

Assessing the liquidity in Portuguese hotel companies

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Abstract

The hospitality companies have had substantial growth in the tourism sector which gives them a large part of the revenue generated by the sector. In this regard, its impact, whether negative or positive, is quite high and generates a response to a need felt by agents of the environment in which it operates.

As a short-term sustainability indicator, the liquidity level of a company demonstrates its ability to repay its obligations, being a great management support for decision making and anticipation of financial problems that may arise. Considering the volatility of hotel companies, greater importance is given to the study of liquidity.

The main liquidity ratios of Portuguese hotels in the 2010-2017 period will be analysed; data was collected on July 4, 2019, on the SABI platform and the original sample is composed of 2161 hotel companies registered with two Portuguese economic activity codes (CAE), “55111 - Hotels with restaurant” and “55121 - Hotels without restaurant”.

The assessment of liquidity level will be important to decision makers understand if there are differences between hotels with or without restaurant and among the Portuguese districts where hotels are located.

The results of this study are expected to be of assistance to hotel managers as decisions taken within the organization can be more deliberate and informed.

Keywords:

Short-term sustainability; liquidity; hotel companies; hospitality industry.

Introduction

Liquidity ratios are an extremely important tool in the management of a company, as we can predict some situations that may arise during the activity. The ability to cope with economic crises is an important issue for hotel companies to consider.

It is intended that in hotel companies, as in companies in general, their accounts are balanced. An essential part of the balanced situation corresponds to the liquidity, which means capacity to meet its commitments with creditors in the short-term.

In hospitality, liquidity assessment is an important tool for day-to-day management. This article aims to study the liquidity level of Portuguese hospitality companies and, in order to give tools to hoteliers, it will be done regarding if there are differences between hotels with or without restaurant and among the Portuguese districts where hotels are located.

For the research, elements were collected in the SABI databases, in the period between 2013 and 2017, in order to carry out the liquidity indicators calculation for the same time interval. It is expected that the sample under study with values understood and equated for the 5-year period (2013-2017) allow reliable ratios that will be useful for hotel managers' decisions.

The relevance of this article is based on the need for studies of Portuguese hotel companies and their components. It may serve as a basis to assess investments in the lodging industry, selecting the location with higher liquidity and consider whether or not the hotel should have a restaurant.

Literature Review

Profitability, liquidity and solvency are measuring ratios that are named as the most significant indicators. They do not have a pre-established order of importance because they are complementary when related their importance in a company (Altman, 1968). However, all companies should check their ability to pay the debts when they need to be paid, this phenomenon is called as liquidity of a company and this is done by liquidity ratios (Jagels & Coltman, 2004).

The profitability indicates a lot of important information to the companies. However, not always is synonym of bankrupt when is poor, in cases like this it is crucial to resort to liquidity to consider this like a serious or not serious information. In several firms is clearly evident when something pop-ups and it is not normal (Altman, 1968).

Once liquidity is the ability of converting an asset into cash when a period of countability year ends is also the reference to the ability to pay in cash or something that can easily be returned in cash. The liquidity has three forms that has to be consider: the time that the asset is in conditions to be again convertible as cash; the quality of the asset to be converted; and the value that we can recover with that asset because sometimes is not fair (Pareja, 2012).

The income statement comprises all the results of a company combining all the income and expenses existing in a given period that later reports the results of operations and clearly identifies what generates or does not generate revenue (Jagels & Coltman, 2004). The same authors argue that it is important to aim that any future economic event or issue that has an impact on the company or organization in relation to its results or, as a result, its liquidity should be alerted to all potential investors and/or the positioning of the company.

Liquidity means the ability of a company to meet its financial commitments within agreed terms. According to Brealey & Myers (2000), liquidity is a very important research field in Corporate Finance, because proper liquidity management is an essential premise for business continuity. In the same sense, Matarazzo (2003) states that the result of liquidity ratios indicates the company's ability to withstand eventual setbacks or its autonomy from lenders. Indeed, with the constant changes in the economic environment, the need for changes to business models is created. Most of the time, company managers adopt new behaviour and management standards, aiming at the success of their activities (Braga & Marques, 2001).

In this regard, and in order to make the best decisions, it is important to consider the capital structure as well as the liquidity of the company (Smart, Megginson & Gitman, 2007). The capital structure is generally chosen by companies based on the industry average. According to Hovakimian, Opler, & Titman (2001), this is due to an intraindustrial leverage pattern. Rajan & Zingales (1995) point out, on the one hand, larger companies as those that rely more on liabilities. On the other hand, the authors refer to growing companies as having increasing cash flows, so that they mostly resort to internal financing for their investments. Such growth, according to Frank & Goyal (2009), implies lower debts, a theory corroborated by Kayhan & Titman (2007), claiming that loans are less used the greater the corporate profit.

The relationship between cash flows and liquidity works in much the same way. Cash flow analysis allows understanding of the liquidity formation chain (Sá, 2004). According to Jensen (1986), the reduction in liabilities may be financed by a surplus of cash flows. The greater the availability of cash flows, the lower the need for external financing (Ferreira & Vilela, 2004).

In 1999, Campos warns of the importance of cash flow variation, highlighting the risk present in basing decision-making only on accounting statements. Regarding the perceptions about the utility of the cash-flow, several authors cited by Sá (2004) expressed their views on this topic, as shown in Table 1:

Table 1: Perception of cash-flow

Author	Perception
Gitman (1997)	Refers to cash flow as the backbone of the company, claiming that only an analysis of it can meet the company's financial needs.
King (1994)	Addresses the long-term theme, in which he says that eventually cash flows and profit will be equal over the long term. However, quotes Keynes "Yes, but in the long run we could all be dead".
Smith (1994)	Takes a more pragmatic position in that he compares the balance sheet with cash flows, and where the latter are facts.
Falcini (1992)	Associates cash flows with a logic in which investors must consider not only operating income or accounting profit but also cash flows. He also adds that investors who primarily use cash flows cash flow but ultimately based on profit for decision making "are weighing oranges counting apples".
Drucker (1992)	State that a company can operate without profits as long as its cash flows meet the needs. However, it is not possible to happen exactly the opposite because it is no longer possible to support the company.
Goldratt & Cox (1990)	Claim that even with a profit in a company it can go bankrupt. A bad cash flow is usually what kills the rest of a company in bad situations.
Hendriksen (1982)	Considers that the development of cash flow statements causes large discrepancies between the posting period and when the flows existed.

Source: Adapted from Sá (2004, 9-11)

According to Gitman (1997) a liquidity ratio can be more credible if supported by a good cash flow forecast. The author, states that the required liquidity is much lower in cases where there is an almost accurate forecast of cash flows. Nevertheless, Lopes de Sá (1998) states that, even with the aid of cash flow statement, there are no predefined models that prove the ideal ratio of liquidity, so that a system of equilibrium can be verified.

Methodology

Firstly, a literature review was performed, in which it is possible to associate concepts and techniques of liquidity ratios/indicators with studies previously done and developed.

Data was collected on July 4, 2019, on the SABI platform, from Bureau Van Dijk (A Moody's Analytics Company), and the original sample was composed by 2161 hotel companies registered with two Portuguese economic activity codes (CAE), "55111 - Hotels with restaurant" and "55121 - Hotels without restaurant" between 2010 and 2017. Afterwards, and after exporting and processing the data, a large part of the sample (1059 companies) was excluded when the chosen liquidity ratios were calculated. The reason for the exclusion is the lack of information, such as incomplete or non-existent data.

The main liquidity ratios of Portuguese hotels in the 2013-2017 period were calculated, but there were not considered 1059 companies in which data wasn't available or is incomplete to calculate the liquidity ratios. For this reason, the sample was established in 1102 companies and the 2010-2012 period wasn't

considered in the analysis.

The main short-term financial ratios were calculated and analysed, in order to understand whether Portuguese hotel companies are able to settle current liabilities with their cash, bank accounts and accounts receivable or, if considered inventories, with their current assets. By other words, to understand the liquidity level assessing the net working capital and the liquidity margin.

The ratios that were used to stablish the liquidity of Portuguese hotel companies were:

$$\text{Current Liquidity Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

$$\text{Current Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Liquidity Margin} = \text{Quick Assets} - \text{Current Liabilities}$$

$$\text{being Quick Assets} = \text{Current Assets} - \text{Inventories}$$

In order to allow responding to the proposed objectives for the article, after calculating the ratios the sample was organised by districts and separated according to whether or not hotels have a restaurant.

Regarding the level of liquidity in the Portuguese hospitality industry, the results highlight differences by region (district) which allows a more complete analysis. Studying the relationship between hotels with and without restaurants (CAE 55111 and 55121) and financial liquidity ratios will provide managers with an important decision support tool.

Findings and discussion

The data on the sample was organised according to the ratios and indicators to calculate. The companies that are being studied were separated in two different main groups, hotels with restaurant (CAE 55111) where exists 927 valid companies, that represents 84.1% and hotels without restaurant (CAE 55121) with a total of 175 companies, that represents the other 15.9%. This makes a total of 1102 companies in the sample. Then, in terms of geographic distribution, the data were divided by districts, with Lisbon, which accounts for 25.9% of the total sample, is the district with the most companies, followed by Porto with 137 out of a total of 1102 and then Faro with 116 companies.

Table 2: Relation between districts and Economic Activity Codes

Districts	Economic Activity Codes		Total
	55111	55121	
Angra do Heroísmo	2	3	5
Aveiro	38	8	46
Beja	12	6	18
Braga	38	11	49
Bragança	12	3	15
Castelo Branco	22	1	23
Coimbra	29	8	37
Évora	14	2	16
Faro	102	14	116
Funchal	79	4	83
Guarda	11	0	11
Horta	4	3	7
Leiria	40	15	55
Lisboa	253	32	285
Ponta Delgada	21	8	29
Portalegre	14	1	15
Porto	105	32	137
Santarém	41	6	47

Setúbal	27	8	35
Viana do Castelo	20	7	27
Vila Real	13	0	13
Viseu	30	3	33
Total	927	175	1102

Concerning the average values presented by companies, there is a division between 3 crucial variables. The graph presented is divided into 3 groups. Group 1 refers to the current liabilities of the companies studied, while in group 2 this reflects the values of Current Assets and in the last group we observe the value of inventories, in euros.

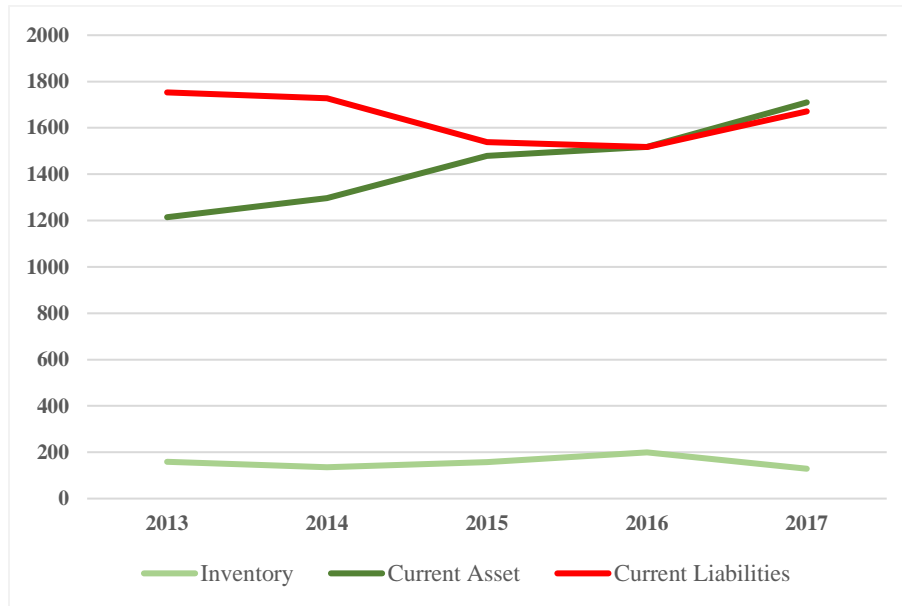
The first group, refers to the company's current liabilities and shows us that the values have been varied, without a noticeable decrease or evolution, however, the value of 2013 (€ 1753) is slightly higher than the value of 2017 (€ 1671), with the lowest value observed in 2015 (€ 1538).

Regarding the second group, we can see an evolution regarding the average of current assets, with the value of 2013 (€ 1214) being € 500 lower than the value of 2017 (€ 1709). This means that companies were gradually increasing the value in current assets and consequently in the short term.

Finally, despite their low values, inventories had their exponential average in 2016 (€ 199), in 2013 the value was € 159 and significantly decreased until 2017 with € 128, considered a very small value. for a company's inventory.

Despite the interpretation given to the average values, it is important to emphasize the idea that in the sample by districts there are outliers that influence company values, which makes some values less reliable and difficult to interpret.

Graphic 1: Average of the values presented by the companies

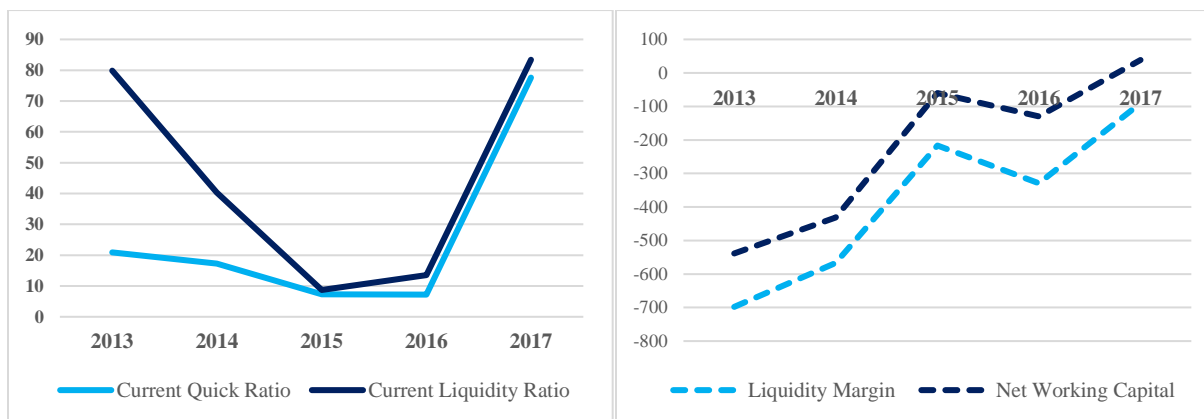


Then, the analysis of the average ratio by district was calculated to each one of the studied ratios/indicators: Current Liquidity Ratio, Net Working Capital, Current Quick Ratio and Liquidity Margin.

- The Current Liquidity Ratio is generally constant, however, had an evolution in the last year studied (2017).
- The Current Quick Ratio has always been at par with the Current Liquidity Ratio, registering the same behaviour.
- The Net Working Capital, being negative, has increased over the years, having reached its lowest point in 2017 after a slight recovery in the previous two years.

- With respect to Liquidity Margin, despite being below Net Working Capital has followed its graphic line.

Graphic 2: Average ratios and indicators by years



In order to understand the correlation between variables Spearman's Rho test was done. Spearman's coefficient is a nonparametric measure of correlation between two variables, that allow measuring the intensity of relationship between two variables. This coefficient is equal to the known Pearson correlation. However, a Spearman correlation evaluates monotonous relationships, whether linear or not.

The Spearman coefficient ranges from -1 to 1. That is, the closer these extremes, the greater the association between the variables. To validate whether an association is significant or not, significance level values must be equal or less than 0.05.

Through the Spearman coefficient, it was possible to realize that during the 2013-2017 period:

- inventories always had a strong positive correlation both with current assets and current liabilities.
- current assets always had a strong positive correlation both with inventories and current liabilities;
- current liabilities always had a strong positive correlation both with inventories and current assets; but, current liabilities verify a clear negative correlation with all the ratios analysed in this study;
- there is a strong correlation between current quick ratio and current liquidity ratio, liquidity margin and net working capital. It is also noted that both the liquidity margin has a strong correlation with the net working capital. In the same way, all the ratios establish negative correlation with current liabilities.
- Among the ratios, a strong positive correlation between them was confirmed.

Table 3: Results of Spearman's Rho Test to verify the relation between variables

	2013	Inventories	Current Assets	Current Liabilities	Current Quick Ratio	Current Liquidity Ratio	Liquidity Margin	Net Working Capital
Inventories	Correlation coefficient Sig. (2 tailed)	1	,512** 0	,474** 0	-,194** 0	-,085** 0,005	-,233** 0	-,112** 0
Current Assets	Correlation coefficient Sig. (2 tailed)	,512** 0	1	,628** 0	,187** 0	,228** 0	,086** 0,004	,176** 0
Current Liabilities	Correlation coefficient Sig. (2 tailed)	,474** 0	,628** 0	1	-,545** 0	-,545** 0	-,553** 0	-,498** 0
Current Quick Ratio	Correlation coefficient Sig. (2 tailed)	-,194** 0	,187** 0	-,545** 0	1	,953** 0	,846** 0	,800** 0
Current Liquidity Ratio	Correlation coefficient	-,085**	,228**	-,545**	,953**	1	,821**	,855**

	Sig. (2 tailed)	0,005	0	0	0	0	0	0
Liquidity Margin	Correlation coefficient	-,233**	,086**	-,553**	,846**	,821**	1	,945**
	Sig. (2 tailed)	0	0,004	0	0	0	0	0
Net Working Capital	Correlation coefficient	-,112**	,176**	-,498**	,800**	,855**	,945**	1
	Sig. (2 tailed)	0	0	0	0	0	0	0
	2014	Inventories	Current Assets	Current Liabilities	Current Quick Ratio	Current Liquidity Ratio	Liquidity Margin	Net Working Capital
Inventories	Correlation coefficient	1	,511**	,441**	-,145**	-0,051	-,168**	-,064*
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,091	0,000	0,032
Current Assets	Correlation coefficient	,511**	1	,612**	,202**	,235**	,115**	,188**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Liabilities	Correlation coefficient	,441**	,612**	1	-,559**	-,561**	-,545**	-,502**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Quick Ratio	Correlation coefficient	-,145**	,202**	-,559**	1	,961**	,846**	,807**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Liquidity Ratio	Correlation coefficient	-0,051	,235**	-,561**	,961**	1	,827**	,853**
	Sig. (2 tailed)	0,091	0,000	0,000	0,000	0,000	0,000	0,000
Liquidity Margin	Correlation coefficient	-,168**	,115**	-,545**	,846**	,827**	1	,958**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Net Working Capital	Correlation coefficient	-,064*	,188**	-,502**	,807**	,853**	,958**	1
	Sig. (2 tailed)	0,032	0,000	0,000	0,000	0,000	0,000	0,000
	2015	Inventories	Current Assets	Current Liabilities	Current Quick Ratio	Current Liquidity Ratio	Liquidity Margin	Net Working Capital
Inventories	Correlation coefficient	1	,524**	,478**	-,173**	-,066*	-,179**	-,065*
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,029	0,000	0,032
Current Assets	Correlation coefficient	,524**	1	,622**	,213**	,253**	,134**	,213**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Liabilities	Correlation coefficient	,478**	,622**	1	-,534**	-,537**	-,522**	-,475**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Quick Ratio	Correlation coefficient	-,173**	,213**	-,534**	1	,957**	,846**	,801**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Liquidity Ratio	Correlation coefficient	-,066*	,253**	-,537**	,957**	1	,824**	,850**
	Sig. (2 tailed)	0,029	0,000	0,000	0,000	0,000	0,000	0,000
Liquidity Margin	Correlation coefficient	-,179**	,134**	-,522**	,846**	,824**	1	,956**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Net Working Capital	Correlation coefficient	-,065*	,213**	-,475**	,801**	,850**	,956**	1
	Sig. (2 tailed)	0,032	0,000	0,000	0,000	0,000	0,000	0,000
	2016	Inventories	Current Assets	Current Liabilities	Current Quick Ratio	Current Liquidity Ratio	Liquidity Margin	Net Working Capital
Inventories	Correlation coefficient	1	,520**	,469**	-,151**	-0,056	-,137**	-0,018
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,063	0,000	0,542
Current Assets	Correlation coefficient	,520**	1	,627**	,224**	,255**	,198**	,281**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Liabilities	Correlation coefficient	,469**	,627**	1	-,524**	-,526**	-,454**	-,403**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Quick Ratio	Correlation coefficient	-,151**	,224**	-,524**	1	,962**	,837**	,795**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Liquidity Ratio	Correlation coefficient	-0,056	,255**	-,526**	,962**	1	,812**	,842**
	Sig. (2 tailed)	0,063	0,000	0,000	0,000	0,000	0,000	0,000
Liquidity Margin	Correlation coefficient	-,137**	,198**	-,454**	,837**	,812**	1	,947**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Net Working Capital	Correlation coefficient	-0,018	,281**	-,403**	,795**	,842**	,947**	1
	Sig. (2 tailed)	0,542	0,000	0,000	0,000	0,000	0,000	0,000
	2017	Inventories	Current Assets	Current Liabilities	Current Quick Ratio	Current Liquidity Ratio	Liquidity Margin	Net Working Capital
Inventories	Correlation coefficient	1	,509**	,485**	-,147**	-0,059	-,118**	-0,005
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,051	0,000	0,857

Current Assets	Correlation coefficient	,509**		,626**	,250**	,271**	,257**	,330**
	Sig. (2 tailed)	0,000	1	0,000	0,000	0,000	0,000	0,000
Current Liabilities	Correlation coefficient	,485**	,626**	1	-,499**	-,509**	-,404**	-,355**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Current Quick Ratio	Correlation coefficient	-,147**	,250**	-,499**		,964**	,846**	,806**
	Sig. (2 tailed)	0,000	0,000	0,000		0,000	0,000	0,000
Current Liquidity Ratio	Correlation coefficient	-0,059	,271**	-,509**	,964**		,825**	,843**
	Sig. (2 tailed)	0,051	0,000	0,000	0,000	1	0,000	0,000
Liquidity Margin	Correlation coefficient	-,118**	,257**	-,404**	,846**	,825**		,957**
	Sig. (2 tailed)	0,000	0,000	0,000	0,000	0,000	1	0,000
Net Working Capital	Correlation coefficient	-0,005	,330**	-,355**	,806**	,843**	,957**	
	Sig. (2 tailed)	0,857	0,000	0,000	0,000	0,000	0,000	1

The Kruskal-Wallis test is a nonparametric method to test whether samples originate from the same distribution. In this case, the Kruskal-Wallis test allows us to compare the median of the districts, so that it is possible to know if the various ratios present equal distribution in them.

Kruskal-Wallis test shows that the ratio between districts has an equal distribution, since the ratio values are higher than 0.05.

Therefore, as table 4 shows, the null hypothesis must be accepted, i.e. all ratios are evenly distributed across districts.

Table 4: Results of Non-parametric Kruskal-Wallis test to verify if districts median present equal distribution

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Current Quick Ratio 2013 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,719	Retain null hypothesis.
2	The distribution of Current Quick Ratio 2014 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,676	Retain null hypothesis.
3	The distribution of Current Quick Ratio 2015 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,764	Retain null hypothesis.
4	The distribution of Current Quick Ratio 2016 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,852	Retain null hypothesis.
5	The distribution of Current Quick Ratio 2017 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,814	Retain null hypothesis.
6	The distribution of Current Liquidity Ratio 2013 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,555	Retain null hypothesis.
7	The distribution of Current Liquidity Ratio 2014 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,578	Retain null hypothesis.
8	The distribution of Current Liquidity Ratio 2015 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,634	Retain null hypothesis.
9	The distribution of Current Liquidity Ratio 2016 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,847	Retain null hypothesis.
10	The distribution of Current Liquidity Ratio 2017 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,796	Retain null hypothesis.
11	The distribution of Liquidity Margin 2013 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,764	Retain null hypothesis.
12	The distribution of Liquidity Margin 2014 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,301	Retain null hypothesis.
13	The distribution of Liquidity Margin 2015 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,361	Retain null hypothesis.
14	The distribution of Liquidity Margin 2016 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,659	Retain null hypothesis.
15	The distribution of Liquidity Margin 2017 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,244	Retain null hypothesis.
16	The distribution of Net Working Capital 2013 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,664	Retain null hypothesis.
17	The distribution of Net Working Capital 2014 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,297	Retain null hypothesis.
18	The distribution of Net Working Capital 2015 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,336	Retain null hypothesis.
19	The distribution of Net Working Capital 2016 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,599	Retain null hypothesis.

20	The distribution of Net Working Capital 2017 is equal in Districts categories.	Independent Samples of Kruskal-Wallis Test	,176	Retain null hypothesis.
Asymptotic significances are exhibited. Significance level is 0,05.				

The economic and financial ratios mentioned throughout this study are supporting tools that allow to synthesize a vast list of data and compare the economic and financial performance of companies and their evolution over time. Thus, the economic and financial ratios, in this study, allow to understand the evolution of Portuguese hotel companies, according to their division of CAE's. Concerning ratios median across districts, it allows us to identify districts with bigger or smaller median, by ratio.

During the 2013-2017 period, as exposed in table 5, it was possible to state some conclusions:

- Concerning median current liquidity ratio, the districts of Angra do Heroísmo, Bragança, Castelo Branco, Horta and Porto have the highest median, i.e., the Portuguese hotel companies present, in these districts, have the better capacity to meet their short-term obligations, whereas in the districts of Beja, Braga, Guarda and Vila Real, the opposite is true.
- The district of Angra do Heroísmo, Bragança, Horta and Porto present the biggest median current quick ratio in Portugal. On the other hand, the districts of Braga and Vila Real presents the lowest median current quick ratio.

Table 5: Median Ratios and Indicators by districts

Current Liquidity Ratio	2013	2014	2015	2016	2017
Angra do Heroísmo	1.3213	2.064	2.3273	2.3187	1.4665
Aveiro	0.9748	1.0055	1.0315	1.1137	1.0435
Beja	0.7660	0.63	0.7827	0.5768	0.7549
Braga	0.5597	0.4606	0.489	0.6712	0.7348
Bragança	1.3379	0.4569	0.7826	3.0226	5.633
Castelo Branco	0.8658	0.5045	0.6348	0.8710	1.4601
Coimbra	1.1240	0.9082	0.8702	0.7566	1.0574
Évora	0.6759	0.6084	0.6669	0.8317	0.6319
Faro	0.9997	1.054	1.0227	1.0642	1.1655
Funchal	0.8425	0.6941	0.5772	0.6358	0.8449
Guarda	0.2966	0.6052	0.4293	0.6936	0.7468
Horta	1.7135	2.0269	2.1659	2.4814	1.762
Leiria	0.4934	0.5523	0.5537	0.6596	0.7396
Lisboa	0.9310	0.6975	0.7594	0.9126	1.1816
Ponta Delgada	0.7369	0.4991	0.6475	0.8024	1.1213
Portalegre	0.7341	0.8282	0.6236	0.8347	0.7709
Porto	1.0564	1.1375	1.0366	1.2306	1.3954
Santarém	0.4390	0.5844	0.4981	0.6195	0.877
Setúbal	0.4994	0.6236	0.9557	0.9245	0.9507
Viana do Castelo	0.8667	0.9526	1.2287	1.0202	1.1913
Vila Real	0.3639	0.5406	0.4817	0.2631	0.6165
Viseu	0.58	0.6236	0.7219	0.8827	1.1146
Current Quick Ratio	2013	2014	2015	2016	2017
Angra do Heroísmo	1.1920	2.064	2.3273	2.3187	1.4665
Aveiro	0.9072	1.0055	1.0315	1.1137	0.9977
Beja	0.7569	0.63	0.7827	0.5768	0.6877
Braga	0.4819	0.4606	0.489	0.6712	0.6367
Bragança	1.3041	0.4569	0.7826	3.0226	4.9383
Castelo Branco	0.7146	0.5045	0.6348	0.8710	1.1938
Coimbra	1.0361	0.9082	0.8702	0.7566	0.9917
Évora	0.5732	0.6084	0.6669	0.8317	0.5104
Faro	0.8406	1.054	1.0227	1.0642	1.0544
Funchal	0.6895	0.6941	0.5772	0.6358	0.7461
Guarda	0.2966	0.6052	0.4293	0.6936	0.6814
Horta	1.6874	2.0269	2.1659	2.4814	1.7603

Leiria	0.4486	0.5523	0.5537	0.6596	0.7328
Lisboa	0.7912	0.6975	0.7594	0.9126	1.0926
Ponta Delgada	0.7369	0.4991	0.6475	0.8024	1.0814
Portalegre	0.3874	0.8282	0.6236	0.8347	0.6879
Porto	0.9267	1.1375	1.0366	1.2306	1.3185
Santarém	0.4390	0.5844	0.4981	0.6195	0.8542
Setúbal	0.4994	0.6236	0.9557	0.9245	0.773
Viana do Castelo	0.8667	0.9526	1.2287	1.0202	1.0202
Vila Real	0.3639	0.5406	0.4817	0.2631	0.5269
Viseu	0,58	0.6234	0.7219	0.8827	1.0020
Net Working Capital	2013	2014	2015	2016	2017
Angra do Heroísmo	47.3394	71.0704	66.7055	153.4913	105.4887
Aveiro	-0.7456	5.1573	5.4545	1.9663	5.3322
Beja	-27.9188	-14.1929	-4.1832	-27.3832	-46.3245
Braga	-60.3626	-40.1478	-27.866	-11.1901	-8.5302
Bragança	4.8671	-33.5822	-18.6872	59.9609	24.2599
Castelo Branco	-10.3641	-3.5685	-2.5715	3.2626	34.0792
Coimbra	16.9949	-8.0711	-45.9416	-55.6225	7.1375
Évora	-53.6637	-106.0161	-24.2289	-40.9747	-52.3986
Faro	-0.6161	13.7345	18.3707	23.4097	25.4158
Funchal	-30.3646	-104.1245	-186.1415	-124.0882	-90.2931
Guarda	-49.6263	-202.3956	-216.8717	-15.5899	-20.7539
Horta	32.7057	351.1656	418.8109	413.0638	318.9684
Leiria	-103.847	-65.6945	-38.7599	-8.8408	-9.0864
Lisboa	-8.8524	-38.5733	-47.6593	0.8796	33.7913
Ponta Delgada	-139.262	-108.4279	-112.0135	-72.2642	70.3490
Portalegre	-61.5360	-18.22	-47.3874	-11.1578	-41.364
Porto	2.9610	5.7278	7.6391	14.9739	28.3204
Santarém	-46.966	-50.0606	-63.3089	-16.5682	-10.0595
Setúbal	-93.1226	-74.8143	-3.9052	3.2372	-20.4338
Viana do Castelo	0.7531	1.6393	11.6142	5.0251	5.4545
Vila Real	-346.549	-61.2579	-117.1824	-43.5373	-272.0235
Viseu	-16.6965	-12.1622	-6.8827	-7.412	1.9048
Liquidity Margin	2013	2014	2015	2016	2017
Angra do Heroísmo	47.3394	70.9042	66.7055	153.4913	105.4887
Aveiro	-3.5368	1.3211	3.0767	1.1367	-0.7438
Beja	-28.5001	-14.1929	-4.1832	-33.1043	-93.6170
Braga	-62.6447	-62.9387	-55.5583	-23.5899	-17.2373
Bragança	4.8671	-44.8568	-32.1332	37.9399	24.2599
Castelo Branco	-34.2064	-29.8439	-21.6105	-8.4510	29.4970
Coimbra	4.1680	-13.4057	-45.9416	-55.6225	-1.4728
Évora	-134.2136	-113.9244	-63.696	-60.9462	-97.9778
Faro	-9.6867	3.9516	0.3926	7.2404	8.7482
Funchal	-158.5639	-214.1009	-254.7603	-199.8379	-160.8762
Guarda	-49.6263	-212.2652	-216.8717	-19.8220	-26.1119
Horta	32.5134	350.8162	418.4614	412.6327	318.2386
Leiria	-108.2126	-65.7979	-41.8237	-9.541	-9.0864
Lisboa	-60.8431	-89.3117	-68.5178	-21.5201	14.3424
Ponta Delgada	-144.0659	-114.7223	-113.3912	-75.1996	42.1089
Portalegre	-139.6545	-21.3624	-48.2413	-13.2113	-61.0748
Porto	-0.2577	3.5470	0.2496	8.1523	20.4234
Santarém	-50.5024	-50.0606	-71.5731	-36.7467	-10.0595
Setúbal	-93.6241	-74.8143	-12.2906	-8.4414	-23.2284
Viana do Castelo	-11.5228	-4.9474	4.2115	2.2101	2.2698
Vila Real	-346.5499	-94.8581	-158.9335	-52.9962	-272.0235
Viseu	-24.3314	-25.5547	-7.4314	-7.6219	1.4425

The Mann-Whitney U test allows comparing two distinct groups (CAE 51111 and CAE 51121) to determine if the ratios and indicators in this study have equal distribution in them.

Through the Mann-Whitney U test, it is possible to notice that the ratios between CAE's are a different distribution, since the ratios values are less than 0.05. Therefore, the null hypothesis must be rejected, that is, all ratios are distributed differently according to the CAE's.

According to the information shown in table 6, there are no significant differences between the analysed variables, since the error is greater than 0.05. Therefore, in neither case is it possible to corroborate the null hypothesis.

Table 6: Analysis of ratios and indicators by CAE using Mann-Whitney U test

	Null hypothesis	Test	Sig.	Decision
1	The distribution of Current Quick Ratio 2013 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
2	The distribution of Current Quick Ratio 2014 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
3	The distribution of Current Quick Ratio 2015 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
4	The distribution of Current Quick Ratio 2016 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
5	The distribution of Current Quick Ratio 2017 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
6	The distribution of Current Liquidity Ratio 2013 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
7	The distribution of Current Liquidity Ratio 2014 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
8	The distribution of Current Liquidity Ratio 2015 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
9	The distribution of Current Liquidity Ratio 2016 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
10	The distribution of Current Liquidity Ratio 2017 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
11	The distribution of Liquidity Margin 2013 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
12	The distribution of Liquidity Margin 2014 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
13	The distribution of Liquidity Margin 2015 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
14	The distribution of Liquidity Margin 2016 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
15	The distribution of Liquidity Margin 2017 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
16	The distribution of Net Working Capital 2013 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.
17	The distribution of Net Working Capital 2014 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,001	Reject null hypothesis.
18	The distribution of Net Working Capital 2015 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,001	Reject null hypothesis.
19	The distribution of Net Working Capital 2016 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,004	Reject null hypothesis.
20	The distribution of Net Working Capital 2017 is equal in the categories of CAE Ver.3 Principal.	Independent samples of Mann-Whitney U test	,000	Reject null hypothesis.

Asymptotic significances are exhibited. Significance level is ,050.

It is crucial to compare and understand how the ratio/indicator values behave towards the sample. In this case, and namely separated into two distinct groups, CAE 55111 and CAE 55121, the ratios and indicators of the restaurant owners are those with a median value always less than hotel companies that do not have one, as it is shown in table 7.

Table 7: Median ratios / indicators for CAE

Current Quick Ratio	2013	2014	2015	2016	2017
55111	0,6296	0,6468	0.6765	0.7645	0.8816

55121	1,4399	1,366	1,4611	1.7032	1.8266
Current Liquidity Ratio	2013	2014	2015	2016	2017
55111	0,7626	0,7781	0,8054	0,7645	1,0070
55121	1,4873	1,3761	1,4985	1,7032	1,9962
Liquidity Margin	2013	2014	2015	2016	2017
55111	-60,645	-49,8544	-53,8566	-24,9336	-15,0721
55121	15,5544	14,4027	17,6576	32,9366	48,5469
Net Working Capital	2013	2014	2015	2016	2017
55111	-31,2374	-30,2988	-32,3940	-8,8408	0,5116
55121	17,7625	17,4003	18,4657	38,1641	50,4894

Conclusions

This study is based on the need for studies of Portuguese hotel companies namely about its financial balance. It was possible to conclude about the impact of hotel location and of having restaurant in the hotel, on the company's liquidity. Assess liquidity level will be important to decision makers to understand if there are differences between hotels with or without restaurant and among the Portuguese districts where hotels are located.

In order to allow responding to the proposed objectives for the article, after calculating the ratios the sample was organised by districts and separated according to whether or not hotels have a restaurant.

The first conclusion is that the most hotel companies are located in the traditionally well-known tourism districts: Lisbon, Porto and Faro; and there are more hotels with restaurant (84,1%) over hotels without restaurant (15,9%) in each district.

Regarding the average by district, Current Liquidity Ratio and Current Quick Ratio has been irregular over the years, showing the highest values in 2013 and in 2017. Net Working Capital and Liquidity Margin, both being negative, have increased over the years, having reached its highest point in 2017 after a slight recovery in the previous two years. These inconstant values, between 2013 and 2017, reflects contradictory meanings about hotel companies' liquidity.

Analysing the significant association among the ratios and indicators, a strong positive association was found out. It should be noted a weak negative significant association between the inventory variable and all the ratios and indicators as well as between the current liability's variable and all the ratios and indicators. Then, an increase in inventories and an increase in liabilities imply a decrease in hotel liquidity.

Current Liquidity Ratio, Current Quick Ratio, Net Working Capital and Liquidity Margin have the same distribution among the Portuguese districts; thus, hotels have got similar liquidity in all districts. There is no district that is said to be appealing in this regard. Nevertheless, in terms of median values, both Current Liquidity Ratio and Current Quick Ratio indicate that Portuguese hotel companies located in Angra do Heroísmo, Aveiro, Bragança, Castelo Branco, Faro, Horta and Porto, have the better capacity to meet their short-term obligations, as they present the better values during the analysed years. However, this difference is not significant.

When the distribution of ratios is analysed between hotels with and without restaurant the differences are evident in all the groups. Concerning all the analysed ratios, hotels without restaurant present median values higher than hotels with restaurant. Then, hotels without restaurant present a higher level of liquidity than hotels with restaurant.

It is important to highlight that average ratios by district include outliers, which means that some values are skewed and have less reliability. The fact that standard deviation is considerably superior to average means a large dispersion of data, so those outliers should be eliminated in subsequent studies.

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