2 unit roots which invalidated to certain extend this model. Hence an Auto Regressive Distributed Lag (ARDL) model was applied to the data. ARDL models have been used as a method of examining cointegrating relationships for many years. ARDL can be applied effectively even with relatively small sample sizes, which can be a limitation for some other techniques as VAR or ARIMA. "A key advantage of the ARDL model is its applicability to time series data with varying orders of integration, encompassing both stationary (I(0)) and non-stationary (I(1)) variables. This flexibility is particularly valuable in empirical research where the true order of integration for all variables may not be definitively established" according to Pesaran & Shin (1995).

Pesaran et al. (2001) outline the ability of ARDL models to handle co-integration with inherent robustness to misspecification of integration orders of relevant variables. Considering the specifications of our data we apply 2 lag ARDL (2, 2, 2) model which was later revised to ARDL with HAC (Heteroskedasticity and Autocorrelation Consistent) standard errors, due to heteroskedasticity issues in the initial model. After applying the HAC ARDL (2,2,2) model, a Granger causality test is used to find the possible influences of one variable on another. Granger Causality is a statistical hypothesis test used to determine whether one time series can predict another. ARDL models primarily focus on estimating the long-run (co-integration) and short-run relationships between variables, while the Granger causality tests focus on predictive relationships between variables. Despite the results of the study some limitations like small sample size, heteroskedasticity present in the initial ARDL model and only weak evidence of a long-run relationship in the ARDL (2,2,2) model, provided by the bounds test, imply for the utilization of a more robust regression model. For this purpose we shift the attention to Least squares with breaks regression model, which is more suitable when structural changes in the relationships are suspected. This approach avoids the problems of weak co-integration and positive error correction terms that plagues the ARDL models. Before employing a regression with breaks model, it's crucial to have evidence of structural breaks in the data and that`s why we ran a Bai-Perron Test, which identified two significant break points: 2012 and 2021. "Bain & Perron (2000) presents an extensive simulation analysis pertaining to the size and power of the tests, the accuracy of the asymptotic

approximations for the confidence intervals and the relative merits of different methods to estimate the number of breaks" (Bai & Perron, 2003). The data is then split into three periods (2000-2011, 2012-2020, and 2021-2023), and separate regressions were estimated for each period. The relationships between variables changed significantly across the three periods.

The variables in the model that is constructed are: the Number of Tourists visiting Italy every year, the Sales of Aperol in thousand euros per year and the Number of Articles which mention Aperol, distributed by year of issue. The empirical analysis utilizes an annual time series dataset spanning the period from 2000 to 2023.

The study aims to find the influence of the incoming tourism and the articles, mentioning Aperol, on the sales volume of the drink. Explored are also other interactions and correlations among the three variables. Data acquisition utilizes authoritative sources including: tourism statistics from the Bank of Italy, bibliometric data extracted from Google Scholar, Financial disclosures from Campari Group's official corporate reports.

RESULTS AND DISCUSSION

For the purpose of the study statistical data concerning the number of tourists visiting Italy from 2000 to 2023, the sales of "Aperol" and the articles mentioning "Aperol" for the period 2000- 2023 (Campari Group, 2024) was used. To facilitate the analysis process, the definitions of the three variables are presented as follows in Table 1. The variables were measured as follows: Aperol sales were estimated in million euros, Number of tourists visiting Italy was measured in thousands, and Articles that mention Aperol in natural numbers. In Table 2 descriptive statistics for the variables of the time series are presented. Initial correlations among the raw data of the variables are shown in Table 3. Visible is the strong correlation between Articles and Sales (0.951). As one of the aims of the study is to find which of the variables is causing a change to the indicators the other – sales of Aperol or articles regarding Aperol we are trying to apply a model that would lead us to a Granger causality test. Granger causality tests examine whether one time series is useful for forecasting another as they focus on predictive relationships between variables. This test doesn't necessarily imply true causality in the philosophical sense and is usually utilized after VAR procedures. The initial idea of the study was to use a VAR model but non-stationarity in the time series and small sample number changed the primary approach of the study. The Johansen co-integration test showed evidence of co-integrated residuals, which was another reason to go for VECM. Even after differencing the variables and applying low lag VECM there was still unit root imposed, visible in the graph of the Inverse Roots of AR Characteristic Polynomial. Hence the focus of the study was directed to the application of an ARDL model. Using the Akaike Information Criteria an ARDL (2,2,2) model with Sales variable as dependent was constructed, as shown in Table 4.

Table 1. Variables definition (Source: Author's elaboration)

Variable	Definition	Source
Articles	Number of articles where "Aperol spritz" is mentioned	Google Scholar
Tourists	Number of tourists visiting Italy in thousands	Banca D`Italia Statistics
Sales	Aperol sales in million euros	Campari Group Financial Reports

Table 2. Descriptive Statistics (Source: Author's elaboration)

	Articles	Tourists	Sales
Valid	24	24	24
Missing	0	0	0
Mean	49.125	72160.862	180.606
Std. Error of Mean	11.591	2886.563	37.756
Std. Deviation	56.782	14141.213	184.966
MAD	24.500	8378.089	106.903
Skewness	0.975	-0.606	1.511
Std. Error of Skewness	0.472	0.472	0.472
Kurtosis	-0.539	0.792	1.946
Std. Error of Kurtosis	0.918	0.918	0.918
Minimum	0.000	38916.866	14.662
Maximum	158.000	96151.489	703.383

Table 3. Correlations (Source: Author's elaboration)

	Articles	Tourists	Sales
Articles	1.000	0.089	0.951
Tourists	0.089	1.000	0.176
Sales	0.951	0.176	1.000

Table 4. ARDL (2,2,2) with dependent variable Sales (Source: Author's elaboration)

Variable	Coefficient	Std. Error	t-Static	Prob.*
SALES(-1)	1.454498	0.206591	7.040459	0.0000
SALES(-2)	-0.582731	0.234616	-2.483769	0.0263
ARTICLES	-0.009284	0.296951	-0.031264	0.9755
ARTICLES(-1)	0.043059	0.380325	0.113216	0.9115
ARTICLES(-2)	0.697201	0.408149	1.708204	0.1097

TOURISTS	0.001245	0.000199	6.249601	0.0000
TOURISTS(-1)	-0.001990	0.000379	-5.249705	0.0001
TOURISTS(-2)	0.000848	0.000351	2.413959	0.0301
R-squared	0.997121	Mean dependent var		195.5898
Adjusted R-squared	0.995681	S.D. dependent var		186.1401
S.E. of regression	12.23231	Akaike info criterion		8.121327
Sum squared resid	2094.813	Schwarz criterion		8.518070
Log likelihood	-81.33460	Hannan-Quinn criter.		8.214788
Durbin-Watson stat	1.921794			

*Note: p-values and any subsequent tests do not account for model selection

The estimation equation of the model is: SALES = C(1)*SALES(-1) + C(2)*SALES(-2) + C(3)*ARTICLES + C(4)*ARTICLES(-1) + C(5)*ARTICLES(-2) + C(6)*TOURISTS + C(7)*TOURISTS(-1) + C(8)*TOURISTS(-2)

When we substituted the coefficients in the equation the following Short-Run Results came out:

SALES = 1.454*SALES (-1) - 0.583*SALES (-2) - 0.009*ARTICLES + 0.043*ARTICLES(-1) + 0.697*ARTICLES(-2) + 0.0012*TOURISTS - 0.0020*TOURISTS(-1) + 0.0008*TOURISTS(-2)

In the short run changes in the current and past values of SALES, ARTICLES, and TOURISTS affect current SALES. The data shows that one-unit increase in ARTICLES(-2) is associated with a 0.697 unit increase in current SALES and one-unit increase in TOURISTS is associated with a 0.0012 unit increase in current SALES.

The Long-Run Relationship is measured via the Cointegrating Equation, which in this case is looking like this:

D(SALES) = -0.128*(SALES(-1) - (5.700*ARTICLES (-1) + 0.0008*TOURISTS(-1)))

The first difference of SALES (D*SALES) represents the change in SALES from one period to the next. The error correction coefficient indicates the speed of adjustment back to the long-run equilibrium. It is negative and statistically significant. The error correction term represented as SALES (-1) - (5.700*ARTICLES (-1) + 0.0008*TOURISTS (-1)) is the error correction term. It represents the deviation from the long-run equilibrium in the previous period. The long-run equilibrium relationship between SALES, ARTICLES, and TOURISTS shows the following results: 1) a one-unit increase in ARTICLES is associated with a 5.700 unit increase in SALES in the long run, and 2) a one-unit increase in TOURISTS is associated with a 0.0008 unit increase in SALES in the long run. The error correction coefficient (-0.128) indicates that approximately 12.8% of the disequilibrium from the previous period is corrected in the current period which is a relatively slow speed of adjustment.The next step of the analysis is the performance of a Bounds test for co-integration (Table 5).

Table 5. ARDL (2,2,2) Long Run Form and Bounds Test (Source: Author's elaboration)

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	I-Statistic	Prob.
SALES(-1)'	-0.128233	0.149923	-0.855324	0.4068
ARTICLES(-1)	0.730976	0.398992	1.832055	0.0883
TOURISTS(-1)	0.000103	9.25E-05	1.118656	0.2821
D(SALES(-1))	0.582731	0.234616	2.483769	0.0263
D(ARTICLES)	-0.009284	0.296951	-0.031264	0.9755
D(ARTICLES(-1))	-0.697201	0.408149	-1.708204	0.1097
D(TOURISTS)	0.001245	0.000199	6.249601	0.0000
D(TOURISTS(-1))	-0.000848	0.000351	-2.413959	0.0301
p-value incompatible with I-Bounds distribution --- Levels Equation --- Case 1: No Constant and No Trend				
Variable	Coefficient	Std. Error	I-Statistic	Prob.
ARTICLES	5.700397	3.872177	1.472143	0.1631
TOURISTS	0.000807	0.000564	1.430546	0.1745
EC= SALES- (5.7004'ARTICLES + 0.0008'TOURISTS) F-Bounds Test Null Hypothesis: No levels relationship				
Test Statistic	Value	Signif.	1(0)	1(1 Asymptotic: n=1000
F-statistic	3.766171	10%	2.17	3.19
k	2	5%	2.72	3.83
		2.5%	3.22	4.5
		1%	3.88	5.3
T-Bounds Test Null Hypothesis: No levels relationship				
Test Statistic	Value	Signif.	1(0)	1(1
T-statistic	-0.855324	10%	-1.62	-2.68
		5%	-1.95	-3.02
		2.5%	-2.24	-3.31
		1%	-2.58	-3.66

The results of the Long run and Bounds test show F-statistic =3.766, which if compared to the asymptotic critical values, falls between the 10% (3.19) and 5% (3.83) bounds. This suggests that we can reject the null hypothesis of no co-integration at the 10% significance level, but not at the 5% level. Accounting for the sample size (n=22), relying on the asymptotic critical values might be misleading. Assuming that the bounds test is showing evidence for co-integration, significant only at the 10% level we can conclude that the long-run relationship suggests that both articles and tourists have a positive effect on sales. In the next step we perform an ARDL Error Correction Regression presented in Table 6.

Table 6. ARDL Error Correction Regression (Source: Author's elaboration)

ECM Regression - Case 1: No Constant and No Trend				
Variable	Coefficient	Std.Error	t-Statistic	Prob.
D(SALES(-1))	0.582731	0.158680	3.672377	0.0025
D(ARTICLES)	-0.009284	0.233037	-0.039839	0.9688
D(ARTICLES(-1))	-0.697201	0.319434	-2.1826 17	0.0466
D(TOURISTS)	0.001245	0.000 184	6.762300	0.0000
D(TOURISTS(-1))	-0.000848	0.000310	-2.731699	0.0162
CointEQ(-1)'	-0.128233	0.035685	-3.593409	0.0029
R-squared	0.941849	Mean dependent var		31.20354
Adjusted R-squared	0.923677	S.D.dependent var		41.41768
S.E. of regression	11.44228	AKaiKe info criterion		7.939509
Sum squaredresid	2094.813	Schwarz criterion		8.237066
Log likelihood	-81.33460	Hannan-Quinn criter.		8.009604
Durbin-Watson stat	1..921794			
• p-value incompatible with t-Bounds distribution				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	l(0)	l(1)
F-statistic	3.766171	10%	2.17	3.19
K	2	5%	2.72	3.83
		2.5%	3.22	4.5
		1%	3.88	5.3
t-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	l(0)	l(1)
t-statistic	-3.593409	10%	-1..62	-2.68
		5%	-1.95	-3.02
		2..5%	-2.24	-3.31
		1%	-2.58	-3.66

Regarding the results from the ECR we can conclude that about 12.8% of the disequilibrium from the previous year is corrected within the current year. The Error Correction Coefficient (CointEq (-1)): -0.128 (p-value = 0.0029) is statistically significant, assuming co-integration. In the short-run the lagged change in ARTICLES has a negative effect, while the current change in TOURISTS has a positive effect on the change in SALES. D(SALES(-1)): 0.583 (p-value = 0.0025) indicates that the change in sales in the previous year has a positive and statistically significant effect on the change in sales in the current year. D(ARTICLES): -0.009 (p-value = 0.9688) is not statistically significant and suggests that the current change in articles does not have a significant short-run effect on the change in sales. D(ARTICLES(-1)): -0.697 (p-value = 0.0466) is statistically significant at the 5% level and confirms that the lagged change in articles has a negative effect on the current change in sales. This finding is opposing the initial idea of the research to certain extent. D(TOURISTS): 0.0012 (p-value = 0.0000) is highly statistically significant and concludes that the current change in tourists has a positive effect on the current change in sales. D(TOURISTS(-1)): -0.0008 (p-value = 0.0162) is statistically significant, representing the lagged change in tourists having a negative effect on the current change in sales. On the other hand long-run relationship suggests that both articles and tourists have a positive effect on sales, if co-integration is assumed. To check the correctness of the model a Breusch-Godfrey Serial Correlation LM Test is performed. This test checks for autocorrelation in the residuals of the ARDL model. It is presented in Table 7.

Table 7. Breusch-Godfrey Serial Correlation LM Test (Source: Author's elaboration) Hypothesis: No serial correlation at up to 2 lags

F-statistic	0.306142 Prob.F(2,12)	0.7419
Obs'R-squared	1.068027 Prob.Chi-Square(2)	0.5862

Test Equation: Dependent Variable: RESID Method: ARDL; Sample: 2002 2023 Included observations: 22
Presample missing value lagged residuals set to zero

Variable	Coefficient	Std.Error	I-Statistic	Prob.
SALES(-1)	-0.309792	0.497129	-0.623161	0.5448
SALES(-2)	0.232309	0.460488	0.504484	0.6231
TOURISTS	0.000137	0.000279	0.489203	0.6335
TOURISTS(-1)	0.000344	0.000621	0.553560	0.5900
TOURISTS(-2)	-0.000430	0.000711	-0.605352	0.5562
ARTICLES	-0.054185	0.332648	-0.162891	0.8733
ARTICLES(-1)	0.143101	0.452668	0.316129	0.7573
ARTICLES(-2)	0.282729	0.561732	0.503318	0.6239
RESID(-1)	0.300678	0.562055	0.534961	0.6024
RESID(-2)	0.363972	0.469513	0.775212	0.4532
R-squared	0.048451	Mean dependent var		-0.097704
Adjusted R-squared	-0.665210	S.D. dependent var		9.987142
S.E. of regression	12.88771	Akaike info criterion		8.253380
Sum squared resid	1993.117	Schwarz criterion		8.749309
Log likelihood	-80.78719	Hannan-Quinn criter.		8.370206
Durbin-Watson stat	1.850647			

The results of the Serial Autocorrelation test shows F-statistic: 0.3061, Prob. F(2, 12): 0.7419, Obs*R-squared: 1.0680, Prob. Chi-Square(2): 0.5862. Both p-values indicate that we fail to reject the null hypothesis of no serial correlation at up to 2 lags. It means there's no evidence of significant autocorrelation in the residuals of the ARDL model used. To be assured of the significance of the ARDL model we check for heteroskedasticity using the Breusch-Pagan-Godfrey test for non-constant variance in the residuals in Table 8. The results show: Prob. F (8,13) = 0.0040: the p-value associated with the F-statistic indicates strong evidence to reject the null hypothesis of homoskedasticity. Prob. Chi-Square (8) = 0.0315 the p-value associated with the Chi-square statistic based on the Obs*R-squared, below the conventional 0.05 significance level, again leading to the rejection of the null hypothesis. Prob. Chi-Square (8) = 0.2619, the p-value associated with the scaled explained sum of squares is above 0.05, so based on this statistic, we do not reject the null hypothesis. Based on the F-statistic and the Obs*R-squared, there is strong evidence of heteroskedasticity in the ARDL model's residuals. To check if our model is correctly specified we perform the Ramsey RESET test for functional form misspecification in Table 9.

Table 8. Breusch-Pagan-Godfrey test (Source: Author's elaboration)

HeterosKedasticity Test: Breusch-Pagan-Godfrey; Null hypothesis: HomosKedasticity

F-statistic	5.345548	Prob.F(8,13)	0.0040
Obs'R-squared	16.87128	Prob.Chi-Square(8)	0.0315
Scaled explained SS	10.04431	Prob.Chi-Square(8)	0.2619

Test Equation: Dependent Variable: RESID•2 Method:Least Squares --- Sample: 2002 2023 Included obseivations: 22

Variable	Coefficient	Std.Error	I-Statistic	Prob.
C	-742.9088	345.3606	-2.151111	0.0509
SALES(-1)	12.07249	2.188656	5.515938	0.0001
SALES(-2)	-9.215984	2.539545	-3.628990	0.0031
ARTICLES	-6.457214	4.049891	-1.594417	0.1349
ARTICLES(-1)	-2.913224	3.707513	-0.785762	0.4461
ARTICLES(-2)	-4.488134	3.751006	-1.196515	0.2529
TOURISTS	0.002436	0.002712	0.898254	0.3854
TOURISTS(-1)	-0.015960	0.003816	-4.182868	0.0011
TOURISTS(-2)	0.024605	0.005899	4.170947	0.0011
R-squared	0.766876	Mean dependent var		95.21878
Adjusted R-squared	0.623416	S.D. dependent var		167.1168
S.E. of regression	102.5537	AKaiKe info criterion		12.39074
Sum squared resid	136724.3	Schwarz criterion		12.83707
Log likelihood	-127.2981	Hannan-Quinn criter.		12.49588
F-statistic	5.345548	Durbin-Watson stat		2.805629
Prob(F-statistic)	0.003989			

Table 9. Ramsey RESET test (Source: Author's elaboration)

Omitted Variables Specification	Squares of fitted values Sales Sales(-1) Sales(-2) Tourists Tourists(-1) Tourists(-2) Articles Articles(-1) Articles(-2)		
Test	Value	df	Probability
F-statistic	0.931818	13	0.3684
F-statistic	0.868284	(1,13)	0.3684
Likelihood ratio	1.422413	1	0.2330
F-test summary: Test	Sum of Sq.	df	Mean Squares
Test SSR	131.1548	1	131.1548
Restricted SSR	2094.813	14	149.6295
Unrestricted SSR	1963.658	13	151.0506
LR test summary:	Test Value Restricted LogL	Unrestricted LogL	
		-81.33460	-80.62339
Unrestricted Test Equation:	Dependent Variable	SALES	
	Method	Least Squares	
	Sample	2002 2023	
	Included observations	22	

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SALES(-1)	1.270887	0.286204	4.440489	0.0007
SALES(-2)	-0.448568	0.276220	-1.623955	0.1284
TOURISTS	0.001124	0.000239	4.704017	0.0004
TOURISTS(-1)	-0.001800	0.000432	-4.165829	0.0011
TOURISTS(-2)	0.000838	0.000353	2.375007	0.0336
ARTICLES	0.140653	0.338982	0.414928	0.6850
ARTICLES(-1)	0.079486	0.384121	0.206930	0.8393
ARTICLES(-2)	0.402131	0.518113	0.776146	0.4516
FITTED^2	0.000133	0.000143	0.931818	0.3684

R-squared | 0.997301 |	Mean dependent var | 195.5898 |
Adjusted R-squared | 0.995640	S.D. dependent var | 186.1401 |
S.E. of regression | 12.29027	Akaike info criterion | 8.147581
Sum squared resid | 1963.658	Schwarz criterion | 8.593916 |
Log likelihood | -80.62339	Hannan-Quinn criter. | 8.252724

This indicates that the test is checking if adding the squared fitted values of the model improves its explanatory power. The results of the test are as follows: t-statistic: 0.9318, df (degrees of freedom): (1, 13), p-value=0.3684, F-statistic: 0.8683, p-value=0.3684, Likelihood ratio: 1.4224, p-value=0.2330. In all three cases (t-statistic, F-statistic, and likelihood ratio), the p-values are well above the conventional significance levels of 0.05 or 0.10, and we fail to reject the null hypothesis.

The null hypothesis in the Ramsey RESET test is that the model is correctly specified. Therefore, based on this test, there is no evidence of functional form misspecification in ARDL model we constructed or in other words the linear functional form of the ARDL(2,2,2) model is likely adequate. Given the issue with heteroskedasticity we try to improve the model of the ARDL and conduct for this purpose an ARDL with HAC (Heteroskedasticity and Autocorrelation Consistent) standard errors. The outcome of this is shown in Table 10. The main difference between the ARDL and the ARDL with HAC is in the standard errors, t-statistics, and p-values. The coefficients themselves remain the same. In Table 11 the differences are outlined. In some cases like SALES(-1) and ARTICLES(-2), the standard errors have increased after applying HAC.

This is common when there's autocorrelation. In other cases like TOURISTS and TOURISTS(-1), the standard errors decreased. HAC estimators do not always increase standard errors. The direction of change depends on the specific autocorrelation and heteroskedasticity structure in the data. The significance of some variables has changed too. For example, ARTICLES(-2) became significant at the 10% level using HAC standard errors, whereas it was not significant before. Overall the ARDL Model with HAC Standard Errors is more appropriate than the original ARDL model, as it addresses both heteroskedasticity and potential autocorrelation. The next step was to conduct a Granger Causality test, represented in Table 12.

Table 10. ARDL with HAC standard error (Source: Author's elaboration)

HAC standard errors & covariance (Prewhitening with lags = 2 from AIC maxlags = 2, Bartlett kernel, Newey-West fixed bandwidth = 3.0000)					
Variable	Coefficient		Std. Error	t-Static	Prob.*
SALES(-1)	1.454498		0.297849	4.883334	0.0002
SALES(-2)	-0.582731		0.313579	-1.858320	0.0843
ARTICLES	0.001245		0.000125	9.932486	0.0000
ARTICLES(-1)	-0.001990		0.000269	-7.392076	0.0000
ARTICLES(-2)	0.000848		0.000329	2.577976	0.0219
TOURISTS	-0.009284		0.249062	-0.037275	0.9708
TOURISTS(-1)	0.043059		0.236658	0.181946	0.8582
TOURISTS(-2)	0.697201		0.335690	2.076922	0.0567
R-squared	0.997121		Mean dependent var		195.5898
Adjusted R-squared	0.995681		S.D. dependent var		186.1401
S.E. of regression	12.23231		Akaike info criterion		8.121327
Sum squared resid	2094.813		Schwarz criterion		8.518070
Log likelihood	-81.33460		Hannan-Quinn criter.		8.214788
Durbin-Watson stat	1.921794				

Table 11. Comparison of ARDL and ARDL with HAC (Source: Author's elaboration)

Variable	**Original Std. Error**	**HAC Std. Error**	**Original t-Statistic**	**HAC t-Statistic**	**Original Prob.**	**HAC Prob.**
SALES(-1)	0.2066	0.2978	7.040	4.883	0.0000	0.0002
TOURISTS	0.0002	0.000125	6.250	9.932	0.0000	0.0000
TOURISTS(-1)	0.0004	0.000269	-5.250	-7.392	0.0001	0.0000
ARTICLES	0.2970	0.2490	-0.031	-0.037	0.9755	0.9708
ARTICLES(-2)	0.4081	0.3356	1.708	2.077	0.1097	0.0567

Table 12. Granger Causality Test (Source: Author's elaboration) Sample 2000 – 2003 Lags: 2

Null Hypotesis:	Obs.	F-Static	Prob.
TOURISTS does not Granger Cause SALES	22	9.12806	0.0020
SALES does not Granger Cause TOURISTS		0.42445	0.6609
ARTICLES does not Granger Cause SALES	22	2.90500	0.0822
SALES does not Granger Cause ARTICLES		2.77881	0.0903
ARTICLES does not Granger Cause TOURISTS	22	0.08602	0.9180
TOURISTS does not Granger Cause ARTICLES		6.99915	0.0061

ARDL models primarily focus on estimating the long-run and short-run relationships between variables, while Granger causality tests focus on predictive relationships between variables.Therefore, Granger causality tests can provide complementary information to the ARDL analysis and help to understand the direction of predictive relationships between the explored variables. In this case we have the following outcome of the Granger test:

1. TOURISTS do not Granger Cause SALES (Prob. = 0.0020): This is statistically significant at the 1% level. We reject the null hypothesis. This means that past values of TOURISTS do help predict current values of SALES.

2. SALES do not Granger Cause TOURISTS (Prob. = 0.6609): This is not statistically significant and past values of SALES do not help predict current values of TOURISTS.
3. ARTICLES do not Granger Cause SALES (Prob. = 0.0822): This is significant at the 10% level, but not at the 5% level. This provides some weak evidence that past values of ARTICLES might help predict current SALES.
4. SALES do not Granger Cause ARTICLES (Prob. = 0.0903): This is also significant at the 10% level, but not at the 5% level. This provides some weak evidence that past values of SALES might help predict current ARTICLES.
5. ARTICLES do not Granger Cause TOURISTS (Prob. = 0.9180): This is not statistically significant.
6. TOURISTS do not Granger Cause ARTICLES (Prob. = 0.0061): This is statistically significant and past values of TOURISTS help predict current ARTICLES.

The overall estimate of our ARDL model with HAC investigated the long-run and short-run relationships between Aperol sales, tourist arrivals, and articles mentioning Aperol. Granger causality tests that have been implemented show the predictive relationships between the variables. The results suggest that tourist arrivals Granger-cause Aperol sales, while there is some weak evidence of bidirectional Granger causality between ARTICLES and SALES. Tourist arrivals also Granger cause the number of articles. However, these results should be interpreted with caution due to the small sample size which affects the reliability of both the ARDL and Granger causality results. To enhance our understanding of the relationships between variables, we employ Least squares regression with breaks of SALES as dependent variable. This approach is particularly well-suited for robust analysis of limited sample sizes. It focuses on structural breaks and how the relationships change over time while the ARDL models focus on long-run relationships and short-run dynamics. While the sample size is still small, this approach avoids the issues of weak cointegration and positive error correction terms that plagued the ARDL models. Utilizing the Bai-Perron tests of L+1 vs. L sequentially determined breaks, this output shows the results of a Least Squares regression with breaks. The breaks that are identified by this method are in 2012 and 2021 and for every separate period a regression is estimated. The output provides separate coefficient estimates for each period in table 13 as follows:

Table 13. SALES as dependent Least Squares regression with breaks (Source: Author's elaboration)

Dependent Variable: SALES Method: Least Squares with Breaks **Sample:** 2000 2023; **Included observations:** 24				
Break type: Bal-Perron tests of L+1 vs. L sequentially determined breaks				
Breaks: 2012, 2021; **Selection:** Trimming 0.15, Max. breaks 5, Sig. level 0.05				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
2000 - 2011 – 12 obs				
TOURISTS ARTICLES	0.000287	0.000113	2.535017	0.0207
ARTICLES	6.424974	1.057185	6.077434	0.0000
2012 - 2020 – 9 obs				
TOURISTS ARTICLES	0.000749	0.000149	5.032036	0.0001
ARTICLES	2.221378	0.150992	14.71187	0.0000
2021 - 2023 – 3 obs				
TOURISTS ARTICLES	0.005442	0.000543	10.02614	0.0000
ARTICLES	1.348368	0.242232	5.566425	0.0000
R-squared 0.992390	Mean dependent var 180.6059			
Adjusted R-squared 0.990276; S.E. of regression 18.23979	S.D. dependent var 184.9660; Akaike info criterion 8.857406			
Sum squared resid 5988.421; Log likelihood -100.2889	Schwarz criterion 9.151920			
Durbin-Watson stat 1.925537	Hannan-Quinn criter. 8.935541			

All of the observed correlations are statistically significant in every period as shown:

1. 2000-2011: TOURISTS: Coefficient = 0.000287, p-value = 0.0207, ARTICLES: Coefficient = 6.4250, p-value = 0.0000
2. 2012-2020: TOURISTS: Coefficient = 0.000749, p-value = 0.0001, ARTICLES: Coefficient = 2.2214, p-value = 0.0000
3. 2021-2023: TOURISTS: Coefficient = 0.005442, p-value = 0.0000, ARTICLES: Coefficient = 1.3484, p-value = 0.0000

The coefficients for both TOURISTS and ARTICLES change substantially across the three periods. This is the key finding of this analysis. It shows that the relationship between these variables and SALES is not constant over time. The effect of TOURISTS is much stronger in the 2021-2023 period than in the earlier periods, mainly due to after Covid-19 recovery process. A study of Esquivias et al. (2021) underlined COVID-19 as a reason for severe contraction of the international tourist demand, revenues and employment. The effect of ARTICLES is strongest in the 2000-2011 period and weaker in the later periods, due to smoothing in the growth of the number of articles in this period.

The overall model fit with R-squared=0.9924 and adjusted R-squared=0.9903 are very high, indicating a good overall fit. However, this is expected since separate regressions to different sub-periods are fitted. The Durbin-Watson statistic (1.926) is close to 2, suggesting little to no autocorrelation within each sub-period. This is an improvement compared to the ARDL models which showed weak co-integration, positive error correction term and autocorrelation. Given the persistent problems with the ARDL models and the clear evidence of structural breaks, the least squares regression with breaks is the most appropriate model for the data of the analysis. It provides clear evidence that the relationships between SALES, TOURISTS and ARTICLES have changed over time. To check the presence of autocorrelation a Breusch-Godfrey LM Test is conducted, results in Table 14. Both the p-value for the F-statistic (0.3149) and the p-value for the Chi-square statistic (0.1991) are well above the conventional significance levels of 0.05 or 0.10. We fail to reject the null hypothesis of no serial correlation at up to 2 lags which is a positive result.

It means that, after accounting for the structural breaks, there is no statistically significant evidence of autocorrelation in the residuals and this fact increased the reliability of the results.The next step is to ensure the validity of the inferences and hence we utilize the Breusch-Pagan-Godfrey test for heteroskedasticity, which is represented in Table 15.

Table 14. Breusch-Godfrey LM Test (Source: Author's elaboration)

Null Hypothesis: No serial correlation at up to 2 lags				
F-statistic	1.242952	Prob. F(2,16)		0.3149
Obs*R-squared	3.227417	Prob. Chi-Square(2)		0.1991
Dependent Variable: RESID Method: Least Squares				
Sample: 2000 2023 Included observations: 24 ---- Presample missing value lagged residuals set to zero				
Variable		**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
@BEFORE('2012') TOURISTS		-3.77E-05	0.000114	-0.330077	0.7456
@BEFORE('2012') ARTICLES		0.396394	1.090152	0.363613	0.7209
@DURING('2012-2020') TOURISTS		1.55E-05	0.000164	0.094815	0.9256
@DURING('2012-2020') ARTICLES		0.006508	0.163459	0.039813	0.9687
@AFTER('2021') TOURISTS		0.000476	0.000675	0.705231	0.4908
@AFTER('2021') ARTICLES		-0.200951	0.294047	-0.683399	0.5041
RESID(-1)		0.123055	0.317766	0.387251	0.7037
RESID(-2)		-0.501404	0.318738	-1.573090	0.1353
R-squared	0.134282	Mean dependent var		0.236267	
Adjusted R-squared	-0.244470; S.E. of regression	17.99848	S.D. dependent var	16.13406; Akaike info criterion	8.879653
Sum squared resid	5183.124; Log likelihood	-98.55584	Schwarz criterion	9.272338	
Durbin-Watson stat	1.935069	Hannan-Quinn criter.	8.983833		

Table 15. Breusch-Pagan-Godfrey Test for Heteroskedasticity (Source: Author's elaboration)

Heteroskedasticity Test: Breusch-Pagan-Godfrey				
Null Hypothesis: Homoskedasticity				
F-statistic	1.672074	Prob. F(6,17)	0.1885	
Obs*R-squared	8.907024	Prob. Chi-Square(6)	0.1789	
Scaled explained SS	3.281814	Prob. Chi-Square(6)	0.7727	
Test Equation: Dependent Variable: RESID^2 Method: Least Squares				
Sample: 2000 2023 Included observations: 24				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-206.9570	493.6720	-0.419220	0.6803
@BEFORE('2012')*TOURISTS	0.006458	0.007842	0.823519	0.4216
@BEFORE('2012')*ARTICLES	7.338611	16.44796	0.446171	0.6611
@DURING('2012-2020')*TOURISTS	0.001686	0.005359	0.314536	0.7569
@DURING('2012-2020')*ARTICLES	2.970892	2.546010	1.166881	0.2594
@AFTER('2021')*TOURISTS	0.015805	0.008008	1.973554	0.0649
@AFTER('2021')*ARTICLES	-2.241183	4.732752	-0.473548	0.6418
R-squared	0.371126	Mean dependent var	249.5176	
Adjusted R-squared	0.149170 S.E. of regression	269.0968	S.D. dependent var	291.7341
Sum squared resid.	1231022. Log likelihood	-164.1981	Akaike info criterion 14.26651 Schwarz criterion	14.61011
F-statistic	1.672074 Prob(F-statistic)	0.188478	Hannan-Quinn criter. 14.35767 Durbin-Watson stat	2.531175

All three p-values indicate that we fail to reject the null hypothesis of homoskedasticity. This is a result, which shows, that after accounting for the structural breaks, there is no statistically significant evidence of heteroskedasticity in the residuals of our model. The p-values are the following: Prob. F(6, 17) = 0.1885: This p-value is well above the conventional significance levels of 0.05 or 0.10; Prob. Chi-Square(6) = 0.1789; Prob. Chi-Square (6) = 0.7727: This p-value is also well above 0.05 or 0.10. Since this test indicates no significant heteroskedasticity, the standard errors and p-values from the regression with breaks are likely reliable. With the absence of autocorrelation, heteroskedasticity, and significant deviations from normality, this regression with breaks is a well-specified and reliable model. The key findings from the least squares regression with breaks, show that the relationships between SALES, TOURISTS, and ARTICLES changed significantly across the three periods. The effect of TOURISTS was much stronger in the 2021-2023 period, while the effect of ARTICLES was strongest in the 2000-2011 period and weaker in the later periods. This suggests that tourism has become an increasingly important driver of Aperol sales. The influence of articles mentioning Aperol has weakened over time, with a reduced impact in the periods after 2012 and 2021. This could suggest that other factors like social media marketing, changes in consumer preferences, or other marketing efforts have become more important than traditional media mentions. The diminished impact can be elucidated through the lens of Rogers' (2003) Diffusion of Innovations theory. Specifically, the global proliferation of Aperol Spritz may no longer hold the same level of appeal for early adopters, who are typically the individuals responsible for authoring such articles. As the innovation reaches a saturation point among this

demographic, their enthusiasm and interest in promoting it may wane, thereby contributing to the observed weakening effect. Covid-19 and the EU economy slowdown in 2012 have influenced the sales of Aperol and Campari Group also. Algieri et al. (2023) state that many scientists have demonstrated that tourism is a sector extremely vulnerable to crises, epidemics, security threats, climate change and natural or human-induced disasters (Gössling et al., 2021; McKercher, 2021; Santana-Gallego et al., 2020). Overall the regression with breaks is the most appropriate and reliable model for this data. It effectively captures the structural changes in the relationships between Aperol sales, tourist arrivals, and articles mentioning Aperol.

However the study meets some important limitations which reduce the precision of the estimates and the power of the statistical tests like: the small sample size; while the analysis shows that tourist arrivals are associated with Aperol sales, it doesn't definitively prove that only increased tourism causes higher sales, as there could be other factors that influencing sales of Aperol; the study does not explicitly account for other potential factors that could influence Aperol sales, such as economic conditions, changes in consumer tastes, competitor activities, or marketing campaigns beyond media mentions.

A future research with a larger dataset and the inclusion of other relevant variables would be beneficial for a better study the influence and correlations of tourism associated factors. For example in the period 2015 – 2023 Campari group marketing expenses almost doubled from 286.3 million euros to 494.1 million euros (Campari group financial reports, 2015 – 2024). Due to lack of extensive data regarding marketing expenses in the last 24 years we did not manage to include this factor in our regression model. We can also construct a model where tourist arrivals are impacted by Aperol sales and the articles regarding Aperol, which may be reviewed as absurdity in certain conditions but it is not an impossible effect.

Many people may visit Italy after reading an interesting book about the country or trying a typical Italian product. For example, according to our calculations based on statistics from a survey of Bank of Italy in 2019, more than 5% of the total world population have visited Italy at least once in their lives which accounts for the high popularity of Italian culture and products worldwide. Italian drink and gastronomical driven Tourism is a major factor for the local economy as Aperol is following the tracks of wine tourism. With over 40 million annual tourists visiting wineries, this type of tourism is becoming an important source of revenue for local communities (Vecchio et al., 2024). However, by 2020, this figure had significantly declined to just 31%, as shown in Table 16. This shift was driven by a remarkable surge in international sales and the Campari Group's extensive global marketing campaigns, which successfully expanded Aperol's presence and popularity in markets outside Italy. The highest volume of Aperol sales outside Italy was recorded in Germany between 2004 and 2019. Notably, Germany has also been the largest source of international tourists to Italy since 1997, according to data from the Bank of Italy.

This correlation underscores the critical role of tourism as a catalyst for economic spillover effects, stimulating income generation in sectors beyond the tourism industry itself. In 2024 Aperol sales grew by 5,3% compared to 2023, supporting the overall growth of Campari Group sales, while incoming tourist arrivals rose 4,9% compared to 2023.

Table 16. Share of the Italian market in Aperol brand sales (Source: Author's elaboration - Based on Campari group financial reports, 2024)

year	2005	2006	2007	2008	2009	2010	2011	2020
% of sales in Italy	90%	90%	85%	80%	70%	60%	50%	31%

CONCLUSION

The multiplier effect generated by Italian tourism is intrinsically linked to the prevailing popularity of the Aperol Spritz cocktail. Both Prosecco and Aperol serve as significant contributors to the Italian economy, with Prosecco predominantly cultivated in the Veneto and Friuli Venezia Giulia regions, and Aperol sourced from local manufacturing processes that bolster employment and economic activity. Furthermore, the sales volume of the Campari Group transcends initial tourist expenditure; rather, it is the robust performance of exports and international sales that primarily drives the brand's profitability.

The cultural resonance of the Aperol Spritz cocktail, associated with the Italian "aperitivo" tradition, has effectively positioned it as a symbol of the Italian experience—a facet that not only attracts tourists but also engenders economic benefits that surpass mere direct consumption. The study highlights the importance of culinary branding in destination marketing and economic development. The investigation reveals that Aperol's sales trajectory during the period from 2000 to 2011 was significantly shaped by academic discourse regarding the aperitif, as evidenced by the positive correlation between citations of Aperol in Google Scholar and increased sales, thus supporting the cultural theory of impact. In recent years, the resurgence of tourism in Italy post-COVID-19 has played a consequential role in elevating Aperol's success, aligning with the spillover effects supportive of the multiplier effect theory.

Employing regression models with varied lags and Granger causality tests, this study has established a correlation between tourist arrivals in Italy and both the sales of Aperol and the frequency of articles referencing the aperitif. Notably, the results indicate that while tourist arrivals significantly influence the popularity of Aperol Spritz, they are not the sole determinant of its market presence. This opens avenues for future research, emphasizing the need to investigate the impact of targeted marketing strategies and advertising campaigns implemented by the Campari Group on consumer behavior and brand perception. The study contributes to two key literatures- tourism economics, by quantifying how destination experiences shape global consumption trends and brand management, by demonstrating how heritage brands can harness cultural capital for international expansion. These findings contribute to the existing literature on culinary branding within the broader scope of destination marketing and economic development, highlighting the intricate relationships between culture, tourism, and industry dynamics. The analysis underscores that the remarkable success of Aperol can be attributed not solely to the marketing initiatives executed by the Campari Group but also to Italy's robust positioning within the global tourism landscape. Further investigation into these intersections stands to enrich our understanding of how brands can leverage cultural narratives within tourism contexts to foster economic growth and sustainability.

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