

**ORIGINAL**  
**Research article**

## **Liquidity and indebtedness of SMEs and micro-enterprises in the Norte de Santander ceramic sector \***

### **Liquidez y endeudamiento de las pymes y microempresas del sector cerámico Norte de Santander**

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#### **Abstract**

This research deals with the analysis of liquidity and indebtedness during the years 2015–2019 of companies in the ceramic sector of Norte de Santander, for which financial indicators of accounting information are used. It is based on a quantitative, documentary approach with panel data and an analysis of trends in accounting indicators taken from a sample of 59 small and microenterprises. As a result, it is found that both small and microenterprises have working capital and positive liquidity with a tendency to grow. On the indebtedness side, small businesses show balance, while microbusinesses present a negative situation that increased during the period under study. The use of financial planning for the application of resources and sources of indebtedness is concluded to be a strategy.

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**Keywords:** Liquidity, Indebtedness, Ceramic Sector, Financial Indicators

### **Resumen**

Esta investigación versa sobre el análisis la liquidez y el endeudamiento durante los años 2015-2019 de las empresas del sector cerámico de Norte de Santander, para ello se utilizan indicadores financieros propios de la información contable. Está basada en un enfoque cuantitativo, documental, con datos en panel, con un análisis de tendencias de los indicadores contables tomando una muestra de 59 entre pequeñas y microempresas. Como resultados, se encuentran que tanto las pequeñas como las microempresas tienen un capital de trabajo y una liquidez positiva con tendencia al crecimiento. Mientras que por el lado del endeudamiento las pequeñas empresas muestran equilibrio y las microempresas presentan una situación negativa que fue aumentando durante el periodo en estudio. Se concluye como estrategia el uso de la planeación financiera para la aplicación de los recursos y las fuentes de endeudamiento.

**Palabras Clave:** Liquidez, Endeudamiento, Sector Cerámico, Indicadores Financieros

### **SUMMARY**

INTRODUCTION. - RESOLUTION SCHEME. - I. Research problem. - II. Methodology. - III. Writing plan. - 1. Liquidity. - 2. Indebtedness. - IV. Research results. - 3.1 Working capital. - 3.2 Liquidity. - 3.3 Analysis of the indebtedness situation. -CONCLUSIONS. - REFERENCES.

### **Introduction**

In the department of Norte de Santander, the ceramic manufacturing sector represents a group of companies historically recognized internationally for the high quality of its raw materials. Ceramic products are part of the base of the construction chain, such as blocks, perforated bricks, and Spanish tiles. In addition, it is an export line, which in 2020, was a driver of the department's growth according to the Chamber of Commerce (National Administrative Department of Statistics, 2020).

In addition, from an economic point of view, it means an outstanding line. According to the report of the Ministry of Commerce (2021), in 2019 the manufacture of mineral products occupied one of the first places, representing 26.60% of the total industrial production and 28.70% of the employed personnel of the department. It is so important that the Chamber of Commerce of Cúcuta (2012) led the formation of the cluster of companies in the ceramic sector, with companies located in the municipalities of Cúcuta, Villa de Rosario, Los Patios, Zulia and San Cayetano.

However, SMEs are not immune to the economic impacts of the context (Díaz, Maestre & Guadrón, 2020), therefore, the situation of the region's economy presents a negative behavior for the area of "construction has been presenting decreases during the previous years, for the third quarter of this year, the variation was 51.00% compared to the previous year" (Chamber of Commerce, 2020), has been affecting the companies. At the same time, a drop in exports from the department was observed, which fell by 20.20% between 2019 and 2020, according to the Ministry of Commerce (2021).

Financial management is essential in SMEs. The analysis of working capital is one of the most vital financial activities for companies, to achieve "the good financial health of the company" (Higuerey-Gómez, Armas-Herrera & Chávez-Alvear, 2019, p. 167). García-Aguilar, Galarza-Torres & Altamirano-Salazar (2017, p. 30) found that in SMEs, "working capital is a financial tool that every manager should pay attention to and dedicate time to, because it determines the survival of a company during the first years of its existence."

Likewise, the situation must be permanently studied to avoid high levels of indebtedness since it could lead to a financial crisis.

For Correa-Mejía & Lopera-Castaño (2020), financial indicators are a powerful instrument to foresee insolvency and avoid credit risk (Cheglakova, 2018). Under the premises above, the main objective of this research work is to analyze the financial behavior of liquidity and indebtedness among small and micro enterprises in the ceramic sector of Norte de Santander.

## **Resolution scheme**

### **1. Research problem**

How is the financial behavior of liquidity and indebtedness of small and micro enterprises in the ceramic sector in Norte de Santander?

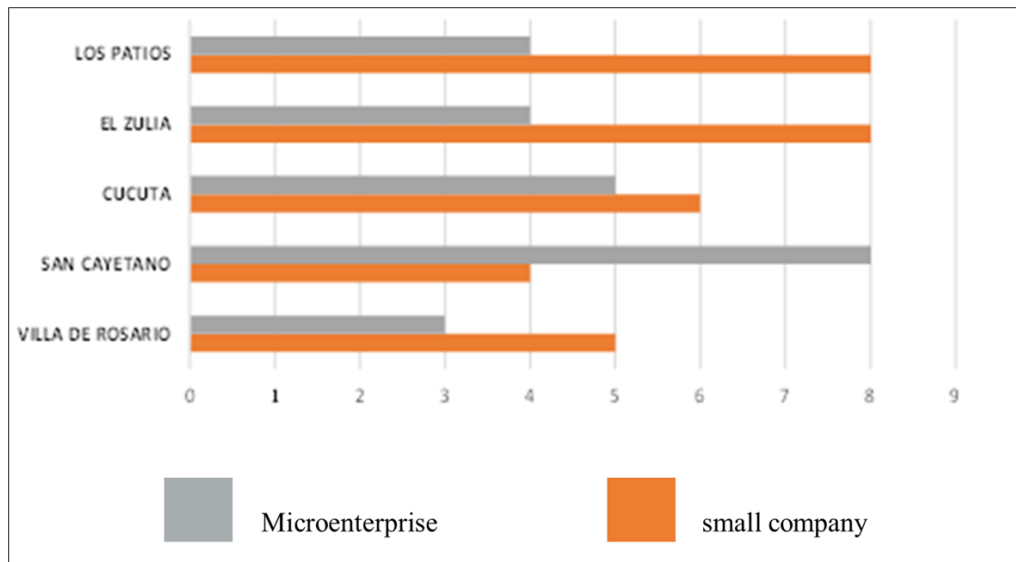
### **2. Methodology**

This research is framed within the quantitative (Ortega & Pick, 2011) and descriptive (Hernández, Fernández & Baptista, 2014); its objective is to evaluate the trends in the financial situation in terms of liquidity and indebtedness of companies in the ceramic sector in Norte de Santander (Amat, 2009). Therefore, the documentary analysis of the financial information of the companies in the ceramic sector was used (Bernal, 2010), using the main financial statements such as the Balance Sheets and Annual Comprehensive Income Statements submitted to the Chamber of Commerce of Cúcuta.

In this order of ideas, the research, from a temporal point of view, has a longitudinal design, given the analysis of the variables over some time (from 2015 to 2019). Then, the calculation of financial indicators (liquidity, working capital, indebtedness, solvency, among others) was used during the five years, which allowed for studying their trend and visualizing the main variations. The Excel program was used to process the variables.

For the sample, small and micro-enterprises registered in the ceramic sector in the activity described by CIIU code 2393, which corresponds to the manufacture of other ceramic and porcelain products, were taken into account. On the other hand, the economically active companies were selected and grouped by business size for the industry sector, applying the current classification by income level for small and micro companies contained in the (Decree 957 of 2019), as shown in Figure 1, leaving a total sample of 59 companies.

**Figure 1.** *Number of companies by location and size*



Source: own elaboration.

### 3. Writing plan

#### 3.1 Liquidity

In financial management, "current capital is understood as the permanent resource (non-current liabilities and net equity) that finances the part of current assets" (Besley & Brigham, 2016, p. 28); that is, "they are all the long-term financial resources that the company needs to be able to carry out its activity in the short term" (Córdoba, 2014, p. 15). Positive net working capital gives the company greater control over its liquidity management. Block, S., & Hirt, G. (2008) used the following formula for their calculation:

$$\text{Net Working Capital (NWC)} = \text{Current Assets} \text{ minus } \text{Current Liabilities}$$

According to García (2009), liquidity ratios are used to measure the sufficiency that companies have to meet their receivables in the short term; That is, they establish the degree of viability or contrariety that a company can present "to cover its current debts with the result of transforming its current assets into cash" (Ortiz, 2018, p. 195). In this sense, the following liquidity indicators were used: cash flow indicator, availability indicator, net working capital over assets indicator, and net working capital over current liabilities indicator.

#### 3.2 Indebtedness

Debt ratios are the tool that analyzes an organization's capital structure (García Padilla, 2015; Oropeza, 2012) since they inform about the degree and proportion to which creditors contribute to its financing (Gitman & Zutter, 2012). Likewise, they examine the risk to creditors and owners and the advantages or detriments of possessing a certain amount of indebtedness for the company (Anaya, 2018; Van-Horne & Wachowicz, 2010).

In the same way, these ratios reveal the quantity and quality of the debt (Brealey, Myers, & Allen, 2010) and whether the profit obtained can sustain the organization's financial weight

(Brigham & Houston, 2004). For the analysis, the following indicators will be considered: debt indicator, autonomy indicator, solvency indicator, and debt quality indicator.

## 4. Research results

### 4.1 Working capital

Table 1 shows the net working capital for small and microenterprises. As can be seen in Table 1, in both groups of companies, the net working capital continues to be positive during all the years, which is a favorable aspect since, despite the arrival of the economic risk elements, the companies of the ceramic sector of Norte de Santander continue to receive economic and financial compensation. Therefore, from the point of view of the economic situation of the companies in the referenced sector, they have various types of liquid assets to meet their short-term obligations; therefore, the long-term financing of the companies is guaranteed by the volume they manage, which allows them to meet commitments beyond the normal operations of immediacy, as pointed out by Van-Horne & Wachowicz (2010).

From 2018 to 2019, microenterprises decreased their net working capital because their current liabilities were lower than their current assets or because they had fewer long-term investments to finance with their funds. In small companies, although in 2016, the net working capital decreased very slightly, nevertheless, a growth trend was maintained throughout the five years, a phenomenon allowing this group of companies to assume a certain solidity. Similarly, in 2019, such a strong increase in net working capital led small companies to a situation of possible idleness (Table 1).

Likewise, this phenomenon leads to a doubling of assets to meet short-term debt commitments, and this situation may in turn lead to underutilization of the company's available assets, which is the item that stands out the most for its growth in that year. Similarly, in the years referred to, microenterprises maintained idleness problems in their most liquid assets since the net working capital continued to be greater than current liabilities; however, as expected, when the available assets decreased in 2017, this idleness situation disappeared. Therefore, this aspect is positive since it makes the microenterprises' cash flow profitable, and therefore there is an apparent balance in the economic and financial areas.

**Table 1. Working capital for small and micro enterprises**

<b>INDICATOR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Net Working Capital in Small Businesses - Millions of Pesos	1,416	1,307	1,634	1,637	2,171
Net Working Capital in Microenterprises - Millions of Pesos	574	644	374	325	289

**Source:** own elaboration.

### 4.2 Liquidity

Table 2 shows the liquidity indicators for small companies. The liquidity conditions of this sector of companies in the ceramic cluster of Norte de Santander presented a situation in good balance after the border's closing, which is reflected in the indicators, which are stable in the period considered. The trend of the liquidity, cash, and availability indicators tends to increase throughout the period. In the fiscal year 2019, there is a possibility of idle situations in small companies, as mentioned in the study of net working capital in the previous section.

On the other hand, this notorious increase in the liquidity situation has not been entirely positive for the companies because the items that make it up are those that have increased the

most with the passage from 2017 to 2019 since they lose profitability (Reschiwati, Syahdina, & Handayani, 2020; Díaz, Maestre & Díaz, 2022). Similarly, when analyzing the figures presented, it was confirmed that the net working capital of small companies could meet the most urgent commitments and that this situation increases over the years, just as the current asset items increase. So "it can be noted that the company has money available" (Carchi-Arias, Crespo-García, González-Malla & Romero-Romero, 2020, p. 36), and this shows that there is an increase in liquidity (Barreto-Granda, 2020).

Similarly, in 2019, the result of the indicator higher than unity indicates that small companies present twice the current assets for their current liabilities, confirming the loss of profitability. The above implies a decrease in the current ratio (Mejía-Ayavaca, Garzón-Montealegre, Barrezueta-Unda, & Cervantes-Alava, 2021). In general, the situation of small companies is favorable in all fiscal years, except in 2019, where measures had to be taken to return current assets to profitability.

**Table 2. Liquidity indicators in small companies of the ceramic cluster of Norte de Santander**

<b>INDICATOR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Liquidity	1.49	1.57	1.72	1.77	2.07
Treasury	0.77	0.84	1.00	1.03	1.29
Availability	0.18	0.23	0.34	0.33	0.50
Net Working Capital/Assets	0.19	0.20	0.23	0.23	0.30
Net Working Capital/ Assets	0.49	0.57	0.72	0.77	1.07

**Source:** own elaboration.

To synthesize the analysis of the liquidity situation of the microenterprises of the ceramic cluster of Norte de Santander, Table 3 shows how the indicators of liquidity, cash, and availability presented values in 2015, which indicated possibilities of idleness, which was mostly due to the most liquid assets of the companies. These results coincide with Barbosa, Camelo, Deaza & Rodriguez (2018).

Also, Table 3 shows in these last two years, the ratios analyzed with results below unity, which implies that the liquidity of this business sector of the ceramic cluster of Norte de Santander, as well as (Sánchez-Giler, Garca-Regalado & Holguín-Alvarado, 2019, is largely subordinated to how fast the transformation of finished products into products available in the market can be done.

**Table 3. Liquidity indicators in microenterprises in the ceramic cluster of Norte de Santander**

<b>INDICATOR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Liquidity	2.20	2.50	2.04	2.09	1.80
Treasury	1.28	1.50	0.86	0.81	0.72
Availability	0.60	0.91	0.18	0.05	0.08
Net Working Capital/Assets	0.30	0.33	0.23	0.23	0.20
Net Working Capital/ Assets	1.20	1.50	1.04	1.09	0.80

**Source:** own elaboration.

### 4.3 Analysis of the indebtedness situation

Table 4 presents an analysis of the indebtedness of the two groups of companies belonging to the ceramic sector in Norte de Santander. The indebtedness situation of small companies belonging to the ceramic cluster of Norte de Santander, according to the first indicator, initially presents a balanced situation between financing with own and external resources; however, as the years go by, this group of companies opts to take on their indebtedness (Vila-Cárdenas,

2018). Therefore, by decreasing debt, small companies can generate greater financial independence by becoming organizations with more capital.

Likewise, the solvency indicator shows a positive trend for this type of company; growth was observed in the period analyzed, reaching its highest value in 2019, which indicates that for each monetary unit to be paid, companies have assets for a book value of 2.33. Authors such as Montero & Pacheco (2018) perceived similar results for solvency in this group of companies in Spain. The debt quality indicator reveals that the type of financing chosen is short-term, and there is a balance between debt with credit institutions and debt with suppliers in the last three years analyzed.

**Table 4. Indicators of indebtedness in small companies in the ceramic cluster of Norte de Santander**

<b>INDICATOR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Indebtedness	0.51	0.52	0.49	0.48	0.43
Autonomy	0.96	1.00	1.04	1.08	1.33
Solvency	1.96	1.91	2.04	2.08	2.33
Debt quality	0.76	0.66	0.65	0.63	0.65

**Source:** own elaboration.

Regarding the debt structure of microenterprises in the ceramic cluster of Norte de Santander, it can be seen in Table 5 how the debt indicator increased over the period. Similar results were observed by Yaguache-Aguilar, Higuerey-Gómez & Inga-Llanez (2019) in a study of companies suffering from high indebtedness. In this research, microenterprises start from a very standardized situation in their balance sheet, but when reaching 2018 and 2019, the situation is equalized between internal and external financing. Because of this, even when autonomy is decreasing, it remains within the appropriate ranges, so there is no dependence on third-party financing.

Similarly, in the analyzed period, the companies showed a convenient solvency indicator; therefore, these companies can face acquired indebtedness. In addition, most of the debts are short-term, although, in 2015 and 2016, they were quite evenly distributed between long-term and short-term. In other words, microenterprises have good liquidity, and short-term debts do not represent a financial difficulty. Therefore, microenterprises present a stable debt situation because, despite having problems in part operationally, they can still pay off the financial expenses arising from external debt.

**Table 5. Indicators of indebtedness in microenterprises in the ceramic cluster of Norte de Santander.**

<b>INDICATOR</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Indebtedness	0.37	0.37	0.42	0.44	0.44
Autonomy	1.67	1.71	1.38	1.27	1.27
Solvency	2.67	2.71	2.38	2.27	2.27
Debt quality	0.67	0.60	0.52	0.48	0.57

**Source:** own elaboration.

## Conclusions

In short, the liquidity situation for small and micro enterprises in the ceramic sector in Norte de Santander is very favorable and tends to grow. On the indebtedness side, the small companies show equilibrium, and the micro-companies show a negative situation that increased during the period under study. It is convenient for liquidity surplus management situations, and companies should have formulated a cash management policy to avoid idleness

in their liquidity. Also, consider how resources are applied, their permanent evaluation, and the analysis of their financial impact.

In order to improve financial management in small and microenterprises, it is necessary to design a methodology to support the financial diagnosis and serve as a guide to identify existing problems and present the main variations and negative factors that influence financial management. Given a prolific number of financial indicators, companies could select and adopt the most necessary ones according to the type of company without forgetting liquidity and indebtedness as a starting point. As they advance in the management of these indicators and incorporate others that support the improvement of business management,

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